United States Department of Agriculture,
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In cooperation with
Eielson Air Force Base, University of
Alaska Fairbanks Agricultural and Forestry
Experiment Station, Fairbanks Soil and Water
Conservation District, and the Alaska
Soil and Water Conservation District

Soil Survey of Eielson Air Force Base, Alaska

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This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture (USDA) and other Federal agencies, State agencies, and local agencies. The Natural Resources Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this survey was completed in 1997. Unless otherwise indicated, statements in this publication refer to conditions in the Survey Area in 1997. This survey was made cooperatively by the Natural Resources Conservation Service, Eielson Air Force Base, University of Alaska Fairbanks Agricultural and Forestry Experiment Station, and the Alaska Soil and Water Conservation District. It is part of the technical assistance furnished to the Fairbanks Soil and Water Conservation District.

Soil maps in this survey may be copied without permission. However, enlargements of these maps could cause misunderstanding of the detail of the mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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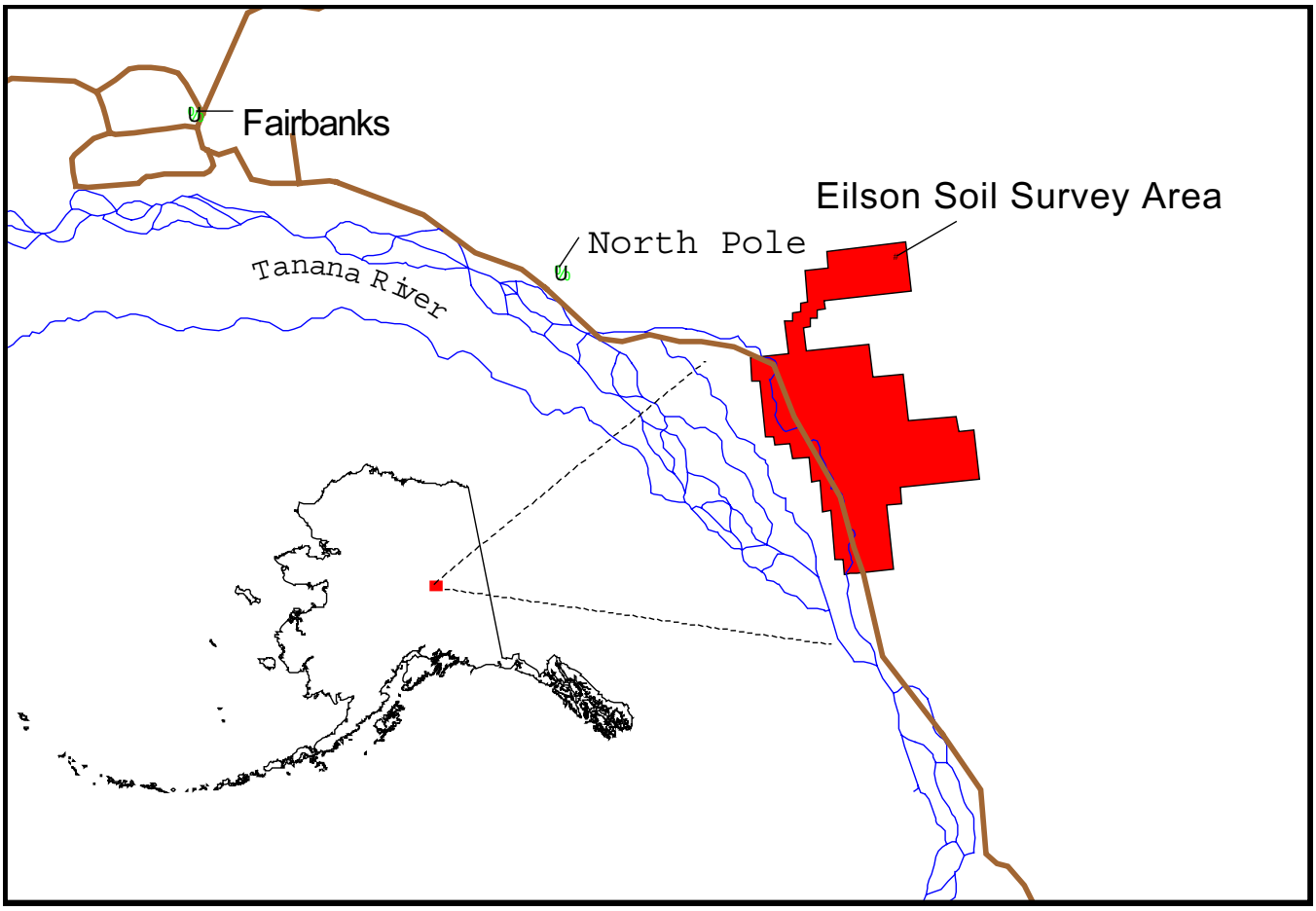
Fairbanks
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Foreword

This soil survey contains information that can be used in land-planning programs on Eielson Air Force Base, Alaska. It contains predictions of soil behavior for selected land uses and highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Many soil properties that affect land use are described in this soil survey. The location of each soil is shown on the soil maps. Each soil in the Survey Area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Alaska Cooperative Extension.

This soil survey is part of a larger survey effort in-progress for the Fairbanks Area. As such, this publication represents an interim report—soil units and soil types may change. A comprehensive publication that will include the Fairbanks Area and Eielson Air Force Base will be released when the entire survey effort has been completed.

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Soil Survey of
Eielson Air Force Base, Alaska

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United States Department of Agriculture, Natural Resources Conservation Service,
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How This Survey Was Made

This survey provides information about the soils and miscellaneous areas on Eielson Air Force Base, including the description and location of the soils and miscellaneous areas and a discussion of their suitability, limitations, and management for specified uses.

Before beginning the fieldwork for this survey, relevant information on the climate, geology, geomorphology, hydrology, and vegetation of the Survey Area was assembled. Aerial photography taken in 1990 at a scale of 1:40,000 was acquired, enlarged to a scale of approximately 1:24,000, then printed in black-and-white for field use and mapping during the survey.

The soils and miscellaneous areas in the Survey Area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation. Each kind of soil and miscellaneous area is associated with a particular kind or segment of the landscape. By observing the soils and miscellaneous areas in the Survey Area and relating their position to specific segments of the landscape, soil scientists develop a concept or model of how the soils were formed. During mapping, this model enables soil scientists to predict with considerable accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Soils on the landscape commonly merge into one another as their characteristics gradually change. To construct an accurate map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationships, are sufficient to predict the kinds of soil in an area and to determine the boundaries.

To characterize and map the soils, soil scientists dug many holes to study the soil profile (the sequence of natural layers, or horizons, in a soil). The profile extends from the surface down into the unconsolidated material in which the soil formed. Soil scientists also observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of native plants; and the kinds of geologic materials.

Soil scientists recorded the characteristics of the soil profiles they studied. They noted color, texture, size, and shape of soil aggregates; kind and amount of rock fragments;

distribution of plant roots; soil temperature; reaction; and other features. After describing the soils and determining their properties, soil scientists classified the soils according to "Soil Taxonomy" (*Soil Survey Staff 1975*). The soil classification allows information about management of similar soils in other areas to be applied to soils on Eielson Air Force Base.

In addition to soil properties, variables such as climate and biological activity affect soil behavior. Average soil conditions are predictable, but conditions at a specific time and place are difficult to predict. For example, soil scientists can state that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the Survey Area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Each map unit consists of an area of specified soil or soils having similar use and management. It also contains minor inclusions of soils with different use and management. Each map unit is also defined in terms of non-soil features such as slope, climate, and landform. Aerial photographs help to accurately locate boundaries by showing trees, lakes, and rivers.

General Nature of the Survey Area

Eielson Air Force Base lies primarily on the Tanana lowland, a nearly flat alluvial plain located between the Alaska Range and the Yukon-Tanana upland. The hills in the eastern and northern parts of the Base are in the Yukon-Tanana upland (*Wahrhaftig 1965*).

Elevations range from 500 to 650 feet (152 to 198 m) on the plain of the Tanana lowland. Geologic materials in the lowland are river deposits consisting of sand and gravel, with a mantle of finer material. These river deposits are saturated with water, in most places below the depth of observation for this survey (6 feet, or 2 m), but occasionally within a foot or two of the surface. Permafrost is present in the lowland and covers approximately one third to one half of the Area—there is little evidence of large bodies of ground ice.

In the Yukon-Tanana upland, elevations range from 575 feet (175 m) on lower slopes to 1060 feet (323 m) on the highest hilltop. Geologic materials consist of weathered bedrock with a mantle of windblown silt (loess). This mantle is only about a foot thick (< 1 m) on hilltops, but many feet thick in the lowlands. Large bodies of ground ice are present in the thick silty deposits on the lower slopes. Permafrost is present on lower slopes and north-facing slopes.

Eielson Air Force Base has a continental subarctic climate with long, cold winters and short, warm summers. Summer (June, July, and August) temperatures average 58ºF (15ºC), and winter (November through March) temperatures average -2ºF (-19ºC). The average annual precipitation is 13 inches (33 cm), with July and August generally being the wettest months and April the driest. Snow covers the ground continuously from October to late April or early May. A detailed climatic data summary is given in Tables 1, 2, and 3.

Detailed Soil Map Units

The map units delineated on the detailed maps included with this survey represent the soils or miscellaneous areas in the Survey Area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses and plan the management needed for those uses. More information about each map unit is given under the heading "Use and Management of the Soils."

A map unit delineation on the detailed soil maps represents an area on the landscape and consists of one or more soils or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class, there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and they do not affect use and management. These are called similar inclusions. They may or may not be mentioned in the map unit description. However, other included soils and miscellaneous areas have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently, they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, on-site investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series.* The soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying layers. They also can differ in slope, stoniness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, "Fairbanks silt loam, 7 to 12 percent slopes" is a phase of the Fairbanks series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern, or in such small areas, that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Map unit 363 “Jarvis-Salchaket complex” is an example of a complex in this Survey Area.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the Survey Area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. There are no associations mapped on Eielson Air Force Base.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Map unit WAH “Typic Cryaquent, Terric Cryofibrist, and Histic Cryaquept soils” is an example of an undifferentiated group in this Survey Area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Map unit Lf “Landfills” is an example.

The tables give properties of the soils and the limitations, capabilities, and potentials for many uses. Scientific names of plants mentioned in the descriptions are given in Table 18. The glossary defines many of the terms used in describing the soils or miscellaneous areas.

Map Unit Descriptions

9—Histels, Terric

Composition

Histels, Terric and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Histels, Terric and Similar Soils

Landform: alluvial terraces and hillslopes
Position on the landscape: terrace flats, toeslopes, and depressions
Slope range: 0 to 1 percent
Slope features: shape—plain or concave
Organic mat on surface: 16 to 39 inches (41 to 99 cm) thick
Vegetation: sedges, low shrubs, stunted black spruce, and mosses

Typical profile:
0 to 17 inches (0 to 43 cm)—black mucky peat
17 to 25 inches (43 to 64 cm)—very dark brown muck
25 to 29 inches (64 to 74 cm)—very dark brown frozen muck
29 to 39 inches (74 to 99 cm)—very dark gray frozen silt loam

Drainage class: very poorly drained
Permeability: rapid in the slightly decomposed surface peat; moderate to low in the subsurface peat; impermeable in the frozen soil

Available water capacity: high
Depth to frozen soil (July-August): 16 to 35 inches (41 to 89 cm)
Runoff: high
Depth to seasonally high water table: 0 to 10 inches (0 to 25 cm) or ponded
Hazard of erosion: by water—none if the vegetation is not disturbed, slight if the vegetation is removed; by wind—none if the vegetation is not disturbed, severe if the vegetation is removed
Hazard of flooding: none

Included Areas

*soils with less than 16 inches (less than 41 cm) of organic material

Major Management Factors

Elevation: 400 to 900 feet (122 to 274 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*low strength organic material
*permafrost
*subsidence due to thaw of ground ice
*high water table

20—Mosquito peat

Composition

Mosquito peat and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Mosquito Peat and Similar Soils

Landform: floodplains and terraces
Position on the landscape: alluvial flats and depressions
Slope range: 0 to 1 percent
Slope features: shape—plain or concave
Organic mat on surface: 9 to 22 inches (23 to 56 cm) thick
Vegetation: stunted tamarack and black spruce, with shrub birch and cottonsedge in the understory

Typical profile:
0 to10 inches (0 to 25 cm)—black peat and mucky peat
10 to 19 inches (25 to 48 cm)—dark gray and dark grayish brown mottled silt loam
19 to 29 inches (48 to 74 cm)—dark grayish brown frozen silt loam

Drainage class: very poorly drained

Permeability: moderate in the organic mat and unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high

Depth to frozen soil (July-August): 13 to 43 inches (33 to 109 cm)
Runoff: high
Depth to seasonally high water table: 0 to 12 inches (0 to 30 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Tanana soils
*soils that do not contain permafrost

Major Management Factors

Elevation: 400 to 500 feet (122 to 152 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*flooding
*perched water table
*permafrost
*ponding
*subsidence due to thaw of ground ice
*wetness

21A—Goldstream peat, 0 to 3 percent slopes

Composition

Goldstream soils and similar inclusions: 80 percent
Contrasting inclusions: 20 percent

Characteristics of Goldstream and Similar Soils

Landform: hillslopes and terraces
Position on the landscape: toeslopes and terrace flats
Slope range: 0 to 3 percent
Slope features: shape—plain or concave
Organic mat on surface: 8 to16 inches (20 to 41 cm) thick
Vegetation: stunted black spruce with low shrubs, sedge tussocks, and moss

Typical profile:
0 to 3 inches (0 to 8 cm)—dark brown peat
3 to 9 inches (8 to 23 cm)—black mucky peat
9 to 20 inches (23 to 51 cm)—very dark grayish brown and gray mucky silt loam
20 to 27 inches (51 to 69 cm)—gray frozen silt loam

Drainage class: very poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high

Depth to frozen soil (July-August): 12 to 24 inches (30 to 61 cm)
Runoff: high
Depth to seasonally high water table: 0 to 6 inches (0 to 15 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Histels
*Chatanika soils

Major Management Factors

Elevation: 400 to 900 feet (122 to 274 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*flooding
*permafrost and thaw subsidence

21B—Goldstream peat, 3 to 7 percent slopes

Composition

Goldstream soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Goldstream and Similar Soils

Landform: hillslopes and terraces
Position on the landscape: toeslopes and terrace flats
Slope range: 3 to 7 percent
Slope features: shape—plain or concave
Organic mat on surface: 8 to16 inches (20 to 41 cm) thick
Vegetation: stunted black spruce with low shrubs, sedge tussocks, and moss

Typical profile:
0 to 3 inches (0 to 8 cm)—dark brown peat
3 to 9 inches (8 to 23 cm)—black mucky peat
9 to 20 inches (23 to 51 cm)—very dark grayish brown and gray mucky silt loam
20 to 27 inches (51 to 69 cm)—gray frozen silt loam

Drainage class: very poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 12 to 24 inches (30 to 61 cm)
Runoff: high and very high
Depth to seasonally high water table: 0 to 6 inches (0 to 15 cm) or ponded

Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*soils with less than 8 inches (less than 20 cm) of organic matter
*soils on slopes greater than 7 percent

Major Management Factors

Elevation: 400 to 900 feet (122 to 274 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*flooding
*permafrost and thaw subsidence

22—Tanacross peat

Composition

Tanacross peat and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Tanacross Peat and Similar Soils

Landform: alluvial terraces
Position on the landscape: alluvial flats and depressions
Slope range: 0 to 2 percent
Slope features: shape—plain
Organic mat on surface: 8 to 16 inches (20 to 41 cm) thick
Vegetation: stunted black spruce trees, with low shrubs and moss ground cover

Typical profile
0 to 9 inches (0 to 23 cm)—dark brown peat
9 to 12 inches (23 to 30 cm)—black mucky silt loam
12 to 20 inches (30 to 51 cm)—dark gray and dark yellowish brown stratified sand and silt loam
20 to 40 inches (51 to 102 cm)—dark gray and dark yellowish brown frozen stratified sand and silt loam

Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 12 to 28 inches (30 to 71 cm)
Runoff: high
Depth to seasonally high water table: 0 to 10 inches (0 to 25 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is

removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Tanana soils
*Jarvis soils
*soils in depressions that do not have permafrost

Major Management Factors

Elevation: 400 to 900 feet (122 to 274 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*flooding
*permafrost and thaw subsidence

25—Tanana silt loam

Composition

Tanana soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Tanana and Similar Soils

Landform: floodplains and terraces
Position on the landscape: alluvial flats
Slope range: 0 to 3 percent
Slope features: shape—plain
Organic mat on surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: black spruce, paper birch, and willows

