DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

OPEN-FILE REPORT 86-334
SHEET 2 OF 2

DESCRIPTION OF MAP UNITS

	Description of materials	Distribution and thickness	Topography and drainage	Permafrost	Susceptibility to frost action	Suitability for construction	Special problems
Qt Thermokarst deposits	Lithology dependent upon the materials in which the thermokarst basin develops. In the area underlain by marine silt and clay (Qm) the thermokarst deposits consist of silt and clay. Thermokarst deposits developed in unit QTas are fine to medium sand and silty sand; those formed in units Qsa, Qsg, and QTsg are composed of silt to very fine sand. All of the deposits contain disseminated detrital organic matter and chunks of peat of various sizes. Scattered, discrete, cobble to boulder-sized erratics and lenses of granules to small pebbles occur where thermokarst deposits are developed in Qm. Unit includes the deposits of minor streams that cross or connect thermokarst basins. Most thermokarst basins contain or have contained lakes or ponds, and the deposits in them are primarily lacustrine in origin.	Occurs primarily in the northern part of the map area; not differentiated in alluvium or deltaic deposits. Generally less than 3 m thick.	Forms flat to moderately dissected areas within isolated, interlocking, or overlapping basins. Maximum surface relief within basins ranges from about 3 m to 10 m and is determined by the degree of dissection and presence of pingos. Pingos occur primarily in thermokarst-lake deposits developed in granular materials (Galloway and Carter, 1978; Carter and Galloway, 1979) and attain a maximum height of about 10 m. Maximum relief between basin floors and surrounding areas ranges from about 5 m to 15 m. Drainage is poor except in those basins in the eolian sand unit that have been breached and deeply dissected.	Perennially frozen immediately below a thin active layer about 0.5 m thick. Amount of excess ice is largely dependent upon the age of the deposits; early Holocene deposits are ice-rich, whereas the deposits and subjacent strata of recently drained lake basins may have relatively low ice contents. However, wedge ice in the subjacent strata may have survived the lake episode if the lake was shallower than 2 m.	Highly frost susceptible where developed in marine silt and clay. Susceptibility in remainder of area varies within individual thermokarst basins depending upon silt content and amount of detrital organic matter; deposits in the central part of thermokarst-lake basins generally very susceptible due to concentration of silt and organic matter.	Generally unsuitable as a source of materials due to silt, organic and ice content, and the seasonal flooding of thermokarst basins by snow melt. The older deposits are less suitable as construction sites due to increasing amount of excess ice with age.	Differential settlement may occur upon thaw of permafrost. Very poor drainage except where deeply incised. Pingos common where thermokarst-lake deposits developed in granular materials.
Qal Alluvium	Stratified deposits of gravel, gravelly sand, sand, and minor silt. Contains detrital wood and peat. Includes deposits of flood-plain lakes and thermokarst lakes. Organic-rich silt occurs as thin overbank deposits and as thicker lacustrine deposits that fill abandoned channels. Small eolian dunes are common on modern point bars.	Occurs along all the major streams in the quadrangle, Includes flood-plain and alluvial terrace deposits as much as 8 m above modern streams. Probably not more than 5 m thick along modern channels.	Forms channels and bars of the modern rivers and terraces of older river courses. Channel scars are well preserved on the lower terraces. Terrace drainage generally poor. Subject to flooding to 6 or 8 m above low water on some streams.	Permafrost underlies the entire unit except for a 2 to 6 m thick unfrozen layer beneath some of the larger channels and lakes. Elsewhere, active layer about 0.5 m thick. Ice wedges are well developed in the terrace materials, and the silty deposits that form the filling material of abandoned channels contain abundant intergranular ice.	Organic-rich silty materials that fill abandoned channels and form overbank deposits are highly frost susceptible. Point bar and channel deposits with less than 6 percent silt are generally not frost susceptible.	Provides good foundations in channel and bar areas where material consists of medium to coarse sand, gravelly sand, and gravel; and moderately good to poor foundations on terraces and the older parts of flood-plains. Organic-rich lacustrine silt that fills abandoned channels is not suitable for foundations. Deposits with low silt content may be suitable for fill.	Subject to bank erosion, scour, channel shifting, and seasonal flooding. Wind erosion and dune building common on point bars and would occur on other parts of the flood plain and on terraces if surface vegetation is disturbed. Excavation of stream-bed materials may pose environmental problems.