Typical profile:
0 to 5 inches (0 to 13 cm)—very dark brown slightly decomposed forest litter
5 to 29 inches (13 to 74 cm)—very dark grayish brown, grayish brown, and dark gray silt loam
29 to 39 inches (74 to 99 cm)—dark grayish brown frozen silt loam

Drainage class: poorly drained
Permeability: moderate in the unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 15 to 30 inches (38 to 76 cm)
Runoff: high
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)

Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Tanacross soils
*Jarvis soils
*Salchaket soils

Major Management Factors

Elevation: 400 to 900 feet (122 to 274 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*flooding
*frost heave
*permafrost

31—Eielson-Piledriver complex, occasionally flooded

Composition

Eielson soils and similar inclusions: 60 percent
Piledriver soils and similar inclusions: 30 percent
Contrasting inclusions: 10 percent

Characteristics of Eielson and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats with high regional groundwater table
Slope range: 0 to 2 percent
Slope features: shape—plain
Organic mat on surface: 1 to 5 inches (3 to 13 cm) thick
Vegetation: white spruce and balsam poplar forest

Typical profile:
0 to 3 inches (0 to 8 cm)—very dark brown slightly decomposed forest litter
3 to 28 inches (8 to 71 cm)—dark grayish brown silt loam or very fine sandy loam
28 to 65 inches (71 to 165 cm)—olive brown and dark gray mottled stratified very fine sandy loam and sand
65 to 69 inches (165 to 175 cm)—very dark gray silt loam

Drainage class: somewhat poorly drained
Permeability: moderate
Available water capacity: high
Depth to contrasting sandy and gravelly material: more than 40 inches (more than 102 cm)
Runoff: negligible
Depth to seasonally high water table: 35 to 60 inches (89 to 152 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: occasional

Characteristics of Piledriver and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats with high regional groundwater table
Slope range: 0 to 2 percent
Slope features: shape—plain
Organic mat on surface: 1 to 5 inches (3 to 13 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 3 inches (0 to 8 cm)—dark brown slightly decomposed forest litter and moss
3 to 15 inches (8 to 38 cm)—light olive brown mottled very fine sandy loam or silt loam
15 to 33 inches (38 to 84 cm)—grayish brown mottled loamy fine sand
33 to 45 inches (84 to 114 cm)—grayish brown extremely gravelly sand

Drainage class: somewhat poorly drained
Permeability: moderate in the upper part; rapid in the underlying material
Available water capacity: low
Depth to contrasting sandy and gravelly material: 10 to 40 inches (25 to 102 cm)
Runoff: negligible
Depth to seasonally high water table: 35 to 60 inches (89 to 152 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: occasional

Included Areas

*depressions and sloughs
*riverwash
*Fubar soils

Major Management Factors

Elevation: 400 to 500 feet (122 to 152 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*flooding
*high water table
*sandy and gravelly subsoil

32—Salchaket very fine sandy loam

Composition

Salchaket soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Salchaket and Similar Soils

Landform: floodplains

Position on the landscape: alluvial flats and natural levees
Slope range: 0 to 1 percent
Slope features: shape—plain or convex
Organic mat on surface: 1 to 7 inches (3 to 18 cm) thick
Vegetation: white spruce, balsam poplar, and paper birch forest

Typical profile:
0 to 2 inches (0 to 5 cm)—dark brown partially decomposed forest litter
2 to 10 inches (5 to 25 cm)—olive brown stratified very fine sandy loam and very fine sand
10 to 55 inches (25 to 140 cm)—dark grayish brown mottled stratified very fine sandy loam, loamy very fine sand, and loamy fine sand
55 to 75 inches (140 to 191 cm)—dark grayish brown sand or stratified sand and gravel

Drainage class: well drained
Permeability: moderate in the loamy soil; rapid in the gravelly substratum
Available water capacity: high
Depth to contrasting sandy and gravelly material: more than 40 inches (more than 102 cm)
Runoff: negligible
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*****Tanana, Jarvis, Eielson, Peede, and Chena soils

Major Management Factors

Elevation: 400 to 500 feet (122 to 152 m)
Climatic factors (average annual):
*****precipitation—10 to 14 inches (25 to 36 cm)
*****air temperature—24° to 28°F (-4° to -2°C)
*****frost free season—80 to 120 days
*****growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*****flooding

35—North Pole very fine sandy loam

Composition

North Pole and similar inclusions: 70 percent
Contrasting inclusions: 30 percent

Characteristics of North Pole and Similar Soils

Landform: alluvial terraces
Position on the landscape: alluvial flats in areas with high regional groundwater table
Slope range: 0 to 2 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 7 inches (5 to 18 cm) thick
Vegetation: tamarack and black spruce forest, with bog birch and Labrador tea understory and moss ground cover

Typical profile:
0 to 7 inches (0 to 18 cm)—dark brown and black slightly to well decomposed forest litter and moss
7 to 32 inches (18 to 81 cm)—variegated stratified very fine sandy loam, silt loam, loamy very fine sand, and loamy fine sand
32 to 51 inches (81 to 130 cm)—grayish brown loamy sand, sand, gravelly or very gravelly sand

Drainage class: poorly drained
Permeability: in early summer—restricted by seasonally frozen soil; when thawed—moderate in the upper part and rapid in the underlying material
Available water capacity: low
Depth to contrasting sandy or gravelly material: 10 to 35 inches (25 to 89 cm)
Runoff: negligible
Depth to seasonally high water table: 20 to 40 inches (51 to 102 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*soils with permafrost

Major Management Factors

Elevation: 400 to 650 feet (122 to 198 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*high water table
*flooding
*late thaw of soil frost

36—Jarvis very fine sandy loam

Composition

Jarvis soils and similar inclusions: 95 percent
Contrasting inclusions: 5 percent

Characteristics of Jarvis and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats and natural levees
Slope range: 0 to 1 percent
Slope features: shape—plain or convex
Organic mat on the surface: 2 to 5 inches (5 to 13 cm) thick
Vegetation: white spruce, balsam poplar, and paper birch forest

Typical profile:
0 to 3 inches (0 to 8 cm)—black to brown peat
3 to 6 inches (8 to 15 cm)—olive brown and olive gray mottled very fine sandy loam
6 to 24 inches (15 to 61 cm)—variegated stratified fine sand and very fine sand
24 to 51 inches (61 to 130 cm)—gray sand, loamy sand, and gravelly and very gravelly sand

Drainage class: well drained
Permeability: moderate in the loamy upper part; rapid to excessive in the underlying sand and gravel
Available water capacity: low
Depth to contrasting sand and gravel: 10 to 40 inches (25 to 102 cm)
Runoff: negligible
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Chena soils
*Salchaket soils
*Piledriver soils

Major Management Factors

Elevation: 400 to 650 feet (122 to 198 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*flooding
*sand and gravelly subsoil

37—Chena very fine sandy loam

Composition

Chena soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Chena and Similar Soils

Landform: stream terraces
Position on the landscape: alluvial flats
Slope range: 0 to 2 percent
Slope features: shape—plain
Organic mat on the surface: 0 to 6 inches (0 to 15 cm) thick
Vegetation: white spruce and balsam poplar forest

Typical profile:
0 to 3 inches (0 to 8 cm)—very dark gray slightly decomposed forest litter

3 to 6 inches (8 to 15 cm)—olive brown and olive gray mottled very fine sandy loam
6 to 10 inches (15 to 25 cm)—dark grayish brown stratified very fine sandy loam and fine sand
10 to 41 inches (25 to 104 cm)—grayish brown sand, loamy sand, and gravelly to extremely gravelly sand

Drainage class: excessively drained
Permeability: moderate in the loamy surface soil; rapid in the sand and gravel
Available water capacity: low
Depth to contrasting sand and gravel: 0 to 9 inches (0 to 23 cm)
Runoff: negligible
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Jarvis soils
*soils with a water table within 72 inches (183 cm) from the surface

Major Management Factors

Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*droughtiness and high permeability
*flooding

40A—Chatanika silt loam, 0 to 3 percent slopes

Composition

Chatanika soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Chatanika and Similar Soils

Landform: terraces and lower slopes of hills
Position on the landscape: terrace flats and toeslopes of hills
Slope range: 0 to 3 percent
Slope features: shape—plain or concave
Organic mat on the surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: black spruce and paper birch forest

Typical profile:
0 to 4 inches (0 to 10 cm)—very dark grayish brown slightly decomposed forest litter
4 to 6 inches (10 to 15 cm)—very dark grayish brown mucky silt loam

6 to 9 inches (15 to 23 cm)—grayish brown silt loam and very dark grayish brown mucky silt loam

9 to 21 inches (23 to 53 cm)—grayish brown mottled silt loam
21 to 24 inches (53 to 61 cm)—grayish brown mottled frozen silt loam

Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the mineral soil above the permafrost; impermeable in the permafrost.
Available water capacity: high
Depth to frozen soil (July-August): 12 to 40 inches (30 to 102 cm)
Runoff: low
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*****Goldstream soils
*****Minto soils

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*****precipitation—10 to 14 inches (25 to 36 cm)
*****air temperature—24° to 28°F (-4° to -2°C)
*****frost free season—80 to 120 days
*****growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*****wetness
*****permafrost
*****pitting and thaw subsidence

40B—Chatanika silt loam, 3 to 7 percent slopes

Composition

Chatanika soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Chatanika and Similar Soils

Landform: lower slopes of hills and terraces
Position on the landscape: terrace flats and toeslopes of hills
Slope range: 3 to 7 percent
Slope features: shape—plain or concave
Organic mat on the surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: black spruce and paper birch forest

Typical profile:
0 to 4 inches (0 to 10 cm)—very dark grayish brown slightly decomposed forest litter
4 to 6 inches (10 to 15 cm)—very dark grayish brown mucky silt loam

6 to 9 inches (15 to 23 cm)—grayish brown silt loam and very dark grayish brown mucky silt loam

9 to 21 inches (23 to 53 cm)—grayish brown mottled silt loam
21 to 24 inches (53 to 61 cm)—grayish brown mottled frozen silt loam

Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the mineral soil above the permafrost; impermeable in the permafrost.
Available water capacity: high
Depth to frozen soil (July-August): 12 to 40 inches (30 to 102 cm)
Runoff: medium
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)
Hazard of erosion: by water—none if organic mat is not removed, moderate if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Goldstream soils
*Minto soils

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*permafrost
*pitting and thaw subsidence

40D—Chatanika silt loam, 12 to 20 percent slopes

Composition

Chatanika soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Chatanika and Similar Soils

Landform: hills
Position on the landscape: backslopes and footslopes
Slope range: 12 to 20 percent
Slope features: shape—convex, plain, or concave
Organic mat on the surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: black spruce and paper birch forest

Typical profile:
0 to 4 inches (0 to 10 cm)—very dark grayish brown slightly decomposed forest litter
4 to 6 inches (10 to 15 cm)—very dark grayish brown mucky silt loam

6 to 9 inches (15 to 23 cm)—grayish brown silt loam and very dark grayish brown mucky silt loam

9 to 21 inches (23 to 53 cm)—grayish brown mottled silt loam
21 to 24 inches (53 to 61 cm)—grayish brown mottled frozen silt loam

Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the mineral soil above the permafrost; impermeable in the permafrost
Available water capacity: high
Depth to frozen soil (July-August): 12 to 40 inches (30 to 102 cm)
Runoff: very high
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Minto soils
*soils with gentler slopes

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*permafrost
*pitting and thaw subsidence

41A—Minto silt loam, 0 to 3 percent slopes

Composition

Minto soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Minto and Similar Soils

Landform: hills
Position on the landscape: footslopes
Slope range: 0 to 3 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 5 inches (0 to 13 cm)—dark brown slightly decomposed forest litter
5 to 9 inches (13 to 23 cm)—very dark grayish brown silt loam
9 to 16 inches (23 to 41 cm)—light olive brown mottled silt loam
16 to 70 inches (41 to 178 cm)—grayish brown mottled silt loam

Drainage class: moderately well drained
Permeability: moderate
Available water capacity: very high
Depth to frozen soil (July-August): more than 71 inches (more than 180 cm)
Runoff: low
Depth to seasonally high water table: 3 to 5 feet (1 to 1.5 m)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Chatanika soils
*wetter soils in depressions

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*permafrost
*pitting and thaw subsidence

41B—Minto silt loam, 3 to 7 percent slopes

Composition

Minto soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Minto and Similar Soils

Landform: hills
Position on the landscape: footslopes
Slope range: 3 to 7 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 5 inches (0 to 13 cm)—dark brown slightly decomposed forest litter
5 to 9 inches (13 to 23 cm)—very dark grayish brown silt loam
9 to 16 inches (23 to 41 cm)—light olive brown mottled silt loam
16 to 70 inches (41 to 178 cm)—grayish brown mottled silt loam

Drainage class: moderately well drained
Permeability: moderate
Available water capacity: very high
Depth to frozen soil (July-August): more than 71 inches (more than 180 cm)

Runoff: medium
Depth to seasonally high water table: 3 to 5 feet (1 to 1.5 m)
Hazard of erosion: by water—none if organic mat is not removed, moderate if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Chatanika soils
*wetter soils in depressions

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*permafrost
*pitting and thaw subsidence

41C—Minto silt loam, 7 to 12 percent slopes

Composition

Minto soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Minto and similar soils

Landform: hills
Position on the landscape: shoulders, backslopes, and footslopes
Slope range: 7 to 12 percent
Slope features: shape—plain, convex, or concave
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 5 inches (0 to 13 cm)—dark brown slightly decomposed forest litter
5 to 9 inches (13 to 23 cm)—very dark grayish brown silt loam
9 to 16 inches (23 to 41 cm)—light olive brown mottled silt loam
16 to 70 inches (41 to 178 cm)—grayish brown mottled silt loam

Drainage class: moderately well drained
Permeability: moderate
Available water capacity: very high
Depth to frozen soil (July-August): more than 71 inches (more than 180 cm)
Runoff: medium
Depth to seasonally high water table: 3 to 5 feet (1 to 1.5 m)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed

Hazard of flooding: none

Included Areas

*Fairbanks soils
*Chatanika soils

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*permafrost
*pitting and thaw subsidence

41D—Minto silt loam, 12 to 20 percent slopes

Composition

Minto soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Minto and Similar Soils

Landform: hills
Position on the landscape: shoulders, backslopes, and footslopes
Slope range: 12 to 20 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 5 inches (0 to 13 cm)—dark brown slightly decomposed forest litter
5 to 9 inches (13 to 23 cm)—very dark grayish brown silt loam
9 to 16 inches (23 to 41 cm)—light olive brown mottled silt loam
16 to 70 inches (41 to 178 cm)—grayish brown mottled silt loam

Drainage class: moderately well drained
Permeability: moderate
Available water capacity: very high
Depth to frozen soil (July-August): more than 71 inches (more than 180 cm)
Runoff: medium
Depth to seasonally high water table: 3 to 5 feet (1 to 1.5 m)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Fairbanks soils

*Chatanika soils

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*permafrost
*pitting and thaw subsidence

42B—Fairbanks silt loam, 3 to 7 percent slopes

Composition

Fairbanks soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Fairbanks and Similar Soils

Landform: loess mantled hills
Position on the landscape: backslopes and shoulders
Slope range: 3 to 7 percent
Slope features: shape—plain or convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—slightly decomposed forest litter
3 to 9 inches (8 to 23 cm)—very dark grayish brown silt loam
9 to 71 inches (23 to 180 cm)—light olive brown or grayish brown mottled silt loam

Drainage class: well drained
Permeability: moderate
Available water capacity: very high
Depth to weathered bedrock: more than 40 inches (more than 102 cm)
Runoff: low
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, moderate if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Fairbanks soils with slopes of less than 3 percent or more than 7 percent

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):

*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*low permeability

42C—Fairbanks silt loam, 7 to 12 percent slopes

Composition

Fairbanks soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Fairbanks and Similar Soils

Landform: loess mantled hills
Position on the landscape: backslopes
Slope range: 7 to 12 percent
Slope features: shape—plain or convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—slightly decomposed forest litter
3 to 9 inches (8 to 23 cm)—very dark grayish brown silt loam
9 to 71 inches (23 to 180 cm)—light olive brown or grayish brown mottled silt loam

Drainage class: well drained
Permeability: moderate
Available water capacity: very high
Depth to weathered bedrock: more than 40 inches (more than 102 cm)
Runoff: medium
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Steese and Gilmore soils
*Fairbanks soils with slopes of less than 7 percent or more than 12 percent

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*low permeability

42CG—Fairbanks silt loam, strongly sloping and steep

Composition

Fairbanks strongly sloping and similar inclusions: 65 percent
Fairbanks steep and similar inclusions: 25 percent
Contrasting inclusions: 10 percent