Qd Deltaic deposits	Sand and silty sand grading to silt at the coast. Contains some very fine-grained organic matter.	Occurs at the mouths of the Canning, Aichilik, Egagsrak, and Kongakut Rivers The thickness undetermined, but probably less than about 15 to 20 m.	Forms channels, banks, islands, sandbars, and mudflats of the modern deltas. Very poorly drained. Lakes and ponds common on islands. Low dunes common on and adjacent to sandbars.	Islands are underlain by permafrost and contain active ice wedges. Active layer generally less than 0.5 m thick beneath tundra covered areas; somewhat thicker beneath bare ground. Open taliks may occur beneath the deepest channels and lakes.	Highly frost susceptible.	Deposits with proper silt content may be suitable for borrow, but excavation may pose environmental problems and would be subject to flooding. Not suitable for foundations due to frost susceptibility, poor drainage, and frequent channel shifts.	Subject to seasonal flooding, formation of river-ice dams, bank erosion, scour, and channel shifting.
Qb Beach deposits	Marine deposits of gravel, gravelly sand, and sand, locally with considerable amounts of detrital organic material including peat and wood. Gravel composed of chert, granite, quartzite, dolomite, diabase, and other rock types and, is derived from erosion of older deposits.	Present locally along the Beaufort Sea coast, and as offshore islands. Deposits are thin and narrow, generally from 1 to 3 m thick and from 10 to 50 m wide, but offshore islands may be as much as 1 km wide.	Forms offshore islands and low ridges along and slightly inland from the modern shorelines. Drainage good on ridges but where more than one ridge is present the inter-ridge areas are poorly drained.	The active layer on presently forming beaches and spits may be as much as 2 m thick. Inactive beach ridges may have actively growing ice wedges. Probably contains less total ice than sandy and silty deposits of other map units.	Granular materials not susceptible to frost action.	Poor for concrete due to chert and organic content and unsuitable size grading. Otherwise, generally good except may require addition of binder for surfacing or base course. Materials limited in volume.	Subject to ice shove along shore and subject to storm surge flooding below 3 m in altitude. Excavation of actively forming beaches needs impact evaluation to determine effect of borrowing activities on coastal erosion and deposition.
Qsm Eolian silt and sand over marine silt and clay	Eolian silt and sand, clayey silt, silty clay, and minor sandy silt. Marine deposits contain scattered ice-rafted pebbles, cobbles, and boulders of red granite, pink quartzite, dolomite, and other rock types not found in streams draining the north flank of the Brooks Range. Also present are the remains of marine mammals, mollusks, foraminifers, and ostracodes. The upper two m of these deposits have been extensively reworked by thermokarst-lake activity and are overlain by 1 to 2 m of peat.	Occurs along the coast and on Flaxman Island. Eolian silt and sand from 2 to 5 m thick. Thickness of marine deposits not determined, but extends at least to the base of coastal bluffs that are as much as 6 m in height.	Forms poorly to moderately well-drained surfaces isolated by therokarst-lake basins.	Perennially frozen beneath an active layer that is generally less than 0.5 m thick. Active ice wedges well developed and fossil ice wedges locally occur at depths of a few m. Interstitial ice content in excess of natural voids down to 6 or 8 m below surface and may produce more settlement upon thawing than the 3.3 m noted in marine sand near Barrow (Hussey and Michelson, 1966).	Highly frost susceptible.	Not suitable for foundations because of excessive differential settlement on thaw of ice-rich permafrost. Construction materials not readily available.	Easily eroded. Silt has high liquefaction potential when thawed.
Qsa Eolian silt and sand over alluvium	Eolian silt and very fine sand overlying alluvium of local derivation. The silt and fine sand contains disseminated fine-grained organic material and is indistinctly stratified. The underlying alluvium is poorly stratified to stratified pebble to cobble gravel and gravelly sand containing angular to rounded clasts derived from nearby bedrock outcrops.	Occurs east of the Aichilik River in the southern part of the map area. Eolian silt and very fine sand as much as 10 m thick. Thickness of alluvium undetermined.	Forms flat to gently undulating lowland surfaces that are dissected to depths of about 10 m. Drainage good to fair.	Active layer generally less than 0.5 m thick. Ice wedges well developed and sediment may contain a high volume of interstitial ice.	Silt and silty sand are frost susceptible.	Not suitable for borrow except as binder material. Not suitable for foundations because of excessive differential settlement on thaw of ice-rich permafrost.	Easily gullied by running water when water is channeled by construction activities or when surface vegetation is removed. Disruption of surface vegetation may cause melting of ice wedges and lead to subsidence. Locally, deposits may be liquefiable when thawed and saturated.