Characteristics of Fairbanks Strongly Sloping and Similar Soils

Landform: loess mantled hills
Position on the landscape: interfluves and bottoms of stabilized gullies
Slope range: 7 to 15 percent
Slope features: shape—plain, convex, or concave
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—slightly decomposed forest litter
3 to 9 inches (8 to 23 cm)—very dark grayish brown silt loam
9 to 71 inches (23 to 180 cm)—light olive brown or grayish brown mottled silt loam

Drainage class: well drained
Permeability: moderate
Available water capacity: very high
Depth to weathered bedrock: more than 40 inches (more than 102 cm)
Runoff: medium
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Fairbanks Steep and Similar Soils

Landform: loess mantled hills
Position on the landscape: short, steep slopes on sides of stabilized gullies
Slope range: 20 to more than 45 percent
Slope features: shape—plain or convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—slightly decomposed forest litter
3 to 9 inches (8 to 23 cm)—very dark grayish brown silt loam
9 to 71 inches (23 to 180 cm)—light olive brown or grayish brown mottled silt loam

Drainage class: well drained
Permeability: moderate
Available water capacity: very high
Depth to weathered bedrock: more than 40 inches (more than 102 cm)
Runoff: high
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed

Hazard of flooding: none

Included Areas

*Steese soils
*soils with a seasonally higher water table

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*steep slopes

42D—Fairbanks silt loam, 12 to 20 percent slopes

Composition

Fairbanks soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Fairbanks and Similar Soils

Landform: loess mantled hills
Position on the landscape: backslopes and shoulders
Slope range: 12 to 20 percent
Slope features: shape—plain or convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—slightly decomposed forest litter
3 to 9 inches (8 to 23 cm)—very dark grayish brown silt loam
9 to 71 inches (23 to 180 cm)—light olive brown or grayish brown mottled silt loam

Drainage class: well drained
Permeability: moderate
Available water capacity: very high
Depth to weathered bedrock: more than 40 inches (more than 102 cm)
Runoff: low
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Steese soils
*Fairbanks soils with slopes of less than 12 percent or more than 20 percent

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*steep slopes

42G—Fairbanks silt loam, more than 45 percent slopes

Composition

Fairbanks soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Fairbanks and Similar Soils

Landform: escarpments in loess mantled hills
Position on the landscape: backslopes
Slope range: more than 45 percent
Slope features: shape—plain or convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—slightly decomposed forest litter
3 to 9 inches (8 to 23 cm)—very dark grayish brown silt loam
9 to 71 inches (23 to 180 cm)—light olive brown or grayish brown mottled silt loam

Drainage class: well drained
Permeability: moderate
Available water capacity: very high
Depth to weathered bedrock: more than 40 inches (more than 102 cm)
Runoff: high
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*ravines with Fairbanks soils that have slopes of 12 to 45 percent

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base

temperature)
Soil related factors:
*steep slopes

44D—Steese silt loam, 12 to 20 percent slopes

Composition

Steese soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Steese and Similar Soils

Landform: loess mantled hills
Position on the landscape: shoulders and backslopes
Slope range: 12 to 20 percent
Slope features: shape—plain or convex
Organic mat on surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: paper birch, white spruce, and quaking aspen forest

Typical profile:
0 to 2 inches (0 to 5 cm)—dark brown slightly decomposed forest litter
2 to 5 inches (5 to 13 cm)—brown silt loam
5 to 27 inches (13 to 69 cm)—light olive gray mottled silt loam
27 to 33 inches (69 to 84 cm)—light olive brown channery silt loam
33 to 35 inches (84 to 89 cm)—highly weathered schist bedrock

Drainage class: well drained
Permeability: moderate
Available water capacity: moderate to high
Depth to weathered bedrock: 20 to 40 inches (51 to 102 cm)
Runoff: medium
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Gilmore and Fairbanks soils
*soils with steeper or more gentle slopes

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days

*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*erosion hazard
*bedrock substratum

*steep slopes

45D—Gilmore silt loam, 12 to 20 percent slopes

Composition

Gilmore soils and similar inclusions: 85 percent
Contrasting inclusions: 15 percent

Characteristics of Gilmore and Similar Soils

Landform: loess mantled hills
Position on the landscape: shoulders and backslopes
Slope range: 12 to 20 percent
Slope features: shape—convex or plain
Organic mat on surface: 2 to 4 inches (5 to 10 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—partially decomposed forest litter and moss
3 to 13 inches (8 to 33 cm)—dark brown or dark yellowish brown silt loam
13 to 16 inches (33 to 41 cm)—olive brown channery silt loam
16 inches (41 cm)—weathered fractured schist bedrock

Drainage class: well drained
Permeability: moderate
Available water capacity: moderate to high
Depth to bedrock: less than 20 inches (less than 51 cm)
Runoff: very high
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Steese soils
*soils with steeper or more gentle slopes

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*erosion hazard
*bedrock substratum
*steep slopes

45E—Gilmore silt loam, 20 to 30 percent slopes

Composition

Gilmore soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Gilmore and Similar Soils

Landform: loess mantled hills
Position on the landscape: shoulders and backslopes
Slope range: 20 to 30 percent
Slope features: shape—convex or plain
Organic mat on surface: 2 to 4 inches (5 to 10 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—partially decomposed forest litter and moss
3 to 13 inches (8 to 33 cm)—dark brown or dark yellowish brown silt loam
13 to 16 inches (33 to 41 cm)—olive brown channery silt loam
16 inches (41 cm)—weathered fractured schist bedrock

Drainage class: well drained
Permeability: moderate
Available water capacity: moderate to high
Depth to bedrock: less than 20 inches (less than 51 cm)
Runoff: very high
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Steese soils
*soils with steeper or more gentle slopes

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*erosion hazard
*bedrock substratum
*steep slopes

51B—Saulich peat, 3 to 7 percent slopes

Composition

Saulich soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Saulich and Similar Soils

Landform: hills
Position on the landscape: middle and lower portions of north-facing slopes
Slope range: 3 to 7 percent
Slope features: shape—plain or concave
Organic mat on surface: 8 to 16 inches (20 to 41 cm) thick
Vegetation: sparse forest of black spruce with an understory of low shrubs

Typical profile:
0 to 9 inches (0 to 23 cm)—very dark brown peat
9 to 16 inches (23 to 41 cm)—black and dark brown mucky peat
16 to 21 inches (41 to 53 cm)—very dark grayish brown and black mottled silt loam
21 to 39 inches (53 to 99 cm)—dark grayish brown frozen silt loam with clear ice lenses

Drainage class: poorly drained
Permeability: rapid in the fibric organic matter; moderate in the thawed mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to the frozen soil (July-August): 11 to 18 inches (28 to 46 cm)
Runoff: very high
Depth to seasonally high water table: 6 to 18 inches (15 to 46 cm)
Hazard of erosion: by water—none if organic mat is not removed, moderate if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Chatanika soils

Major Management Factors

Elevation: 450 to 1200 feet (137 to 366 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*permafrost
*wetness
*subsidence due to thaw of ground ice

51C—Saulich peat, 7 to 12 percent slopes

Composition

Saulich soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Saulich and similar soils

Landform: hills
Position on the landscape: middle and lower portions of north-facing slopes
Slope range: 7 to 12 percent
Slope features: shape—plain or concave
Organic mat on surface: 8 to 16 inches (20 to 41 cm) thick
Vegetation: sparse forest of black spruce with an understory of low shrubs

Typical profile:
0 to 9 inches (0 to 23 cm)—very dark brown peat
9 to 16 inches (23 to 41 cm)—black and dark brown mucky peat
16 to 21 inches (41 to 53 cm)—very dark grayish brown and black mottled silt loam
21 to 39 inches (53 to 99 cm)—dark grayish brown frozen silt loam with clear ice lenses

Drainage class: poorly drained
Permeability: rapid in the fibric organic matter; moderate in the thawed mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to the frozen soil (July-August): 11 to 18 inches (28 to 46 cm)
Runoff: very high
Depth to seasonally high water table: 6 to 18 inches (15 to 46 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Chatanika soils
*Saulich soils on steeper or more gentle slopes

Major Management Factors

Elevation: 450 to 1200 feet (137 to 366 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*permafrost
*wetness
*subsidence due to thaw of ground ice

61—Piledriver very fine sandy loam

Composition

Piledriver soils and similar inclusions: 90 percent
Contrasting inclusions: 10 percent

Characteristics of Piledriver and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats with high regional groundwater table
Slope range: 0 to 1 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: white spruce, paper birch, and balsam poplar forest

Typical profile:
0 to 3 inches (0 to 8 cm)—dark brown slightly decomposed forest litter and moss
3 to 15 inches (8 to 38 cm)—light olive brown mottled very fine sandy loam or silt loam
15 to 33 inches (38 to 84 cm)—grayish brown mottled loamy fine sand
33 to 45 inches (84 to 114 cm)—grayish brown extremely gravelly sand

Drainage class: somewhat poorly drained
Permeability: moderate in the upper part; rapid in the underlying material
Depth to contrasting sand and gravel: 12 to 40 inches (30 to 104 cm)
Available water capacity: low
Runoff: negligible
Depth to seasonally high water table: 35 to 60 inches (89 to 152 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Eielson soils
*Chena soils

Major Management Factors

Elevation: 400 to 600 feet (122 to 183 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*high water table
*sand and gravel substratum

62—Peede-Mosquito complex

Composition

Peede soils and similar inclusions: 60 to 80 percent

Mosquito soils and similar inclusions: 20 to 30 percent
Contrasting inclusions: 10 percent

Characteristics of Peede and Similar Soils

Landform: floodplains
Position on the landscape: channels and depressions
Slope range: 0 to 1 percent
Slope features: shape—concave
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: grass and sedge vegetation with some willow shrubs

Typical profile:
0 to 5 inches (0 to 13 cm)—very dark brown moderately decomposed sedge peat
5 to 40 inches (13 to 102 cm)—dark gray mottled silt loam
40 to 55 inches (102 to 140 cm)—dark greenish gray mottled very fine sandy loam
55 to 70 inches (140 to 178 cm)—dark olive gray fine sand

Drainage class: very poorly drained
Permeability: moderate
Depth to contrasting sand and gravel: 40 to more than 60 inches (102 to more than 152 cm)
Available water capacity: high
Runoff: negligible
Depth to seasonally high water table: 0 to 12 inches (0 to 30 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: occasional

Characteristics of Mosquito and Similar Soils

Landform: floodplains
Position on the landscape: depressions
Slope range: 0 to 1 percent
Slope features: shape—plain or concave
Organic mat on the surface: 9 to 22 inches (23 to 56 cm) thick
Vegetation: tamarack and black spruce, with shrub birch and cottonsedge in the understory

Typical profile:
0 to 10 inches (0 to 25 cm)—black peat and mucky peat
10 to 19 inches (25 to 48 cm)—dark gray and dark grayish brown mottled silt loam
19 to 29 inches (48 to 74 cm)—dark grayish brown frozen silt loam

Drainage class: very poorly drained
Permeability: moderate in the unfrozen soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 13 to 28 inches (33 to 71 cm)
Runoff: high
Depth to seasonally high water table: 0 to 12 inches (0 to 30 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: occasional

Included Areas

*****wet soils lacking permafrost with more than 6 inches (more than 15 cm) of surface organic mat

Major Management Factors

Elevation: 400 to 500 feet (122 to 152 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*flooding
*wetness
*ponding

64—Eielson-Tanana complex

Composition

Eielson soils and similar inclusions: 30 to 60 percent
Tanana soils and similar inclusions: 20 to 50 percent
Contrasting inclusions: 15 percent

Characteristics of Eielson and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats with high regional groundwater table
Slope range: 0 to 1 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: white spruce, paper birch, and balsam poplar forest

Typical profile:
0 to 3 inches (0 to 8 cm)—very dark brown slightly decomposed forest litter
3 to 28 inches (8 to 71 cm)—dark grayish brown silt loam or very fine sandy loam
28 to 65 inches (71 to 165 cm)—olive brown and dark gray mottled stratified very fine sandy loam and sand
65 to 69 inches (165 to 175 cm)—very dark gray silt loam

Drainage class: somewhat poorly drained
Permeability: moderate
Depth to contrasting sand and gravel: 40 to more than 60 inches (102 to more than 152 cm)
Available water capacity: high
Runoff: negligible
Depth to seasonally high water table: 35 to 60 inches (89 to 152 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: occasional

Characteristics of Tanana and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats
Slope range: 0 to 3 percent
Slope features: shape—plain

Organic mat on the surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: black spruce, paper birch, and willows

Typical profile:
0 to 5 inches (0 to 13 cm)—very dark brown slightly decomposed forest litter
5 to 29 inches (13 to 74 cm)—very dark grayish brown, grayish brown, and dark gray silt loam
29 to 39 inches (74 to 99 cm)—dark grayish brown frozen silt loam

Drainage class: poorly drained
Permeability: moderate above the frozen soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 15 to 30 inches (38 to 76 cm)
Runoff: high
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: occasional to rare

Included Areas

*Peede soils in depressions
*Tanacross soils

Major Management Factors

Elevation: 400 to 600 feet (122 to 183 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*flooding
*permafrost in the Tanana soils
*wetness

211—Chatanika-Goldstream complex, 0 to 3 percent slopes

Composition

Goldstream soils and similar inclusions: 60 percent
Chatanika soils and similar inclusions: 20 percent
Contrasting inclusions: 20 percent

Characteristics of Chatanika and Similar Soils

Landform: terraces and lower slopes of hills
Position on the landscape: terrace flats and toeslopes of hills
Slope range: 0 to 3 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: paper birch and black spruce forest

Typical profile:
0 to 4 inches (0 to 10 cm)—very dark grayish brown slightly decomposed forest litter
4 to 6 inches (10 to 15 cm)—very dark grayish brown mucky silt loam
6 to 9 inches (15 to 23 cm)—grayish brown silt loam and very dark grayish brown mucky silt loam
9 to 21 inches (23 to 53 cm)—grayish brown mottled silt loam
21 to 24 inches (53 to 61 cm)—grayish brown mottled frozen silt loam

Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 16 to 40 inches (41 to 102 cm)
Runoff: low
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Goldstream and Similar Soils

Landform: terraces and lower slopes of hills
Position on the landscape: terrace flats and toeslopes of hills
Slope range: 0 to 3 percent
Slope features: shape—plain or concave
Organic mat on surface: 8 to16 inches (20 to 41 cm) thick
Vegetation: stunted black spruce with low shrubs, sedge tussocks, and moss

Typical profile:
0 to 3 inches (0 to 8 cm)—dark brown peat
3 to 9 inches (8 to 23 cm)—black mucky peat
9 to 20 inches (23 to 51 cm)—very dark grayish brown and gray mucky silt loam
20 to 27 inches (51 to 69 cm)—gray frozen silt loam

Drainage class: very poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 14 to 24 inches (36 to 61 cm)
Runoff: high
Depth to seasonally high water table: 0 to 6 inches (0 to 15 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*****Minto soils
*****Lemeta soils
*****soils in depressions that do not contain permafrost

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*****precipitation—10 to 14 inches (25 to 36 cm)

*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*frost heave
*perched water table
*permafrost
*ponding
*pitting and thaw subsidence

212—Goldstream-Bolio complex, 0 to 3 percent slopes

Composition

Goldstream soils and similar inclusions: 50 percent
Bolio soils and similar inclusions: 45 percent
Contrasting inclusions: 5 percent

Characteristics of Goldstream and Similar Soils

Landform: hillslopes and terraces
Position on the landscape: toeslopes and terrace flats
Slope range: 0 to 3 percent
Slope features: shape—plain or concave
Organic mat on surface: 8 to16 inches (20 to 41 cm) thick
Vegetation: stunted black spruce with low shrubs, sedge tussocks, and moss

Typical profile:
0 to 3 inches (0 to 8 cm)—dark brown peat
3 to 9 inches (8 to 23 cm)—black mucky peat
9 to 20 inches (23 to 51 cm)—very dark grayish brown and gray mucky silt loam
20 to 27 inches (51 to 69 cm)—gray frozen silt loam

Drainage class: very poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 14 to 24 inches (36 to 61 cm)
Runoff: high
Depth to seasonally high water table: 0 to 6 inches (0 to 15 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Bolio Peat and Similar Soils

Landform: terraces
Position on the landscape: alluvial flats and depressions
Slope range: 0 to 2 percent
Slope features: shape—plain or concave
Organic mat on surface: more than 16 inches (more than 41 cm) thick
Vegetation: sedge tussocks, low shrubs, stunted tamarack and black spruce, and mosses

Typical profile:
0 to 6 inches (0 to 15 cm)—strong brown peat
6 to 23 inches (15 to 58 cm)—black and very dark gray mucky peat
23 to 26 inches (58 to 66 cm)—very dark grayish brown frozen mucky peat

Drainage class: very poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate to low in the more highly decomposed organic matter; impermeable in the permafrost.
Available water capacity: high
Depth to frozen soil (July-August): 16 to 28 inches (41 to 71 cm)
Runoff: negligible
Depth to seasonally high water table: 0 to 6 inches (0 to 15 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Tanana and Chatanika soils with less than 8 inches (less than 20 cm) of organic matter
*soils in depressions that do not have permafrost

Major Management Factors

Elevation: 400 to 900 feet (122 to 274 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28ºF (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*perched water table
*permafrost
*ponding
*subsidence due to thaw of ground ice
*wetness

251—Tanana-Mosquito complex

Composition

Tanana soils and similar inclusions: 70 percent
Mosquito soils and similar inclusions: 25 percent
Contrasting inclusions: 5 percent

Characteristics of Tanana and Similar Soils

Landform: floodplains and terraces
Position on the landscape: alluvial flats
Slope range: 0 to 3 percent
Slope features: shape—plain
Organic mat on surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: black spruce, with low shrubs and moss groundcover

Typical profile:
0 to 5 inches (0 to 13 cm)—very dark brown slightly decomposed forest litter
5 to 29 inches (13 to 74 cm)—very dark grayish brown, grayish brown, and dark gray silt loam
29 to 39 inches (74 to 99 cm)—dark grayish brown frozen silt loam

Drainage class: poorly drained
Permeability: moderate in the unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 15 to 30 inches (38 to 76 cm)
Runoff: high
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Characteristics of Mosquito Peat and Similar Soils

Landform: floodplains and terraces
Position on the landscape: channels and depressions
Slope range: 0 to 2 percent
Slope features: shape—plain or concave
Organic mat on the surface: 4 to 16 inches (10 to 41 cm) thick
Vegetation: tamarack and black spruce, with shrub birch and cottonsedge in the understory

Typical profile:
0 to 10 inches (0 to 25 cm)—black peat and mucky peat
10 to 19 inches (25 to 48 cm)—dark gray and dark grayish brown mottled silt loam
19 to 29 inches (48 to 74 cm)—dark grayish brown frozen silt loam

Drainage class: very poorly drained
Permeability: moderate in the organic mat and unfrozen mineral soil; impermeable in the frozen soil
Available water capacity: high
Depth to frozen soil (July-August): 13 to 43 inches (33 to 109 cm)
Runoff: high
Depth to seasonally high water table: 0 to 12 inches (0 to 30 cm) or ponded
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*****soils without permafrost

Major Management Factors

Elevation: 400 to 500 feet (122 to 152 m)
Climatic factors (average annual):
*****precipitation—10 to 14 inches (25 to 36 cm)
*****air temperature—24° to 28°F (-4° to -2°C)
*****frost free season—80 to 120 days
*****growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*****wetness

*flooding
*permafrost

361—Jarvis-Chena complex

Composition

Jarvis soils and similar inclusions: 65 percent
Chena soils and similar inclusions: 30 percent
Contrasting inclusions: 5 percent

Characteristics of Jarvis and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats and natural levees
Slope range: 0 to 1 percent
Slope features: shape—plain or convex
Organic mat on the surface: 2 to 5 inches (5 to 13 cm) thick
Vegetation: white spruce, balsam poplar, and paper birch forest

Typical profile:
0 to 3 inches (0 to 8 cm)—black to brown peat
3 to 6 inches (8 to 15 cm)—olive brown and olive gray mottled very fine sandy loam
6 to 24 inches (15 to 61 cm)—variegated stratified fine sand and very fine sand
24 to 51 inches (61 to 130 cm)—gray sand, loamy sand, and gravelly and very gravelly sand

Drainage class: well drained
Permeability: moderate in the upper part; rapid to excessive in the underlying material
Available water capacity: low
Depth to contrasting sand and gravel: 10 to 40 inches (25 to 102 cm)
Runoff: negligible
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Characteristics of Chena and Similar Soils

Landform: stream terraces
Position on the landscape: alluvial flats
Slope range: 0 to 2 percent
Slope features: shape—plain
Organic mat on the surface: 0 to 6 inches (0 to 15 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 3 inches (0 to 8 cm)—very dark gray slightly decomposed forest litter
3 to 6 inches (8 to 15 cm)—olive brown and olive gray very fine sandy loam
6 to 10 inches (15 to 25 cm)—dark grayish brown stratified very fine sandy loam and fine sand
10 to 41 inches (25 to 104 cm)—grayish brown sand, loamy sand, and gravelly to extremely gravelly sand

Drainage class: excessive

Permeability: moderate in the loamy surface soil; rapid in the sand and gravel
Available water capacity: low
Depth to contrasting sand and gravel: 0 to 9 inches (0 to 23 cm)
Runoff: negligible
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Salchaket soils
*Piledriver soils
*Fubar soils

Major Management Factors

Elevation: 400 to 500 feet (122 to 152 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*droughtiness and high permeability
*flooding

362—Piledriver-Fubar complex

Composition

Piledriver soils and similar inclusions: 40 percent
Fubar soils and similar inclusions: 40 percent
Contrasting inclusions: 20 percent

Characteristics of Piledriver and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats with high regional groundwater table
Slope range: 0 to 1 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 7 inches (5 to 18 cm) thick
Vegetation: white spruce, balsam poplar, and paper birch forest

Typical profile:
0 to 3 inches (0 to 8 cm)—dark brown slightly decomposed forest litter and moss
3 to 15 inches (8 to 38 cm)—light olive brown mottled very fine sandy loam or silt loam
15 to 33 inches (38 to 84 cm)—grayish brown mottled loamy fine sand
33 to 45 inches (84 to 114 cm)—grayish brown extremely gravelly sand

Drainage class: somewhat poorly drained
Permeability: moderate in the upper part; rapid in the underlying sand and gravel
Available water capacity: low
Depth to contrasting sand and gravel: 10 to 40 inches (25 to 102 cm)

Runoff: negligible
Depth to seasonally high water table: 35 to 60 inches (89 to 152 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Characteristics of Fubar and Similar Soils

Landform: floodplains and stream terraces
Position on the landscape: alluvial flats
Slope range: 0 to 2 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: white spruce, balsam poplar, and paper birch forest

Typical profile:
0 to 4 inches (0 to 10 cm)—dark brown and black slightly and partially decomposed forest litter
4 to 10 inches (10 to 25 cm)—grayish brown silt loam
10 to 55 inches (25 to 140 cm)—dark grayish brown stratified sand and fine sand
55 to 71 inches (140 to 180 cm)—very dark gray very gravelly loamy fine sand

Drainage class: moderately well drained
Permeability: moderate in the loamy surface soil; rapid in the sand and gravel
Available water capacity: very low
Depth to contrasting sand and gravel: 1 to 10 inches (3 to 25 cm)
Runoff: negligible
Depth to seasonally high water table: 36 to 72 inches (91 to 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*****Jarvis and Chena soils

Major Management Factors

Elevation: 400 to 650 feet (122 to 198 m)
Climatic factors (average annual):
*****precipitation—10 to 14 inches (25 to 36 cm)
*****air temperature—24° to 28°F (-4° to -2°C)
*****frost free season—80 to 120 days
*****growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*****droughtiness and high permeability
*****flooding
*****high water table

363—Jarvis-Salchaket complex

Composition

Jarvis soils and similar inclusions: 45 percent

Salchaket soils and similar inclusions: 35 percent
Contrasting inclusions: 20 percent

Characteristics of Jarvis and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats
Slope range: 0 to 1 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 7 inches (5 to 18 cm) thick
Vegetation: white spruce, balsam poplar, and paper birch forest

Typical profile:
0 to 3 inches (0 to 8 cm)—black to brown peat
3 to 6 inches (8 to 15 cm)—olive brown and olive gray mottled very fine sandy loam
6 to 24 inches (15 to 61 cm)—variegated stratified fine sand and very fine sand
24 to 51 inches (61 to 130 cm)—gray sand, loamy sand, and gravelly and very gravelly sand

Drainage class: well drained
Permeability: moderate in the upper part; rapid to excessive in the underlying material
Available water capacity: low
Depth to contrasting sand and gravel: 10 to 40 inches (25 to 102 cm)
Runoff: negligible
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Characteristics of Salchaket and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats
Slope range: 0 to 1 percent
Slope features: shape—plain or convex
Organic mat on the surface: 2 to 7 inches (5 to 18 cm) thick
Vegetation: white spruce, balsam poplar, and paper birch forest

Typical profile:
0 to 2 inches (0 to 5 cm)—dark brown partially decomposed forest litter
2 to 10 inches (5 to 25 cm)—olive brown stratified very fine sandy loam and very fine sand
10 to 55 inches (25 to 140 cm)—dark grayish brown mottled stratified very fine sandy loam, loamy very fine sand, and loamy fine sand
55 to 75 inches (140 to 191 cm)—dark grayish brown sand or stratified sand and gravel

Drainage class: well drained
Permeability: moderate in the control section; rapid in the substratum
Available water capacity: high
Depth to contrasting sand and gravel: more than 40 inches (more than 102 cm)
Runoff: negligible
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Piledriver soils
*Eielson soils
*Tanana soils
*Chena soils

Major Management Factors

Elevation: 400 to 650 feet (122 to 198 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*droughtiness and high permeability in the Jarvis soils
*flooding

411B—Minto-Chatanika complex, 3 to 7 percent slopes

Composition

Minto soils and similar inclusions: 60 percent
Chatanika soils and similar inclusions: 30 percent
Contrasting inclusions: 10 percent

Characteristics of Minto and Similar Soils

Landform: hills
Position on the landscape: footslopes and toeslopes
Slope range: 3 to 7 percent
Slope features: shape—plain or convex
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 5 inches (0 to 13 cm)—dark brown slightly decomposed forest litter
5 to 9 inches (13 to 23 cm)—very dark grayish brown silt loam
9 to 16 inches (23 to 41 cm)—light olive brown mottled silt loam
16 to 70 inches (41 to 178 cm)—grayish brown mottled silt loam

Drainage class: moderately well drained
Permeability: moderate
Available water capacity: very high
Depth to frozen soil (July-August): more than 71 inches (more than 180 cm)
Runoff: medium
Depth to seasonally high water table: 3 to 5 feet (1 to 1.5 m)
Hazard of erosion: by water—none if organic mat is not removed, moderate if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Chatanika and Similar Soils

Landform: hills
Position on the landscape: toeslopes of hills
Slope range: 3 to 7 percent
Slope features: shape—plain or concave
Organic mat on the surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: black spruce paper birch forest

Typical profile:
0 to 4 inches (0 to 10 cm)—very dark grayish brown slightly decomposed forest litter
4 to 6 inches (10 to 15 cm)—very dark grayish brown mucky silt loam
6 to 9 inches (15 to 23 cm)—grayish brown silt loam and very dark grayish brown mucky silt loam
9 to 21 inches (23 to 53 cm)—grayish brown mottled silt loam
21 to 24 inches (53 to 61 cm)—grayish brown mottled frozen silt loam

Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the mineral soil above the permafrost; impermeable in the permafrost.
Available water capacity: high
Depth to frozen soil (July-August): 12 to 40 inches (30 to 102 cm)
Runoff: medium
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)
Hazard of erosion: by water—none if organic mat is not removed, moderate if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*wet soils without permafrost in channels and depressions

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*permafrost
*pitting and thaw subsidence

411C—Minto-Chatanika complex, 7 to 12 percent slopes

Composition

Minto soils and similar inclusions: 60 percent
Chatanika soils and similar inclusions: 30 percent
Contrasting inclusions: 10 percent

Characteristics of Minto and Similar Soils

Landform: hills
Position on the landscape: footslopes
Slope range: 7 to 12 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 5 inches (0 to 13 cm)—dark brown slightly decomposed leaves and moss
5 to 9 inches (13 to 23 cm)—very dark grayish brown silt loam
9 to 16 inches (23 to 41 cm)—light olive brown silt loam
16 to 70 inches (41 to 178 cm)—grayish brown mottled silt loam

Drainage class: moderately well drained
Permeability: moderate
Available water capacity: very high
Depth to frozen soil (July-August): more than 71 inches (more than 180 cm)
Runoff: medium
Depth to seasonally high water table: 3 to 5 feet (1 to 1.5 m)
Hazard of erosion: by water—none if organic mat is not removed, moderate if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Chatanika and Similar Soils

Landform: lower slopes of hills and terraces
Position on the landscape: toeslopes of hills
Slope range: 7 to 12 percent
Organic mat on the surface: 2 to 8 inches (5 to 20 cm) thick
Vegetation: black spruce-paper birch forest

Typical profile:
0 to 4 inches (0 to 10 cm)—very dark grayish brown slightly decomposed forest litter
4 to 6 inches (10 to 15 cm)—very dark grayish brown mucky silt loam
6 to 9 inches (15 to 23 cm)—grayish brown silt loam and very dark grayish brown mucky silt loam
9 to 21 inches (23 to 53 cm)—grayish brown mottled silt loam
21 to 24 inches (53 to 61 cm)—grayish brown mottled frozen silt loam

Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the mineral soil above the permafrost; impermeable in the permafrost.
Available water capacity: high
Depth to frozen soil (July-August): 12 to 40 inches (30 to 102 cm)
Runoff: medium
Depth to seasonally high water table: 12 to 24 inches (30 to 61 cm)
Hazard of erosion: by water—none if organic mat is not removed, moderate if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*****soils on steeper slopes

Major Management Factors

Elevation: 500 to 1000 feet (152 to 305 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*wetness
*permafrost
*pitting and thaw subsidence

421C—Fairbanks-Steese complex, 7 to 12 percent slopes

Composition

Fairbanks soils and similar inclusions: 45 percent
Steese soils and similar inclusions: 45 percent
Contrasting inclusions: 10 percent

Characteristics of Fairbanks and Similar Soils

Landform: loess mantled hills
Position on the landscape: summits and shoulders
Slope range: 7 to 12 percent
Slope features: shape—plain or convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—slightly decomposed forest litter
3 to 9 inches (8 to 23 cm)—very dark grayish brown silt loam
9 to 71 inches (23 to 180 cm)—light olive brown or grayish brown mottled silt loam

Drainage class: well drained
Permeability: moderate
Available water capacity: very high
Depth to weathered bedrock: more than 40 inches (more than 102 cm)
Runoff: medium
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Steese and Similar Soils

Landform: loess mantled hills
Position on the landscape: summits and shoulders
Slope range: 7 to 12 percent
Slope features: shape—plain or convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: paper birch, white spruce, and quaking aspen forest

Typical profile:
0 to 2 inches (0 to 5 cm)—dark brown slightly decomposed forest litter
2 to 5 inches (5 to 13 cm)—brown silt loam
5 to 27 inches (13 to 69 cm)—light olive gray mottled silt loam
27 to 33 inches (69 to 84 cm)—light olive brown channery silt loam
33 to 35 inches (84 to 89 cm)—highly weathered schist bedrock

Drainage class: well drained
Permeability: moderate
Available water capacity: moderate to high
Depth to weathered bedrock: 20 to 40 inches (51 to 102 cm)
Runoff: medium
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Gilmore soils

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*bedrock substratum

421D—Fairbanks-Steese complex, 12 to 20 percent slopes

Composition

Fairbanks soils and similar inclusions: 45 percent
Steese soils and similar inclusions: 45 percent
Contrasting inclusions: 10 percent

Characteristics of Fairbanks and Similar Soils

Landform: loess mantled hills
Position on the landscape: summits and shoulders
Slope range: 12 to 20 percent
Slope features: shape—convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—slightly decomposed forest litter
3 to 9 inches (8 to 23 cm)—very dark grayish brown silt loam
9 to 71 inches (23 to 180 cm)—light olive brown or grayish brown mottled silt loam

Drainage class: well drained
Permeability: moderate
Available water capacity: very high
Depth to weathered bedrock: more than 40 inches (more than 102 cm)
Runoff: medium
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Steese and Similar Soils

Landform: loess mantled hills
Position on the landscape: summits and shoulders
Slope range: 12 to 20 percent
Slope features: shape—convex
Organic mat on the surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: paper birch, white spruce, and quaking aspen forest

Typical profile:
0 to 2 inches (0 to 5 cm)—dark brown slightly decomposed forest litter
2 to 5 inches (5 to 13 cm)—brown silt loam
5 to 27 inches (13 to 69 cm)—light olive gray mottled silt loam
27 to 33 inches (69 to 84 cm)—light olive brown channery silt loam
33 to 35 inches (84 to 89 cm)—highly weathered schist bedrock

Drainage class: well drained
Permeability: moderate
Available water capacity: moderate to high
Depth to bedrock: 20 to 40 inches (51 to 102 cm)
Runoff: medium
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*****Gilmore soils

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*****precipitation—10 to 14 inches (25 to 36 cm)
*****air temperature—24° to 28°F (-4° to -2°C)
*****frost free season—80 to 120 days
*****growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*****bedrock substratum
*****steep slopes

452—Gilmore-Steese complex, 3 to 15 percent slopes

Composition

Gilmore soils and similar inclusions: 65 to 70 percent
Steese soils and similar inclusions: 30 percent
Contrasting inclusions: 0 to 5 percent

Characteristics of Gilmore and Similar Soils

Landform: loess mantled hills
Position on the landscape: hill summits, shoulders, and backslopes
Slope range: 3 to 15 percent
Slope features: shape—convex or plain
Organic mat on surface: 2 to 4 inches (5 to 10 cm) thick
Vegetation: white spruce, paper birch, and quaking aspen forest

Typical profile:
0 to 3 inches (0 to 8 cm)—partially decomposed forest litter and moss
3 to 13 inches (8 to 33 cm)—dark brown or dark yellowish brown silt loam
13 to 16 inches (33 to 41 cm)—olive brown channery silt loam
16 inches (41 cm)—weathered fractured schist bedrock.