Qg Fluvial gravel and gravelly sand	Stratified deposits of pebble, cobble, and boulder gravel, gravelly sand, and minor silty sand. Grain size progressively decreases northward. Clasts well rounded and composed of a wide variety of rock types derived from within the Brooks Range. Includes outwash of several glacial episodes. Generally covered by less than 1 to 2 m of peat and eolian sand or silt.	Occurs widely throughout the map area. Thickness undetermined.	Forms stream terraces and inactive parts of alluvial fans and outwash fans. Poorly drained.	Perennially frozen beneath an active layer that is generally less than 0.5 m thick. Ice wedges well developed but interstitial ice content probably not in excess of natural voids.	Granular materials not susceptible to frost action.	Poor for concrete due to chert content. Otherwise generally good except may require addition of binder for surfacing or base course. Generally provides good natural foundations if proper construction techniques are used to avoid melting ice wedges.	
Qsg Eolian silt and sand over fluvial gravel and gravelly sand	Eolian silt and very fine sand overlying gravel, gravelly sand, and minor silty sand. The silt and fine sand contains disseminated fine-grained organic material and is indistinctly stratified. This upper unit is coarsest in the north and sand generally predominates over silt within a few km of the coast. The underlying fluvial deposits and outwash have the characteristics described for map unit Qg.	Occurs widely throughout the map area. Eolian silt and sand ranges in thickness from 2 m to about 10 m. Thickness of underlying gravel undetermined.	Forms gently rolling terrain dissected by gullys as much as 10 m deep. Drainage good to fair.	Active layer generally less than 0.5 m thick. Ice wedges well developed and silt and very fine sand may contain a high volume of interstitial ice.	Silt and silty sand are frost susceptible.	Fine-grained materials not suitable for borrow except as binder; coarse-grained materials not suitable because of thickness of overburden. Not suitable for foundations because of excessive differential settlement on thaw of ice-rich permafrost.	Easily gullied by running water when water is channeled by construction activities or when surface vegetation is removed. Disruption of surface vegetation may cause melting of ice wedges and lead to subsidence. Locally deposits may be liquefiable when thawed and saturated.
Qc Colluvial deposits	Variable composition ranging from silt and very fine sand with dispersed pebbles and cobbles to silty, gravelly rubble. Contains disseminated, fine-grained organic matter and, in places, chunks of peat of various sizes, and pieces of detrital wood.	Occurs throughout the southern part of the map area. Thickness from 1 to 10 m.	Forms valley and gully slopes and bottoms. Drainage good on upper slopes, poor on lower slopes and in valley and gully bottoms.	Perennially frozen beneath an active layer that is generally less than 0.5 m thick. Contains ice wedges and moderate to high volumes of interstitial ice beneath lower slopes and valley bottoms.	Highly frost susceptible.	Generally unsuitable as a source for materials because of organic content. Not suitable for foundations on lower slopes and valley bottoms because of excessive differential settlement on thaw of ice-rich permafrost.	Easily gullied by running water. Disruption of surface vegetation on lower slopes and valley bottoms may cause melting of ground ice and lead to subsidence.
Qdf Debris flow deposits	Silty rubble containing angular blocks up to several m in diameter of sandstone, limestone, and dolomite.	Occurs along the front of the Sadlerochit Mountains west of Itkilyariak Creek. Thickness undetermined but possibly 5 to 10 m.	Forms fan-shaped deposits at the mouths of steep gullys. Well drained.	Perennially frozen beneath an active layer that is probably no thicker than 0.5 m. Ice in excess of natural voids probably not present.	Generally not frost susceptible, except where silt content exceeds 6 percent.	Not suitable for foundations because of steep slopes. Not suitable for borrow.	Slopes unstable if undercut. New debris flows may occur at these localities and at the mouths of other steep gullys.