Drainage class: well drained
Permeability: moderate
Available water capacity: moderate to high
Depth to weathered bedrock: less than 20 inches (less than 51 cm)
Runoff: very high
Depth to seasonally high water table: more than 72 inches (more than 183 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Steese and Similar Soils

Landform: loess mantled hills in unglaciated uplands
Position on the landscape: slopes and crests of hills
Slope range: 3 to 15 percent
Slope features: shape—plain or convex
Organic mat on surface: 1 to 6 inches (3 to 15 cm) thick
Vegetation: paper birch, white spruce, and quaking aspen forest with alder shrubs

Typical profile:
0 to 2 inches (0 to 5 cm)—dark brown slightly decomposed forest litter
2 to 5 inches (5 to 13 cm)—brown silt loam
5 to 27 inches (13 to 69 cm)—light olive gray mottled silt loam
27 to 33 inches (69 to 84 cm)—light olive brown channery silt loam
33 to 35 inches (84 to 89 cm)—highly weathered schist bedrock

Drainage class: well drained
Permeability: moderate
Available water capacity: moderate to high
Depth to weathered bedrock: 20 to 40 inches (51 to 102 cm)
Runoff: medium
Depth to seasonally high water table: more than 72 inches (more than 183 cm)

Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Included Areas

*Fairbanks soils

Major Management Factors

Elevation: 450 to 1400 feet (137 to 427 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*erosion hazard
*bedrock substratum

611—Piledriver-Eielson complex

Composition

Piledriver soils and similar inclusions: 50 percent
Eielson soils and similar inclusions: 40 percent
Contrasting inclusions: 10 percent

Characteristics of Piledriver and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats with high regional groundwater table
Slope range: 0 to less than 1 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 6 inches (5 to 15 cm) thick
Vegetation: paper birch and white spruce forest

Typical profile:
0 to 3 inches (0 to 8 cm)—dark brown slightly decomposed forest litter and moss
3 to 15 inches (8 to 38 cm)—light olive brown mottled very fine sandy loam or silt loam
15 to 33 inches (38 to 84 cm)—grayish brown mottled loamy fine sand
33 to 45 inches (84 to 114 cm)—grayish brown extremely gravelly sand

Drainage class: somewhat poorly drained
Permeability: moderate in the upper part; rapid in the underlying material
Depth to contrasting sand and gravel: 16 to 40 inches (41 to 102 cm)
Available water capacity: low
Runoff: negligible
Depth to seasonally high water table: 35 to 60 inches (89 to 152 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Characteristics of Eielson and Similar Soils

Landform: floodplains
Position on the landscape: alluvial flats with high regional groundwater table
Slope range: 0 to 1 percent
Slope features: shape—plain
Organic mat on the surface: 2 to 7 inches (5 to 18 cm) thick
Vegetation: white spruce, paper birch, and balsam poplar forest

Typical profile:
0 to 3 inches (0 to 8 cm)—very dark brown slightly decomposed forest litter
3 to 28 inches (8 to 71 cm)—dark grayish brown silt loam or very fine sandy loam
28 to 65 inches (71 to 165 cm)—olive brown and dark gray mottled stratified very fine sandy loam and sand
65 to 69 inches (165 to 175 cm)—very dark gray silt loam

Drainage class: somewhat poorly drained
Permeability: moderate
Depth to contrasting sand and gravel: more than 40 inches (more than 102 cm)
Available water capacity: high
Runoff: negligible
Depth to seasonally high water table: 35 to 60 inches (89 to 152 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*depressions and sloughs
*Chena soils

Major Management Factors

Elevation: 400 to 500 feet (122 to 152 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*high water table
*flooding
*highly permeable sand and gravel substratum

CL—Typic Cryorthents, pit spoil

Composition

Typic Cryorthents and similar inclusions: 80 percent
Contrasting inclusions: 20 percent

Characteristics of Typic Cryorthents and Similar Soils

Landform: gravel pit spoil areas

Position on the landscape: overburden piles from gravel pit preparation
Slope range: 0 to 2 percent with short, steep slopes up to 70 percent
Slope features: shape—convex
Organic mat on surface: 0 to 3 inches (0 to 8 cm) thick
Vegetation: paper birch and balsam poplar forest and alder scrub

Typical profile:
0 to 1 inch (0 to 3 cm)—dark brown forest litter
1 to 18 inches (3 to 46 cm)—light olive brown loamy very fine sand
18 to 75 inches (46 to 191 cm)—olive brown stratified loamy fine sand and very fine sandy loam

Drainage class: well drained
Permeability: moderate
Available water capacity: high
Runoff: high
Thickness of loamy fill: 40 to greater than 75 inches (102 to greater than 191 cm)
Hazard of erosion: by water—none if organic mat is not removed, severe if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare to none

Included Areas

*Salchaket soils
*Jarvis soils
*Fubar soils
*Piledriver soils

Major Management Factors

Elevation: 400 to 600 feet (122 to 183 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*irregular surface with short, steep slopes

Gv—Gravel pits

Composition

Gravel pits and similar inclusions: 95 percent
Contrasting inclusions: 5 percent

Characteristics of Gravel Pits

Landform: alluvial terraces
Position on the landscape: man-made depressions
Slope range: 0 to 1 percent
Slope features: shape—plain or concave
Organic mat on surface: none
Vegetation: none or very sparse herbaceous vegetation and willows

Hazard of flooding: rare

Included Areas

*Jarvis, Piledriver, and Chena soils
*water

Major Management Factors

Elevation: 400 to 600 feet (122 to 183 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Other factors:
*high-permeability gravelly material
*high water table

Lf—Landfills

Composition

Landfills and similar inclusions: 95 percent
Contrasting inclusions: 5 percent

Characteristics of Landfills

Landform: alluvial terraces
Position on the landscape: man-made depressions and mounds
Slope range: 0 to 5 percent
Slope features: shape—plain, concave, or convex
Organic mat on surface: none
Vegetation: none or very sparse herbaceous vegetation and willows
Hazard of flooding: rare

Included Areas

*Jarvis, Salchaket, and Chena soils

Major Management Factors

Elevation: 400 to 600 feet (122 to 183 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Other factors:
*loamy fill material overlies waste

Qu—Quarries

Composition

Quarries and similar inclusions: 95 percent
Contrasting inclusions: 5 percent

Characteristics of Quarries

Landform: hills
Position on the landscape: man-made depressions on hillslopes
Slope range: 0 to more than 100 percent
Slope features: shape—plain, concave, or convex
Organic mat on surface: none
Vegetation: none or very sparse herbaceous vegetation and willows
Hazard of flooding: none

Included Areas

*Gilmore soils

Major Management Factors

Elevation: 575 to 1100 feet (175 to 335 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Other factors:
*bare rock exposed at surface
*steep slopes

Rv—Riverwash

Composition

Riverwash and similar inclusions: 95 percent
Contrasting inclusions: 5 percent

Characteristics of Riverwash

Landform: floodplains
Position on the landscape: alluvial flats and channels
Slope range: 0 to 1 percent
Slope features: shape—plain
Organic mat on surface: none
Vegetation: none or very sparse herbaceous vegetation and willows
Hazard of flooding: frequent

Included Areas

*Eielson, Piledriver, and Fubar soils
*water

Major Management Factors

Elevation: 400 to 600 feet (122 to 183 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Other factors:
*flooding
*abrasion by floating ice
*high water table

UC—Urban land-Typic Cryorthents complex, 0 to 1 percent slopes

Composition

Urban land and similar inclusions: 30 to 60 percent
Typic Cryorthents and similar inclusions: 40 to 60 percent
Contrasting inclusions: 0 to 15 percent

Characteristics of Urban Land

Landform: urban built-up areas on floodplains and terraces
Position on the landscape: man-made roads, buildings, and runways
Slope range: 0 to 1 percent
Slope features: shape—plain
Organic mat on surface: none
Vegetation: none
Runoff: high
Hazard of flooding: rare

Characteristics of Typic Cryorthents and Similar Soils

Landform: urban built-up areas
Position on the landscape: disturbed and leveled areas adjacent to roads, buildings, and runways
Slope range: 0 to 1 percent
Slope features: shape—plain
Organic mat on surface: 0 to 1 inch (0 to 3 cm) thick
Vegetation: seeded or planted grasses, shrubs, and trees

Typical profile:
0 to 3 inches (0 to 8 cm)—very dark grayish brown gravelly fine sand
3 to 30 inches (8 to 76 cm)—light olive brown stratified gravelly very fine sandy loam and gravelly sand
30 to 63 inches (76 to 160 cm)—light olive brown stratified very fine sandy loam and silt loam
63 to 75 inches (160 to 191 cm)—light brownish gray sand

Drainage class: moderately well to well drained
Permeability: moderate in the loamy portions (variable depending on amount of compaction); rapid in the sandy portions
Available water capacity: high
Runoff: negligible
Thickness of gravelly fill: 20 to 57 inches (51 to 145 cm) over stratified loamy material
Depth to contrasting sand and gravel: 34 to more than 40 inches (86 to more than 102 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: rare

Included Areas

*Salchaket soils
*Fubar soils
*Cryorthent soils with more than 57 inches (more than 145 cm) or less than 20 inches (less than 51 cm) of fill over gravelly or sandy alluvium

Major Management Factors

Elevation: 400 to 600 feet (122 to 183 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil related factors:
*variable thickness of gravelly surface
*high-permeability gravelly substratum
*flooding

WAH—Typic Cryaquent, Terric Cryofibrist, and Histic Cryaquept soils

Composition

Typic Cryaquent soils and similar inclusions: 0 to 90 percent
Terric Cryofibrist soils and similar inclusions: 0 to 80 percent
Histic Cryaquept soils and similar inclusions: 20 to 50 percent
Water: 0 to 50 percent

Characteristics of Typic Cryaquents and Similar Soils

Landform: terraces
Position on the landscape: thermokarst depressions
Slope range: 0 to 1 percent
Slope features: shape—concave
Organic mat on surface: 1 to 4 inches (3 to 10 cm) thick
Vegetation: sedges, grasses, and low shrubs

Typical profile:
0 to 1 inch (0 to 3 cm)—dark yellowish brown peat
1 to 71 inches (3 to 180 cm)—dark gray and dark grayish brown mottled silt loam

Drainage class: poorly drained

Permeability: moderate
Available water capacity: high
Runoff: high
Depth to seasonally high water table: 5 to 10 inches (13 to 25 cm)
Hazard of erosion: by water—none if organic mat is not removed, slight if the mat is removed; by wind—none if organic mat is not removed, severe if the mat is removed
Hazard of flooding: none

Characteristics of Terric Cryofibrists and Similar Soils

Landform: terraces
Position on the landscape: thermokarst depressions
Slope range: 0 to 1 percent
Slope features: shape—concave
Organic mat on surface: 16 to 51 inches (41 to 130 cm) thick
Vegetation: sedges

Typical profile:
0 to 22 inches (0 to 56 cm)—very dark brown mucky peat
22 to 59 inches (56 to 150 cm)—dark grayish brown mottled silt loam

Drainage class: very poorly drained
Permeability: very rapid in the organic surface materials; moderate in the loamy substratum
Available water capacity: high
Runoff: high
Depth to seasonally high water table: 0 to 4 inches (0 to 10 cm)
Hazard of erosion: by water—none if the organic mat is not removed, slight if the mat is removed; by wind—none
Hazard of flooding: none

Characteristics of Histic Cryaquepts and Similar Soils

Landform: terraces
Position on the landscape: thermokarst depressions
Slope range: 0 to 1 percent
Slope features: shape—concave
Organic mat on surface: 8 to 16 inches (20 to 41 cm) thick
Vegetation: sedges, grasses, and low shrubs

Typical profile:
0 to 15 inches (0 to 38 cm)—very dark grayish brown peat
15 to 60 inches (38 to 152 cm)—dark gray mottled silt loam

Drainage class: very poorly drained
Permeability: rapid in the slightly decomposed surface peat; moderate to low in the subsurface peat and loamy mineral soil
Available water capacity: high
Runoff: high
Depth to seasonally high water table: 0 to 4 inches (0 to 10 cm)
Hazard of erosion: by water—none if the organic mat is not removed, slight if the mat is removed; by wind—none
Hazard of flooding: none

Included Areas

*soils with permafrost and an organic surface layer more than 16 inches (more than 41 cm) thick

Major Management Factors

Elevation: 550 to 650 feet (168 to 198 m)
Climatic factors (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*frost free season—80 to 120 days
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)
Soil-related factors:
*high water table
*ponding

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the Survey Area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment, and to help avoid soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, foresters, biological technicians, and others collect extensive field data on the nature and behavior characteristics of the soils. Field experience and data collected on soil properties (such as erosion, droughtiness, flooding, and other factors that affect various soil uses and management) are used as a basis for predicting soil behavior.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and the environment. This survey can help planners maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil; and to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Forestry

Soil surveys are becoming increasingly more important to forestland owners and managers as they seek ways to improve the productivity and management of their lands and to plan the most efficient use of forest resources. Information about forestry and the hazards and limitations that should be considered in areas used as forestland are given in Table 4—Forestland Management and Productivity. Important forestry-soils interpretations can be acquired quickly through the use of this table. The methods and procedures used by foresters and soil scientists to develop this information are contained in the Natural Resources Conservation Service's "National Soils Handbook" and "National Forestry Manual", and applicable State supplements.

Forestland Management and Productivity

Table 4 lists the ordination symbol and major management concerns for each forested soil. The *ordination symbol* is based on a uniform system of labeling individual soils and groups of soils that are similar in forest productivity, use, and management. All soils having the same ordination symbol have about the same potential productivity and require the same general kinds of management.

The first element of the ordination symbol, *productivity class,* is a number that denotes potential productivity in terms of cubic meters of wood per hectare per year for the indicator species (the major species with the highest productivity listed in the soil map unit). The larger the number the greater the potential productivity. Productivity class is based on site index and the corresponding culmination of mean annual increment (CMAI). A productivity class of 1 would mean 1 cubic meter of wood per hectare per year (14.3 cubic feet per acre

per year), a number 2 would mean 2 cubic meters per hectare per year (28.6 cubic feet per acre per year), and so on.

The second element of the ordination symbol, *subclass*, is a capital letter that indicates certain soil or physiographic characteristics that contribute to important hazards or limitations to be considered in forest management. The letter *R* indicates restrictions due to steep slopes; *X* indicates limitations due to stones or rocks on or in the soil; *W* indicates excessive water in or on the soil; *D* indicates restrictions due to limited rooting depth; *C* indicates limitations due to the kind or amount of clay in the upper portion of the soil profiles; *S* indicates limitations associated with dry sandy soils; and *F* indicates restrictions due to fragmental or skeletal soils. The letter *A* indicates few or no limitations or restrictions.

In Table 4, the soils are rated for a number of factors to be considered in use and management. *Slight*, *moderate*, and *severe* are used to indicate the degree of major soil limitations. Soils rated *slight* require no additional measures other than the normal local procedures used in forest management. Soils rated *moderate* and *severe* may require special measures or conservation practices designed to overcome the limitations.

Erosion hazard ratings refer to the risk of water erosion and soil loss in well managed forests. A rating of *slight* indicates that expected soil loss is small and no particular preventive measures are needed under ordinary conditions; *moderate* indicates measures are needed to control erosion during timber harvesting and road construction to prevent site degradation; and *severe* indicates that intensive management or special equipment and methods are needed to prevent excessive erosion.

Equipment limitation ratings apply to the operability and use of wheeled and tracked equipment over the general logging area. *Slight* indicates that equipment use normally is not restricted in kind or time of year because of soil factors; *moderate* indicates a limitation due to slope, seasonal wetness or flooding, or some other factor; and *severe* indicates a need for special equipment, a hazard in the use of equipment, or a longer seasonal limitation.

The most obvious limitation to the use of equipment is slope. As slope gradient increases, the operability of wheeled equipment becomes restricted and tracked equipment must be used. Very steep slopes may require the use of more sophisticated harvesting systems. Even on level and gently sloping areas, equipment use may be limited by soil wetness, especially in combination with silty and organic surface textures. Equipment getting stuck in mud and severe soil disturbance contribute to soil compaction and erosion. Other soil factors that account for equipment limitations include surface bedrock and rock fragments, and cobbly and stony surface textures.

Seedling mortality ratings refer to the probability of death of tree seedlings as influenced by soil properties. Ratings apply to healthy seedlings that are naturally established or properly planted; plant competition is not considered. *Slight* indicates that no problem is expected under normal conditions; *moderate* indicates some mortality can be expected and that extra precautions are advisable; and *severe* indicates that mortality will be high and extra precautions are essential for successful reforestation. Seed source availability and dispersal may be of greater importance to successful reforestation than seedling mortality.

Excessive soil wetness due to a high water table or saturated soil conditions is a major factor contributing to seedling mortality problems. Seedlings in wet soils also may be susceptible to frost heaving during periods of diurnal freeze-thaw cycles, particularly at higher elevations. Another factor leading to mortality is soil droughtiness due to the low available water capacity of coarse textured soils and soils with high amounts of coarse fragments. Mortality problems associated with dry soil conditions are compounded on convex slope positions such as ridges and shoulder slopes. Shallow or restricted rooting depth due to bedrock, contrasting layers, or compact layers also contributes to seedling mortality problems. Special site preparation or reinforcement plantings may be needed on soils with a *moderate* or *severe* seedling mortality hazard.

Windthrow hazard ratings consider soil characteristics that affect the development of tree roots and the ability of the soil to hold trees firmly. Windthrow hazard is highly variable and depends largely on the frequency and duration of strong winds; turbulence and wind funneling created by topography, orographic effects, and cutting boundary patterns; and

tree heights and density. Restricted rooting depth is the principal reason for increased windthrow hazard. In Alaska, low soil temperatures and soil wetness restrict root growth, and supporting roots of all tree species typically are concentrated in the upper soil horizons. Shallow bedrock also limits rooting depth, although in many instances fractures in bedrock enhance wind firmness by favoring the anchoring of roots.

Because of the shallow rooting characteristics of Alaska trees, *slight* ratings are not used. *Moderate* indicates that an occasional tree may blow down during periods of moderate or strong winds, and *severe* indicates that many trees may be expected to blow down during such periods. Soils with *moderate* and *severe* ratings require more caution in thinning operations; more attention to wind occurrence, direction, and speed when designing timber sales and cuts; and contingency plans calling for periodic salvage of windthrown trees.

Plant competition ratings refer to the likelihood of invasion or growth of understory plants that inhibit reforestation and stand development following logging or other soil disturbances. Ratings vary considerably depending on the occurrence and proximity of competitive species, and assume that seed dispersal or planting on the soil occurs within 3 to 5 years following disturbance. *Slight* indicates that understory plants are not likely to delay reforestation and natural or planted seedlings have good prospects for development without undue competition; *moderate* indicates that plant competition will delay natural or planted reforestation; and *severe* indicates that competition can be expected to prevent the establishment of a new forest for tree crop production unless precautionary measures are taken.

Favorable climate and soil moisture characteristics, which contribute to rapid and lush growth or invasion of understory plants, account for most plant competition problems. Sources of competing vegetation include sprouting of existing plants, vegetative spread of plants from adjacent areas, and germination of new seed. *Moderate* and *severe* ratings indicate the need for careful consideration of the occurrence and competitiveness of understory vegetation during pre-harvest clean up in preparation for reforestation. Biological, mechanical, or chemical treatments may be needed to retard growth of undesirable plants. Where the competing species is bluejoint reedgrass, intensive grazing by cattle over several years may reduce grass and mulch cover and create a suitable seedbed for trees.

In Table 4, the *potential productivity of common trees* on a soil is expressed as *site index*. *Common trees* are those tree species that generally occur on the soil regardless of economic importance. *Site index* is the average height growth in feet of dominant and codominant trees in a specified number of years in fully stocked, even-aged, unmanaged stands. The specified number of years (base age) varies for the different trees species. Site index is determined from height and age measurements of selected trees from stands throughout the Survey Area. Tables and equations for determining site index are given in the appropriate publication for each major tree species—Farr (*1967*) for white spruce and Gregory and Haack (*1965*) for aspen and birch. Site index should be used as a comparative index between soils and an approximate measure of height growth, not an absolute or expected value. The most rapid tree growth and greatest yields of a particular tree species can be expected on soils with the highest site indices.

Site index values can be converted into estimated yields using yield tables published with the site index tables and equations. The maximum average annual volume growth of the stand in meters per hectare per year is listed under volume of wood fiber. Stand age at which this volume growth occurs varies by species and site index. Foresters refer to this volume as the culmination of mean annual increment (CMAI). Actual yield and stand volume, however, will vary from stand to stand and must be measured in the field.

Recreation

Table 5 rates the soils of the Survey Area according to limitations that affect their suitability for recreation. Ratings are based on restrictive soil features such as wetness, slope, texture of the surface layer, and susceptibility to flooding. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, potential water impoundment sites, and either access to public sewer lines or the capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degrees, for recreational uses by the duration of flooding and the season when it occurs. On-site assessment of the height, duration, intensity, and frequency of flooding is essential in planning recreational facilities.

The degree of soil limitation in Table 5 is expressed as *slight*, *moderate*, or *severe*. *Slight* indicates that soil properties are generally favorable and limitations are minor and easily overcome. *Moderate* indicates that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* indicates that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures. This information can be supplemented by other information in the survey, for example, interpretations for septic tank absorption fields in Table 7 and interpretations for dwellings without basements and for local roads and streets in Table 6.

Camp areas are tracts of land used intensively as sites for tents, trailers, and campers and for outdoor activities that accompany such sites. These areas require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The soils are rated on soil properties that influence the ease of developing camp areas and performance of the areas after development. Also considered are soil properties that influence trafficability and promote the growth of vegetation after heavy use.

Picnic areas are natural or landscaped tracts of land that are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The soils are rated on soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation after development. The surface of picnic areas should readily absorb rainfall, remain firm under heavy foot traffic, and not be dusty when dry.

Playgrounds are areas used intensively for baseball, football, or similar activities. These areas require a nearly level soil that is free of stones and can withstand heavy foot traffic and maintain an adequate cover of vegetation. The soils are rated on soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation. Slope and stoniness are the main concerns in developing playgrounds. The surface of playgrounds should readily absorb rainfall, remain firm under heavy foot traffic, and not be dusty when dry.

Paths and trails are areas used for hiking and horseback riding. These areas should require little or no cutting and filling during site preparation. The soils are rated on soil properties that influence trafficability and erodibility. Paths and trails should remain firm under foot traffic and not be dusty when dry.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Engineering

This section provides information for planning land uses related to urban development and water management. Soils are rated for construction materials. Ratings are based on observed performance of the soils and the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, evaluating land use alternatives, and planning site investigations prior to design and construction. However, the information has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet (1.5 to 1.8 m). Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for on-site investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, site selection, and design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet (1.5 to 1.8 m) of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; plan detailed on-site investigations of soils and geology; and locate potential sources of gravel, sand, earthfill, and topsoil.

The information in the tables, along with the soil maps, soil descriptions, and other data provided in this survey, can be used to make additional interpretations. Some of the terms used in this soil survey have a special meaning in soil science and are defined in the glossary.

Building Site Development

Table 6 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the intended use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet (1.5 or 1.8 m) for basements, graves, utility lines, open ditches, and other purposes. Ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, permafrost, stone content, soil texture, and slope affect the ease of digging, filling and compacting. The depth to a seasonal high water table and the susceptibility of the soil to flooding affect the time of the year that excavations can be made. Soil texture and the

depth to the water table affect the resistance of the excavation walls or banks to sloughing or caving.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, dwellings with basements, and dwellings without basements. Ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, melting of ground ice, and organic layers can cause the movement of footings. A high water table, depth to bedrock or permafrost, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet (more than 1.5 to 1.8 m) are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet (less than 1.8 m). Ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or permafrost, a high water table, flooding, and slope affect the ease of excavating and grading. Soil Strength (as inferred from the engineering classification of the soils), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or permafrost, and the available water capacity in the upper 40 inches (102 cm) affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 7 shows the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 7 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for use, and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches (61 and 183 cm) is evaluated. Ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or permafrost, and flooding affect absorption of the effluent. Large stones and bedrock or permafrost interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet (less than 1.2 m) below the base of the absorption field, if slope is excessive, or if the water table is near the surface. Unsaturated soil material must be

located beneath the absorption field to effectively filter the effluent. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments, and utilize compacted, relatively impervious soil material for the floor and sides to minimize seepage and contamination of local ground water. Generally, aerobic lagoons hold the sewage within a depth of 2 to 5 feet (0.6 to 1.5 m).

Table 7 gives ratings for the natural soil that makes up the lagoon floor. The surface layer, and generally 1 or 2 feet (0.3 or 0.6 m) of soil material below the surface layer, are excavated to provide material for the embankments. Ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or permafrost, flooding, large stones, and content of organic matter.

Excessive seepage due to rapid permeability of the soil, or a water table that is high enough to raise the level of sewage in the lagoon, causes a lagoon to function unsatisfactorily and can result in pollution. A high content of organic matter inhibits aerobic activity and also is detrimental to proper functioning of the lagoon. Slope, bedrock, and permafrost can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench and spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil and spread, compacted, and covered daily with a thin layer of soil from a source away from the site. Both types of landfill must be able to bear heavy vehicular traffic, and both types involve a risk of ground water pollution. Ease of excavation and revegetation should be considered.

The ratings in Table 7 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or permafrost, a high water table, slope, and flooding affect both types of landfill. Texture, highly organic layers, and soil reaction affect trench type landfills. Unless otherwise noted, ratings apply only to that part of the soil within a depth of 6 feet (1.8 m). For deeper trenches, a limitation rated as *slight* or *moderate* may not be valid. On-site investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained off-site, transported to the landfill, and spread over the waste. Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to wind erosion.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, permafrost, or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 8 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel. Ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard construction practices are assumed. Each soil is excavated to a depth of 5 or 6 feet (1.5 or 1.8 m).

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet (1.8 m) high and less exacting in design than higher embankments.

Ratings are for soil material below the surface layer to a depth of 5 or 6 feet (1.5 or 1.8 m). It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

Ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. Large stones, a high water table, and slope affect the ease of excavation. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel, or both. They have at least 5 feet (1.5 m) of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet (more than 0.9 m). Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet (0.3 to 0.9 m). Soils rated *poor* have one or more of the following characteristics: a plasticity index of more than 10, slopes of more than 25 percent, or a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet (less than 0.9 m) thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In Table 8, only the probability of finding material in suitable quantity in or below the soil is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a *probable* source has a layer of clean sand or gravel or a layer of sand or gravel that is as much as 12 percent silty fines. This material must be at least 3 feet (at least 0.9 m) thick and less than 50 percent, by weight, large stones. All other soils are rated as an *improbable* source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches (102 cm) of a soil are evaluated for use as topsoil. The reclamation potential of the borrow area is also evaluated.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. Rock fragments, slope, a water table, soil texture, and the thickness of suitable material affect the ease of excavating, loading, and spreading. Slope, a water table, rock fragments, and bedrock affect reclamation of the borrow area.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches (102 cm). They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, soils that have only 20 to 40 inches (51 to 102 cm) of suitable material, soils that have an appreciable amount of gravel, or soils that have slopes of 8 to 15 percent. They are not so wet that excavation is difficult.

Soils rated *poor* are very sandy, have less than 20 inches (less than 51 cm) of suitable material, have a large amount of gravel, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils generally is preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 9 gives information on soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possible increased maintenance are required.

The restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways are also given in this table.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches (152 cm). The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet (less than 6 m) high, constructed to impound water or protect the land against overflow. In this table, the soils are rated as a source of material for embankment fill. Ratings apply to the soil material below the surface layer to a depth of about 5 feet (about 1.5 m). It is assumed that soil layers will be uniformly mixed and compacted during construction.

Ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, an in-depth, on-site investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet (less than 1.5 m) of suitable material or organic matter. A high water table affects the amount of usable material and trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff, or embankment ponds that impound water 3 feet or more (0.9 m or more) above the original surface. Excavated ponds are affected by depth to a permanent water table and permeability of the aquifer. Depth to bedrock and permafrost affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, permafrost, or other layers that affect the rate of water movement; permeability; depth to high water table, or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and potential frost action. Depth to bedrock or permafrost, slope, and the hazard of cutbanks caving affect excavating and grading and the stability of ditchbanks. Extreme acidity or toxic substances in the root zone, such as salts, sodium, or sulfur, adversely affect the productivity of the soil after drainage. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. Depth to the water table, the need for drainage, flooding, available water capacity,

intake rate, permeability, erosion hazard, and slope affect the design and management of irrigation systems. Depth to bedrock or permafrost affects the construction of a system; and depth of the root zone and soil reaction affect the performance of a system.

Terraces and diversions are embankments, or a combination of channels and ridges, constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, and depth to bedrock or permafrost affect the construction of terraces and diversions. A restricting rooting depth, severe hazard of wind and water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a non-erosive velocity. Wetness, slope, and depth to bedrock or permafrost affect the construction of grassed waterways. Wind erosion hazard, low available water capacity, restricted rooting depth, and restricted permeability adversely affect the growth and maintenance of grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. This data and the estimates of soil and water features listed in Tables 10 through 16 are explained on the following pages.

Soil properties are determined by field examination of the soils and laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics. These results are reported in Table 10.

Estimates of soil properties are based on field examinations, laboratory tests of samples from the Survey Area, and laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 10 gives estimates of the engineering classification and the range of index properties for the major layers of each soil in the Survey Area. Most soils have layers of contrasting properties within the upper 5 or 6 feet (1.5 or 1.8 m).

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under the heading "Soil Series, Higher Taxa, and Their Morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the glossary.

Classification of the soils is determined according to the system adopted by the American Association of State Highway and Transportation Officials (AASHTO) (*American Association of State Highway and Transportation Officials 1986*) and the Unified soil classification system (*American Society for Testing and Materials 1993*).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches (less than 8 cm) in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches (less than 8 cm) in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

Rock fragments larger than 10 inches (larger than 25 cm) in diameter and 3 to 10 inches (8 to 25 cm) in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches (less than 8 cm) in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the Survey Area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the Survey Area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 11 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the Survey Area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given in the section “Soil Series, Higher Taxa, and Their Morphology.”

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3-bar moisture tension. Weight is determined after drying the soil at 105°C. In Table 11—Physical and Chemical Properties of Soils the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Ksat (permeability) refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are

based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests, and for many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, evaluating soil amendments for fertility and stabilization, and determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs primarily due to the interaction of clay minerals with water, and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils. If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, more than 9 percent, is sometimes used.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In Table 11, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Erosion factors K and Kf indicate the susceptibility of a soil to sheet and rill erosion. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE). Factor Kf is used in the Revised Universal Soil Loss Equation (RUSLE). Both factors are used to predict the average rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (as much as 4 percent), and on soil structure and permeability. The estimates of K are modified by the presence of rock fragments, while Kf refers to the soil fine fraction only. Values of K and Kf range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion.

Erosion factor T is an estimate of the maximum average rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the susceptibility of soil to wind erosion and the amount of soil lost. Soils are grouped according to the amount of stable aggregates 0.84 millimeter in size. Soils containing rock fragments can occur in any group. The groups are as follows:

1. *1 to 9 percent dry soil aggregates.* These soils are very highly erodible. Crops can be grown if intensive measures to control wind erosion are used.
2. *10 to 24 percent dry soil aggregates.* These soils are highly erodible. Crops can be grown if intensive measures to control wind erosion are used.
3. *25 to 39 percent dry soil aggregates.* These soils are erodible. Crops can be grown if intensive measures to control wind erosion are used.

4. *25 to 39 percent dry soil aggregates with > 35 percent clay or > 5 percent calcium carbonate.* These soils are moderately erodible. Crops can be grown if measures to control wind erosion are used.

5. *40 to 44 percent dry soil aggregates.* These soils are slightly erodible. Crops can be grown if measures to control wind erosion are used.