Qgd Younger glacial drift	Till and minor ice-contact deposits. The till is unstratified, unsorted, compact, stoney, gravelly, silt; erratics are up to 3 m in diameter. The ice-contact deposits are stratified sand and gravelly sand.	Occurs along the Canning River and from the Sadlerochit River to a few km east of the Aichilik River. As much as 200 m thick.	Forms hummocky plains and lobate moraines developed during at least three separate glacial episodes (oldest to youngest: Qgd_1, Qgd_2, Qgd_3). Relief ranges from 10 to 250 m. Hummocks generally well drained; depressions generally poorly drained and may contain accumulations of silt and peat.	Perennially frozen beneath an active layer that is generally less than 0.5 m thick, but may be thicker on south-facing slopes. Interstitial ice content probably high in upper few m but low at depth. Buried glacier ice may be present in Qgd_3.	Till moderately to highly frost susceptible depending upon local composition. Ice-contact deposits generally not frost susceptible unless silt content greater than 6 percent.	Till may be usefull as impermeable fill but otherwise unsuitable as construction materials without much screening and washing. Locally, may provide good natural foundations but slopes may be unstable.	Slopes subject to mass movements.
QTgd Older glacial drift	Very poorly exposed; three of the four occurrences mapped by inference only. The single exposure is on the Jago River and consists of unstratified, unsorted, stoney silt; erratics up to 1.5 m in diameter.	Occurs between Itkilyariak Creek and the Sadlerochit River, on the Jago River, and west of Matsutnak River. Thickness undetermined, but at least 25 m at the Jago River locality.	Forms a low ridge west of the Sadlerochit River, irregular terrace on the Jago River, and hummocky terrain west of Matsutnak River. Drainage poor to fair.	Perennially frozen beneath an active layer that is probably no more than 0.5 m thick. Contains ice in excess of natural voids in upper few m, especially near Matsutnak River.	Moderately to highly frost susceptible depending on local composition.	Till may be useful as impermeable fill but otherwise unsuitable as construction material without much screening and washing. Probably unsuitable for natural foundations due to high ice content.	Slopes subject to mass movements.
QTg Gravel	Stratified deposits of pebble, cobble, and boulder gravel. Clasts predominantly of sandstone, limestone, and dolomite. Commonly has a silty, calcareous matrix.	Occurs between the Tamayariak River and Marsh Creek. Up to 20 m thick.	Forms dissected river terraces and upland surfaces. Well drained.	Entire unit is perennially frozen. Thickness of active layer is unknown but may be as much as 2 m on unvegetated, south-facing slopes. Ice content not known but probably not in excess of natural voids. Ice wedges probably well developed.	Susceptible to frost action where matrix is silty.	Suitable for fill, base course, and surface course (with proper grading). Provides good natural foundations if proper construction techniques are used to avoid melting ice wedges.	-----
QTsg Eolian silt and sand over fluvial gravel, gravelly sand, and sand	Eolian silt and very fine sand overlying gravel, gravelly sand, sand, and silty sand of fluvial and possibly glaciofluvial origin. The silt and fine sand contains disseminated fine-grained organic material and is indistinctly stratified. The underlying fluvial deposits are stratified and contain clasts of a wide range of rock types derived from the interior of the Brooks Range.	Occurs between the Canning and Sikrelurak Rivers. Eolian silt and sand as much as 15 m thick; fluvial deposits range from 10 m to at least 25 m thick.	Forms undulating upland surfaces that are dissected to depths of 25 m. Drainage good to poor.	Active layer less than 0.5 m thick. Ice wedges well developed and silt and very fine sand may contain a high volume of interstitial ice.	Silt and silty sand are frost susceptible.	Fine-grained materials not suitable for borrow except as binder; coarse-grained materials not suitable because of thickness of overburden. Not suitable for foundations because of excessive differential settlement on thaw of ice-rich permafrost.	Easily gullied by running water when water is channeled by construction activities or when surface vegetation is removed. Disruption of surface vegetation may cause melting of ice wedges and lead to subsidence. Locally deposits may be liquefiable when thawed and saturated.
QTgm Fluvial gravel over marine sand, silt, and clay	Pebble, cobble, and boulder gravel of fluvial and perhaps glaciofluvial origin overlying marine sand, silt, and clay. The gravel is stratified and contains clasts composed of a wide range of rock types derived from the interior of the Brooks Range. The marine deposits are stratified and include sediments formed during two marine transgressions.	Occurs between the Katakturuk and Sadlerochit Rivers in the northern part of the map area. The gravel is as much as 10 m thick, the marine beds are about 10 m thick.	Forms ridges on the north and south flanks of the marsh anticline and across its crest. Generally well drained.	Perennially frozen beneath an active layer that may be as thick as 0.5 to 1.0 m on south facing slopes. Fine-grained marine deposits may contain ice in excess of natural voids; gravel probably does not contain excess ice.	Surface materials generally not susceptible to frost action.	Should provide good natural foundations away from bluff edges. Gravel may be suitable for fill, base course, or surfacing.	Marine deposits subject to mass movements.