6. *45 to 49 percent dry soil aggregates.* These soils are very slightly erodible. Crops can easily be grown.

7. *50 percent or more dry soil aggregates.* These soils are very slightly erodible. Crops can easily be grown.

8. *Stony, gravelly, or wet soils and other soils not subject to wind erosion.*

Soil Moisture Status

Table 12 gives the soil hydrologic groups and depths of occurrence of wet soil by month. *Hydrologic soil groups* are groups of soils that, when saturated, have the same runoff potential under similar storm and ground cover conditions. The soil properties that affect the runoff potential are those that influence the minimum rate of infiltration in a bare soil after prolonged wetting and when the soil is not frozen. These properties include depth to a seasonal high water table, intake rate, permeability after prolonged wetting, and depth to a very slowly permeable layer. The influences of ground cover and slope are treated independently and are not taken into account in hydrologic soil groups.

In the definitions of the hydrologic soil groups, the infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. The transmission rate is the rate at which water moves through the soil and is controlled by properties of the soil layers.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of very deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well or well drained soils that have a moderately fine to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils that have a moderately fine or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of soils that have a permanent high water table and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

The *soil moisture status by depth* given in Table 12 reports the occurrence of wet soil for each month. *Wet* soil is defined as soil with water held at less than 1 kPa (or less than 0.5 kPa for coarse-grained soils). Wet soil may or may not have free water that would fill an unlined borehole. Soil moisture status is determined in the field from water films on surfaces of soil grains or structural units and inferred from evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. Soil moisture status is not given for winter months, and no distinction is made between wet soil that is thawed and wet soil that is frozen. Wet soil is identified down to a depth of 6 feet (1.8 m).

Flooding and Ponding

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflow from streams or runoff from adjacent slopes. *Ponding* is the covering of the soil surface by stagnant water.

Tables 13 and 14 give the frequency and duration of flooding and ponding, and the depth of ponding, by month. Frequency, duration, depth, and probable dates of occurrence are estimated. Frequency is expressed as *none*, *rare*, *occasional*, or *frequent*. *None* means flooding is not probable; *rare* that it is unlikely but is possible under unusual weather conditions (the chance of flooding is nearly 0 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs often under normal weather conditions (the chance of flooding is 50 percent in any year).

Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 to 30 days), and *very long* (more than 30 days). The time of year that flooding is most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development. Local information about the extent and level of flooding and the relationship of each soil on the landscape to historic floods are also considered. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

The flooding information in Table 13 does not take into consideration man-made flood-control structures that might reduce the frequency or duration of flooding.

Hydric Soils

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and hydrology (*Cowardin et al. 1979*; *Environmental Laboratory 1987*; *National Research Council 1995*; *Tiner 1985*). Criteria for each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (*Federal Register 1994*). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. However, in order to determine whether a specific soil is a hydric soil or nonhydric soil more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria which identify those estimated soil properties unique to hydric soils have been established (*Federal Register 1995*). These criteria are used to identify a phase of a soil series or higher taxon that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (*Soil Survey Staff 1975, 1996*) and in the “Soil Survey Manual” (*Soil Survey Division Staff 1993*).

If soils are wet for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators that can be used to make on-site determinations of hydric soils on Eielson Air Force Base are specified in “Field Indicators of Hydric Soils in the

United States" (*United States Department of Agriculture 1996*).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches (about 51 cm). This depth may be greater if determination of an appropriate indicator so requires. It is recommended that soils be excavated and described as deep as necessary to understand the redoximorphic processes. Then, using the completed soil description, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if one or more of the approved indicators is present.

This survey can be used to locate probable areas of hydric soils. Each soil mapped in the Survey Area is identified as hydric or non-hydric in Table 15.

Some map units consist almost entirely of hydric soils, such as Map Unit 20—Mosquito peat, in which all listed components are hydric; or Map Unit 22— Tanacross peat, in which just one minor component is non-hydric. Other map units consist primarily of non-hydric soils, such as Map Unit 42D—Fairbanks silt loam, 12 to 20 percent slopes, in which all listed components are non-hydric; or Map Unit 32—Salchaket fine sandy loam, in which hydric soils are present only as minor components. This information can help in planning land uses; however, on-site investigation is recommended to determine if hydric or non-hydric soils are present on a specific site (*National Research Council 1995*; *United States Department of Agriculture 1996*). Hydric soils may occur as minor inclusions even in map units listed without any hydric soils in Table 15.

Table 15 also lists the local landform on which each soil occurs, the hydric criteria code, and whether or not each soil meets the saturation, flooding, or ponding criteria for hydric soils. Codes for hydric soil criteria are found in the following key to hydric soil criteria:

Key to Hydric Soil Criteria

1. All Histosols except Folists, or

2. Soils in Aquic suborders, Aquic subgroups, Albolls suborder, Salorthids great group, Prell great groups of Vertisols, Pachic subgroups, or cumulic subgroups that are:
   a. Somewhat poorly drained and have a frequently occurring water table at less than 0.5 foot from the surface for a significant period (usually more than 2 weeks) during the growing season, or
   b. Poorly drained or very poorly drained and have either:
      (1) A frequently occurring water table at less than 0.5 foot from the surface for a significant period (usually more than 2 weeks) during the growing season if textures are coarse sand, sand, or fine sand in all layers within 20 inches, or for other soils
      (2) A frequently occurring water table at less than 1.0 foot from the surface for a significant period (usually more than 2 weeks) during the growing season if permeability is equal to or greater than 6.0 in/hour in all layers within 20 inches, or
      (3) A frequently occurring water table at less than 1.5 feet from the surface for a significant period (usually more than 2 weeks) during the growing season if permeability is less than 6.0 in/hour in any layer within 20 inches, or

3. Soils that are frequently ponded for long duration or very long duration during the growing season, or

4. Soils that are frequently flooded for long duration or very long duration during the growing season.

Soil Features

Table 16 gives estimates of several important soil features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Depth to restrictions is given if a root-restricting layer is within a depth of 60 inches (152 cm). The depth is based on many soil borings and on observations during soil mapping. Restrictive layers in the Survey Area are either bedrock or permafrost. The rupture resistance of the restriction is specified *as weakly cemented, moderately cemented, strongly cemented, very strongly cemented*, or *indurated*. If bedrock is moderately cemented or softer, or highly fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is strongly cemented or harder, and massive, blasting or special equipment generally is needed for excavation. Areas of bedrock that are strongly cemented or harder may occur in soils that are typically underlain by softer bedrock; on-site investigation is recommended to confirm that readily excavatable material is present at any specific site.

Subsidence is the settlement of organic soils. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. Table 16 shows the expected initial subsidence that usually is a result of drainage, and annual subsidence that usually is a result of oxidation. The table does not show subsidence caused by an imposed surface load, by the withdrawal of ground water throughout an extensive area as a result of lowering the water table, or by thaw of ground ice.

Potential frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave), and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

A *low* potential for frost action indicates that the soil is rarely susceptible to the formation of ice lenses; a *moderate* potential indicates that the soil is susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength; and a *high* potential indicates that the soil is highly susceptible to formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (*Soil Survey Staff 1975*). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations, or from laboratory measurements. Table 17 shows the classification of the soils in the Survey Area. The categories are defined in the following paragraphs.

ORDER. Ten soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Inceptisol.

SUBORDER. Each order is divided into suborders, primarily on the basis of properties that influence soil genesis and are important to plant growth, or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Cryept (*Cry* meaning cold, plus *ept* from Inceptisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Eutrocryepts (*Eutro* meaning high base saturation, plus ochrept, the cold suborder of the Inceptisols).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Eutrocryepts.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, thickness of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is coarse-silty, mixed, Typic Eutrocryepts.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can vary within a series.

Soil Series, Higher Taxa, and Their Morphology

In this section, characteristics of the soil and the material in which it formed are identified for each soil series or higher taxon recognized in the Survey Area. A pedon, a small three-

dimensional area of soil that is typical of the series in the Area, is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (*Soil Survey Division Staff 1993*). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (*Soil Survey Staff 1975*) and in "Keys to Soil Taxonomy" (*Soil Survey Staff 1998*). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Bolio Series

Classification

Taxonomic class: dysic, Typic Hemistels

Setting

Depth class: shallow to moderately deep over permafrost
Drainage class: very poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate to low in the more highly decomposed organic matter; impermeable in the permafrost
Landforms and positions: alluvial terraces
Parent material: organic matter
Slope range: 0 to 2 percent
Elevation: 400 to 900 feet (122 to 274 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Bolio peat—on a level slope at 845 feet (258 m) elevation, under dwarf birch scrub and sedge vegetation

Oi—0 to 6 inches (0 to 15 cm); strong brown (7.5YR 4/6) slightly decomposed organic matter; many very fine to coarse roots; strongly acid (pH 5.4); abrupt smooth boundary
Oe—6 to 11 inches (15 to 28 cm); black (10YR 2/1) moderately decomposed herbaceous organic matter; few very fine and fine roots; strongly acid (pH 5.4); abrupt smooth boundary
Oef1—11 to 23 inches (28 to 58 cm); very dark gray (10YR 3/1) moderately decomposed herbaceous organic matter; moderately acid (pH 5.6); abrupt smooth boundary
Oef2—23 to 26 inches (58 to 66 cm); very dark grayish brown (10YR 3/2) moderately decomposed herbaceous organic matter; slightly acid (pH 6.2)

Typical Pedon Location

Map unit in which located: 11—Lemeta peat, in the Ft. Wainwright Soil Survey Area
Location in survey area: UTM zone 6, 482866 m E, 7135882 m N; approximately 35 miles south of Fairbanks, Alaska near Blair lakes; transect 97WRL048A, hole 1

Range in Characteristics

Depth to frozen soil (July-August): 14 to 28 inches (36 to 71 cm)
Organic layer thickness: more than 40 inches (more than 102 cm)

Oi horizon:
Color—hue of 7.5YR or 10YR; value moist from 2.5 to 4; chroma moist from 2 to 6
Texture—fibric peat
Reaction—extremely acid to neutral

Oe horizon:
Color—hue of 5YR, 7.5YR, or 10YR; value moist of 2 or 3; chroma moist of 1 or 2
Texture—hemic peat
Reaction—extremely acid to moderately acid

Oef horizon:
Color—hue of 10YR or 7.5YR; value moist of 2 or 3; chroma moist of 1 or 2
Texture—hemic peat or stratified hemic and sapric peat
Reaction—moderately to slightly acid

Cgf horizon (where present):
Color—hues from 10YR to 2.5Y; value moist of 3, 4, or 5; chroma moist of 1 or 2
Texture—silt loam, mucky silt loam, or peaty silty clay loam
Reaction—moderately acid to neutral

Chatanika Series

Classification

Taxonomic class: coarse-silty, mixed, superactive, subgelic, Typic Aquiturbels

Setting

Depth class: deep or very deep
Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the mineral soil above the permafrost; impermeable in the permafrost
Landforms and positions: terraces and lower slopes of hills
Parent material: colluviated silty loess
Slope range: 0 to 20 percent
Elevation: 500 to 1000 feet (152 to 305 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Chatanika silt loam—on a 1 percent slope at 550 feet (180 m) elevation, under paper birch and black spruce forest with alder shrubs

Oi—0 to 4 inches (0 to 10 cm); very dark grayish brown (10YR 3/2) fibric material; slightly decomposed moss, leaves, twigs, and other woody debris; common fine to medium roots; extremely acid; clear wavy boundary
A—4 to 6 inches (10 to 15 cm); very dark grayish brown (10YR 3/2) mucky silt loam; structureless; friable, nonsticky and nonplastic; common fine and few medium roots; slightly acid; clear irregular boundary
Cg/A—6 to 9 inches (15 to 23 cm); grayish brown (2.5Y 5/2) silt loam (Cg) and very dark

grayish brown (10YR 3/2) mucky silt loam (A); structureless; friable, nonsticky and nonplastic; common fine and few medium roots; slightly acid; clear irregular boundary

Cg—9 to 21 inches (23 to 53 cm); grayish brown (2.5Y 5/2) silt loam; weak medium platy structure; very friable, nonsticky and nonplastic; few fine roots; common medium prominent brown (7.5YR 4/4) redoximorphic concentrations; few dark brown (10YR 3/3) organic stained material; slightly acid; clear smooth boundary

Cgfm—21 to 24 inches (53 to 61 cm); grayish brown (2.5Y 5/2) silt loam; massive structure; extremely firm; few medium prominent brown (7.5YR 4/4) redoximorphic concentrations, and common medium faint gray (2.5Y 5/1) redoximorphic depletions; slightly acid

Typical Pedon Location

Map unit in which located: 40A—Chatanika silt loam, 0 to 3 percent slopes, in the adjacent Fairbanks Soil Survey Area

Location in survey area: UTM zone 6, 495400 m E, 7167350 m N; near intersection of Nordale and Chena Hot Springs Roads, east of Fairbanks, Alaska; transect 97DM022, hole 3

Range in Characteristics

Organic layer thickness: 2 to 8 inches (5 to 20 cm)
Depth to frozen soil (July-August): 12 to 40 inches (30 to 102 cm)

O horizon:
Color—hue of 10YR or 7.5YR; value moist of 2, 2.5 or 3; chroma moist from 1 to 3
Texture—peat or mucky peat
Reaction—extremely to slightly acid

A horizon:
Color—hue of 10YR or 2.5Y; value moist from 2 to 4; chroma moist from 1 to 3
Texture—silt loam
Reaction—very strongly to strongly acid

Cg/A horizon:
Color—Cg material: hue of 10YR or 2.5Y; value moist from 4 to 6; chroma moist from 1 to 4—A material: hue of 10YR or 2.5Y; value moist from 2 to 4; chroma moist from 1 to 3
Texture—silt loam
Reaction—very strongly to slightly acid

Cg horizon:
Color—hue of 10YR or 2.5Y; value moist from 4 to 6; chroma moist from 1 to 4
Texture—silt loam or very fine sandy loam
Reaction—moderately acid to neutral

Cgfm horizon:
Color—hue of 10YR or 2.5Y; value moist of 5 or 6; chroma moist of 1 or 2
Texture—frozen silt loam or very fine sandy loam
Reaction—moderately acid to neutral

Chena Series

Classification

Taxonomic class: sandy-skeletal, mixed, Typic Cryorthents

Setting

Depth class: very shallow over sand and gravel
Drainage class: excessively drained
Permeability: moderate in the loamy surface soil; rapid in the sand and gravel
Landforms and positions: stream terraces
Parent material: alluvium
Slope range: 0 to 2 percent
Elevation: 400 to 600 feet (122 to 183 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Chena very fine sandy loam—on a level plain at 545 feet (166 m) elevation, under paper birch and white spruce forest

Oe—0 to 3 inches (0 to 8 cm); very dark gray (7.5YR 3/1) partially decomposed forest litter; many very fine to coarse roots; moderately acid (pH 5.6); clear wavy boundary
Bw—3 to 6 inches (8 to 15 cm); olive brown (2.5Y 4/4) and olive gray (5Y 4/2) very fine sandy loam; structureless; friable, slightly sticky and slightly plastic; few very fine to coarse roots; common medium prominent dark yellowish brown (10YR 4/6) redoximorphic concentrations; slightly acid (pH 6.4); gradual smooth boundary
BC—6 to 10 inches (15 to 25 cm); dark grayish brown (2.5Y 4/2) stratified very fine sandy loam and fine sand; structureless; friable, slightly sticky and slightly plastic; few medium distinct dark gray (5Y 4/1) redoximorphic depletions; neutral (pH 7.0); abrupt smooth boundary
C1—10 to 23 inches (25 to 58 cm); grayish brown (2.5Y 5/2) sand; structureless; loose, nonsticky and nonplastic; neutral; gradual smooth boundary
C2—23 to 32 inches (58 to 81 cm); grayish brown (2.5Y 5/2) stratified sand and loamy fine sand; structureless; loose, nonsticky and nonplastic; slightly alkaline (pH 7.4); gradual smooth boundary
C3—32 to 41 inches (81 to 104 cm); grayish brown (2.5Y 5/2) sand; structureless; loose, nonsticky and nonplastic; 5 percent gravel; slightly alkaline

Typical Pedon Location

Map unit in which located: 361—Jarvis-Chena complex
Location in survey area: UTM zone 6, 495850 m E, 7167750 m N; between the Richardson Highway and Piledriver on Eielson Air Force Base, Alaska; transect 97DS020, hole 6

Range in Characteristics

Organic layer thickness: 0 to 6 inches (0 to 15 cm)
Depth to sand and gravel: 0 to 9 inches (0 to 23 cm)