QTas Alluvial and eolian sand and marine sand and silt	Highly variable composition, but generally consists of stratified deposits of marine silty sand, gravelly sand, silt, and clay, overlain by fluvial gravelly sand, gravel, and minor organic-rich silt, which in turn, locally, is overlain by eolian sand. In places, marine deposits do not occur, and only fluvial and eolian deposits are present. The marine deposits commonly are fossiliferous, containing mollusks, foraminifers, ostracodes, and rare marine mammal remains. Fluvial deposits locally contain buried peat beds. The lower part of the eolian sand contains ventifacted pebbles of chert and quartz derived from the fluvial deposits. Wedges of pebble-free eolian sand penetrate and deform the underlying deposits. Peat and/or peaty, silty sand occur at the top of the unit.	Occurs between the Jago River and Pokok Bay in the northern part of the map area. Thickness of marine deposits 1 to 6 m; fluvial deposits 5 to 10 m; eolian deposits 1 to 5 m; peat and peaty sand 1 to 2 m. Aggregate thickness 10 to 15 m.	Forms flat to gently rolling terrain broken by thermokarst basins and ravines. Drainage good on slopes, fair to poor on flatter surfaces.	Perennially frozen beneath an active layer that is generally less than 0.5 m thick. Ice wedges occur in the upper few m. Silt, organic-rich silt, and clay may have interstitial ice in excess of natural voids.	Silty sand generally frost susceptible. Silt and clay highly frost susceptible.	Not suitable for foundations because of excessive differential settlement on thaw of ice-rich permafrost. Sand may be suitable for fill, base course, or surfacing if silt content is appropriate and if stabilized to prevent deflation.	Easily eroded by running water if flow is concentrated by construction activities or if surface vegetation is removed. Sand-wedge filling subject to liquefaction if thawed and saturated. Susceptible to wind erosion if surface vegetation is removed.
Ts Siltstone, shale, and sandstone	Marine and nonmarine siltstone, shale, sandstone, and minor conglomerate Thin to medium bedded; poorly indurated.	Occurs from the Katakturuk River east to beyond Carter Creek. Present beneath colluvium on the valley sides of the northern parts of the Katakturuk River, Marsh Creek, and Carter Creek. Thickness undetermined.	Forms bluffs along the Katakturuk River and rolling hills from the Katakturuk River east to beyond Carter Creek. Well drained.	Perennially frozen but ice content insignificant.	Fine-grained and/or thin bedded units susceptible to frost action.	Generally not suitable for borrow except locally as binder material. Not suitable for foundations due to slope instability.	Subject to mud flows, debris flows, and rock falls.
Tcg Conglomerate	Poorly indurated pebble to cobble conglomerate with a sandy matrix. Clast rock types include siliceous sandstone, silicified siltstone, chert, and quartz.	Occurs north of the Kavik River at the west edge of the map. Thickness undetermined but at least 85 m.	Forms low hills. Well drained.	Perennially frozen. Locally may contain ice in excess of natural voids.	Frost susceptible where silt content exceeds 6 percent.	Not suitable for construction materials without much screening and washing. May locally provide adequate natural foundations but disturbed slopes may be unstable.	Subject to mud flows on disturbed slopes.
Tcgm Muddy conglomerate	Poorly indurated pebble to cobble conglomerate with a silty to clayey matrix that locally may be bentonitic. Clast rock types include siliceous sandstone, siltstone, quartz, chert, and tuff(?).	Occurs north of the Kavik River at the west edge of the map. Thickness undetermined but at least 50 m.	Forms low hills. Well drained.	Perennially frozen but ice content insignificant.	Generally not frost susceptible.	Should provide adequate natural foundations. Suitable for fill, base course, and surface course (with proper grading), but unsatisfactory for aggregate because of chert content.	
KTcg Conglomerate, sandstone, and siltstone	Indurated pebble conglomerate, sandstone, and siltstone.	Occurs between Okpikrourak Creek and Angun River in the southern part of the map area. Nearly 3 km thick.	Forms an east-west trending belt of low hills. Well drained.	Perennially frozen but ice content insignificant.	Subject to frost shattering along joints and bedding planes.	Should provide adequate natural foundations. Unsuitable for construction materials except perhaps for crushed stone.	-----
Kp Pyroclastic rocks	Silicified tuff and bentonitic shale with minor silty shale.	Occurs between the Tamayariak and Sadlerochit Rivers. Thickness undetermined.	Forms knolls and hillslopes north of the Sadlerochit Mountains. Well drained.	Perennially frozen but ice content insignificant.	Subject to frost shattering along joints and bedding planes.	Unsuitable for construction materials or natural foundations where bentonitic beds predominate.	-----
JKss Sandstone, siltstone, and shale	Marine and nonmarine sandstone, siltstone, and shale. Thinly to thickly bedded; moderately to poorly indurated.	Occurs in southern part of the map area from near the west edge of the map to near the Egagsrak River. Also occurs in the central part of the map area along the Jago River and west of the Niguanak River. Thickness undetermined.	Forms outcrops on colluvial slopes and, locally, forms bluffs on valley sides. Well drained.	Perennially frozen but ice content insignificant.	Thin bedded and/or fine-grained units susceptible to frost action.	Locally, may provide good foundations. Some sandstone outcrops may provide suitable sources for crushed stone.	Locally, subject to debris flows and rocks falls. Evaluation of slope stability requires knowledge of local rock structure with respect to land slope.
TPs Sandstone, siltstone, and quartzite	Predominantly well indurated, resistant ferruginous sandstone and orthoquartzite and siliceous siltstone. Locally conglomeratic. Equivalent to the Sadlerochit Group as mapped by Reiser and others (1980).	Occurs between the Sadlerochit and Katakturuk Rivers and between the Okerokovik and Siksikpolok Rivers in the southern part of the map area. Thickness variable; 200 m at the type locality for the Sadlerochit Group (Betterman and others, 1975).	Forms cuestas, river bluffs, and steep hillslopes. Well drained.	Perennially frozen but ice content insignificant.	Subject to frost shattering along joints and bedding planes.	Suitable for crushed stone and riprap. Generally not suited for construction sites because of steep slopes.	Subject to rock falls.
Ovc Volcaniclastic and volcanic rocks	Basaltic volcanic wacke, tuff, agglomerate, tuffaceous sandstone, volcanic conglomerate, flow breccia, calcareous volcanic wacke, tuffaceous limestone, and tuffaceous dolomite (see Reiser and others, 1980).	Occurs on both sides of the Kongakut River at the southern edge of the map. Thickness 10 to 100 m.	Forms river bluffs and knolls on ridge crests.	Perennially frozen but ice content insignificant.	Subject to frost shattering along joints and bedding planes.	Possibly suitable for crushed stone. Generally not suited for construction sites because of steep slopes.	Subject to rock falls.
ld Limestone and dolomite	Fine-grained limestone, oolitic limestone, bioclastic limestone, stromatolitic dolomite, and pisolitic dolomite.	Occurs between the Sadlerochit and Katakturuk Rivers and east of the Aichilik River. Thickness variable, but, locally, more than several hundred m.	Forms steep slopes. Well drained.	Perennially frozen but ice content insignificant.	Subject to frost shattering along joints and bedding planes.	Suitable for crushed stone and, locally, for riprap. Generally not suitable for construction sites because of steep slopes.	Subject to rock falls.
sc Slate, phyllite, argillite, quartzite, and chert	Predominantly thin-to medium-bedded, fissile, pelitic rocks, locally, silicified, with interbedded quartzite and chert.	Occurs east of the Kongakut River in the southern part of the map area. Exposed thickness from 50 to more than 300 m.	Forms bluffs, ridgecrests, and knolls. Well drained.	Perennially frozen but ice content insignificant.	Subject to frost shattering along joints and bedding planes.	Locally, may be suitable for crushed stone. Generally not suited for construction sites because of steep slopes.	Subject to rock falls on steep slopes.

ENGINEERING-GEOLOGIC MAPS OF NORTHERN ALASKA, COASTAL PLAIN AND FOOTHILLS OF THE ARCTIC NATIONAL WILDLIFE REFUGE

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