O horizon:
Color—hue of 7.5YR or 5YR; value moist of 2 or 3; chroma moist of 1 or 2
Texture—moderately or slightly decomposed organic matter
Reaction—strongly to moderately acid

B horizon (where present):
Color—hue of 2.5Y or 5Y; value moist of 3 or 4; chroma moist from 2 to 4

Texture—very fine sandy loam or silt loam
Reaction—moderate to slightly acid

BC horizon (where present):
Color—hue of 2.5Y or 5Y; value moist of 3 or 4; chroma moist from 2 to 4
Texture—stratified, with textures including very fine sandy loam, fine sandy loam, fine sand, and very fine sand
Reaction—moderate to slightly acid

C horizon:
Color—hue of 2.5Y or 5Y; value moist from 3 to 5; chroma moist from 2 to 4
Texture—sand, fine sand, or coarse sand; or very to extremely gravelly sand or coarse sand
Gravel content—0 to 85 percent
Reaction—slightly acid to slightly alkaline

Eielson Series

Classification

Taxonomic class: coarse-loamy, mixed, superactive, nonacid, Aquic Cryofluvents

Setting

Depth class: very deep
Drainage class: somewhat poorly drained
Permeability: moderate
Landforms and positions: floodplains with a high regional groundwater table
Slope range: 0 to 1 percent
Elevation: 500 to 650 feet (152 to 198 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Eielson very fine sandy loam—on a 1 percent slope at 420 feet (128 m) elevation, under white spruce forest

Oi—0 to 3 inches (0 to 8 cm); very dark brown (10YR 2/2) fibric material; slightly decomposed moss, leaves, twigs, and other woody debris; common very fine to coarse roots; slightly acid (pH 6.4); abrupt smooth boundary
C—3 to 5 inches (8 to 13 cm); dark grayish brown (2.5Y 4/2) silt loam; structureless; very friable, slightly sticky and slightly plastic; few very fine and fine roots; slightly acid (pH 6.4); clear smooth boundary
Oeb—5 to 7 inches (13 to 18 cm); very dark brown (10YR 2/2) hemic material; partially decomposed moss and leaves; many very fine to coarse roots; slightly acid (pH 6.4); clear smooth boundary
Bw—7 to 9 inches (18 to 23 cm); dark brown (10YR 3/3) very fine sandy loam; weak coarse platy structure; friable, slightly sticky and slightly plastic; common very fine and fine roots; common medium distinct dark grayish brown (2.5Y 4/2) redoximorphic depletions; slightly acid (pH 6.4); gradual smooth boundary
BC—9 to 28 inches (23 to 71 cm); dark olive brown (2.5Y 3/3) very fine sandy loam; weak

medium platy structure; friable, slightly sticky and slightly plastic; few very fine and fine roots; common medium distinct dark gray (2.5Y 4/1) redoximorphic depletions; neutral (pH 6.8); horizon contains thin (less than 0.5 inch [1 cm]) buried O horizons at 13 and 24 inches (32 and 60 cm) depth; diffuse smooth boundary

C'—28 to 65 inches (71 to 165 cm); olive brown (2.5Y 4/4) and dark gray (2.5Y 4/1) stratified very fine sandy loam and sand; massive; firm, slightly sticky and slightly plastic; common fine prominent dark yellowish brown (10YR 4/6) redoximorphic concentrations; neutral (pH 7.0); abrupt smooth boundary

Cg—65 to 69 inches (165 to 175 cm); very dark gray (10YR 3/1) silt loam; massive; firm, slightly sticky and slightly plastic; neutral (pH 6.8)

Typical Pedon Location

Map unit in which located: 64—Eielson-Tanana complex, in the Ft. Wainwright Soil Survey Area

Location in survey area: UTM zone 6, 452704 m N, 7179644 m E; near the western end of Salchaket Slough, southeast of Fairbanks, Alaska; transect 97DS096, hole 4

Range in Characteristics

Organic layer thickness: 1 to 6 inches (3 to 15 cm)
Note: thin buried organic horizons may occur throughout the profile

O horizon:
Color—hue of 10YR or 7.5YR; value moist from 2 to 5; chroma moist from 1 to 4
Texture—slightly decomposed
Reaction—strongly acid to neutral

C horizon:
Color—hue of 2.5Y or 5Y; value moist from 3 to 6; chroma moist of 2 or 3
Texture—stratified, with textures including very fine sandy loam, silt loam, and fine sandy loam
Reaction—slightly acid to neutral

Buried O horizon:
Color—hue of 10YR; value moist of 2; chroma moist of 1 or 2
Texture—slightly to strongly decomposed
Reaction—slightly acid to neutral

Bw horizon:
Color—hue of 10YR or 2.5Y; value moist from 3 to 6; chroma moist from 2 to 4
Texture—stratified, with textures including silt loam, very fine sandy loam, and fine sandy loam
Reaction—slightly acid to slightly alkaline

C' horizon:
Color—hue of 2.5Y or 5Y; value moist from 3 to 6; chroma moist of 2 or 3
Texture—stratified, with textures including very fine sandy loam, silt loam, fine sandy loam, loamy fine sand, fine sand, loamy sand, and coarse sand
Coarse fragments—0 to 35 percent
Reaction—slightly acid to slightly alkaline

Cg horizon:
Color—hues of 10YR, 2.5Y, and N; value moist from 3 to 6; chroma moist of 1 or 2
Texture—stratified, with textures including very fine sandy loam, silt loam, fine sandy loam, loamy fine sand, fine sand, loamy sand, and coarse sand

Coarse fragments—0 to 35 percent
Reaction—slightly acid to slightly alkaline

Fairbanks Series

Classification

Taxonomic class: coarse-silty, mixed, superactive, Typic Eutrocryepts

Setting

Depth class: deep and very deep
Drainage class: well drained
Permeability: moderate
Landforms and positions: loess mantled hills in unglaciated uplands
Slope range: 0 to 50 percent
Elevation: 575 to 1060 feet (175 to 323 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Fairbanks silt loam—on a 14 percent slope at 985 feet (300 m) elevation, under white spruce, paper birch, and quaking aspen forest

Oi—0 to 3 inches (0 to 8 cm); slightly decomposed forest litter
A—3 to 9 inches (8 to 23 cm); very dark grayish brown (2.5Y 3/2) silt loam; weak medium platy structure parting to weak medium granular; very friable, nonsticky and nonplastic; many fine and very fine, and common medium and coarse roots; moderately acid (pH 5.8); clear wavy boundary
Bw—9 to 30 inches (23 to 76 cm); light olive brown (2.5Y 5/4) silt loam; moderate medium platy structure; very friable, nonsticky and nonplastic; few fine and very fine roots; few fine prominent brown (7.5YR 4/4) redoximorphic concentrations; slightly acid (pH 5.8); clear smooth boundary
BC—30 to 60 inches (76 to 152 cm); grayish brown (2.5Y 5/2) silt loam; weak medium platy structure; very friable, nonsticky and nonplastic; few fine and medium roots; few fine prominent brown (7.5YR 5/4) redoximorphic concentrations; slightly acid (pH 6.4); gradual smooth boundary
C—60 to 71 inches (152 to 180 cm); light olive brown (2.5Y 5/3) silt loam; structureless; very friable, nonsticky and nonplastic; common coarse prominent yellowish brown (10YR 5/6) redoximorphic concentrations; slightly acid (pH 6.7)

Typical Pedon Location

Map unit in which located: 42E—Fairbanks silt loam, 12 to 20 percent slopes, in the adjacent Fairbanks Soil Survey Area
Location in survey area: T.1N, R.3E, W 1/2 of Section 28; northwest of Two Rivers, Alaska; transect 97DM107, hole 8

Range in Characteristics

Thickness of silty loess mantle: 40 inches to many feet (102 cm to many meters)

Organic layer thickness: 1 to 6 inches (3 to 15 cm)

A horizon:
Color—hue of 7.5YR or 10YR; value moist of 3 or 4; chroma moist from 2 to 4
Texture—silt loam
Reaction—moderately acid to neutral

Bw horizon:
Color—hues from 7.5YR to 2.5Y; value moist from 3 to 5; chroma moist from 2 to 4
Texture—silt loam
Reaction—moderately acid to neutral

C horizon:
Color—hues from 10YR to 5Y; value moist from 4 to 6; chroma moist from 2 to 4
Texture—silt loam
Reaction—moderately acid to neutral

Fubar Series

Classification

Taxonomic class: sandy-skeletal, mixed, Typic Cryofluvents

Setting

Depth class: very shallow over sand and gravel
Drainage class: moderately well drained
Permeability: moderate in the loamy surface soil; rapid in the sand and gravel
Landforms and positions: floodplains and stream terraces
Parent material: alluvium
Slope range: 0 to 2 percent
Elevation: 400 to 600 feet (122 to 183 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Fubar silt loam—on a level plain at 460 feet (140 m) elevation, under white spruce forest with alder understory

Oi—0 to 2 inches (0 to 5 cm); black (7.5YR 2.5/1) slightly decomposed forest litter; abrupt smooth boundary
Oe—2 to 4 inches (5 to 10 cm); dark brown (7.5YR 3/2) partially decomposed forest litter; common fine to medium roots; abrupt smooth boundary
C1—4 to 8 inches (10 to 20 cm); grayish brown (2.5Y 5/2) silt loam, few fine distinct light yellowish brown (10YR 6/4); common medium granular structure; very friable, slightly sticky and slightly plastic; common medium and fine roots; slightly alkaline (pH 7.6); abrupt smooth boundary
Oeb—8 to 10 inches (20 to 25 cm); black (7.5YR 2.5/1) mucky peat; common medium and few fine roots; slightly alkaline (pH 7.6); abrupt smooth boundary
2C1—10 to 52 inches (25 to 132 cm); dark grayish brown (2.5Y 4/2) stratified sand and fine sand; structureless; loose, nonsticky and nonplastic; slightly alkaline (pH 7.4); abrupt

smooth boundary
2Oeb—52 to 55 inches (132 to 140 cm); very dark brown (7.5YR 2.5/2) mucky peat; slightly acid (pH 6.4); abrupt smooth boundary
2C2—55 to 71 inches (140 to 180 cm); very dark gray (2.5Y 3/1) very gravelly loamy fine sand; structureless; loose, nonsticky and nonplastic; neutral (pH 7.0)

Typical Pedon Location

Map unit in which located: 31—Eielson-Piledriver complex, occasionally flooded, in the Ft. Wainwright Soil Survey Area
Location in survey area: T.1S, R.2E, S 1/2 of Section 32; near the Tanana River on Ft. Wainwright contonement area, Alaska; transect 97MM046, hole 1

Range in Characteristics

Organic layer thickness: 0 to 4 inches (0 to 10 cm)
Thickness of the loamy surface layer: 1 to 10 inches (3 to 25 cm)

O horizon:
Color—hue of 10YR, 7.5YR, or 5YR; value moist of 2 or 3; chroma moist of 1 or 2
Texture—moderately or slightly decomposed organic matter
Reaction—strongly to slightly acid

C horizon:
Color—hue of 2.5Y or 5Y; value moist from 3 to 5; chroma moist of 2 or 3
Texture—silt loam or very fine sandy loam; or stratified, with textures including silt loam, very fine sandy loam, loamy fine sand, and fine sand
Gravel content—0 to 15 percent
Reaction—slightly acid to slightly alkaline

2C horizon:
Color—variegated, or hue of 2.5Y or 5Y; value moist from 3 to 5; chroma moist from 1 to 3
Texture—sand, fine sand, coarse sand or very to extremely gravelly sand or coarse sand
Gravel content—0 to 85 percent
Reaction—slightly acid to slightly alkaline

Gilmore Series

Classification

Taxonomic class: loamy-skeletal, mixed, superactive, shallow, Typic Dystrocryepts

Setting

Depth class: very shallow and shallow over weathered bedrock
Drainage class: well drained
Permeability: moderate
Landforms and positions: hill crests and slopes.
Slope range: 0 to 60 percent
Elevation: 575 to 1060 feet (175 to 323 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Gilmore silt loam—on a 15 percent slope at 1082 feet (330 m) elevation, under white spruce, paper birch, and quaking aspen forest

Oi—0 to 3 inches (0 to 8 cm); partially decomposed forest litter and moss; many roots; mycelia; medium acid (pH 5.8); abrupt smooth boundary; thickness of the O horizon—2 to 4 inches (5 to 11 cm)
A—3 to 6 inches (8 to 15 cm); dark brown (10YR 3/3) silt loam; weak fine granular structure; very friable, nonsticky and nonplastic; many roots; medium acid (pH 5.8); abrupt wavy boundary
Bw—6 to 13 inches (15 to 33 cm); dark yellowish brown (10YR 4/3) silt loam; moderate medium platy structure; very friable, nonsticky and nonplastic; few roots; medium acid (pH 5.8); clear smooth boundary
BC—13 to 16 inches (33 to 41 cm); olive brown (2.5Y 4/3) channery silt loam; structureless; 20 percent schist channers, 2 percent schist flags; slightly acid (pH 6.3); gradual wavy boundary
2Cr—16 inches (41 cm); weathered fractured schist bedrock

Typical Pedon Location

Map unit in which located: 45D—Gilmore silt loam, 12 to 20 percent slopes, in the adjacent Fairbanks Soil Survey Area
Location in survey area: T.1N, R.3E, SW 1/4 of the NW 1/4 of Section 24; northwest of Two Rivers, Alaska; transect 97DM004, hole 2

Range in Characteristics

Thickness of silty loess mantle: 20 inches or less (51 cm or less)
Organic layer thickness: 2 to 4 inches (5 to 10 cm)
Depth to unconsolidated bedrock: 20 inches or less (51 cm or less).
Coarse fragment content: 35 to 75 percent; coarse fragments are dominantly schist channers

A horizon:
Color—hue of 7.5YR or 10YR; value moist from 3 to 5; chroma moist from 2 to 4
Texture—silt loam
Reaction—strongly acid to slightly acid

B horizon:
Color—hues from 7.5YR to 2.5Y; value moist from 3 to 5; chroma moist from 3 to 6
Texture—silt loam
Reaction—strongly acid to slightly acid

BC horizon (where present):
Color—hue of 10YR or 2.5Y; value moist from 3 to 5; chroma moist from 3 to 6
Texture—channery to extremely channery silt loam to sandy loam
Coarse fragments— 35 to 75 percent
Channer content—35 to 75 percent
Flagstone content—0 to 15 percent
Reaction—strongly acid to slightly acid

2Cr horizon:
Color—hues from 10YR to 5Y; value moist from 4 to 6; chroma moist from 3 to 6
Texture—extremely channery loam to weathered fractured bedrock

Coarse fragments—60 to 100 percent
Channer content—60 to 100 percent
Flagstone content—10 to 15 percent

Goldstream Series

Classification

Taxonomic class: coarse-silty, mixed, superactive, subgelic, Typic Histoturbels

Setting

Depth class: shallow to moderately deep over permafrost
Drainage class: very poorly drained
Permeability: moderately rapid in the organic mat; moderate in the mineral layers above the permafrost; impermeable in the permafrost
Landforms and positions: bottoms and footslopes of upland drainageways
Slope range: 0 to 20 percent
Elevation: 400 to 900 feet (122 to 274 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28ºF (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Goldstream peat—on a 4 percent slope at 625 feet (191 m) elevation, under stunted black spruce with low shrubs, sedge tussocks, and moss

Oi—0 to 3 inches (0 to 8 cm); dark brown (7.5YR 3/2) peat consisting of decomposing plant matter and living roots; extremely acid (pH 4.4); clear smooth boundary
Oe—3 to 9 inches (8 to 23 cm); black (10YR 2/1) moderately decomposed organic matter; extremely acid (pH 4.4); clear smooth boundary
A—9 to 11 inches (23 to 28 cm); very dark grayish brown (2.5Y 3/2) mucky silt loam; massive; friable, nonsticky and nonplastic; many roots; very strongly acid (pH 4.7); gradual irregular boundary
Bjjg/A—11 to 20 inches (28 to 51 cm); gray (5Y 5/1) silt loam (Bjjg), and very dark grayish brown (2.5Y 3/2) mucky silt loam (A); structureless; friable, nonsticky and nonplastic; very strongly acid (pH 4.9); clear irregular boundary
Cfm—20 to 27 inches (51 to 69 cm); gray (5Y 5/1) silt loam; frozen

Typical Pedon Location

Map unit in which located: 21B—Goldstream peat, 3 to 7 percent slopes, in the adjacent Fairbanks Soil Survey Area
Location in survey area: T.1N, R.3E, NE 1/4 of the NW 1/4 of Section 11; Little Chena River valley north of Chena Hot Springs Road; transect 97DM108, hole 2

Range in Characteristics

Organic layer thickness: 8 to 16 inches (20 to 41 cm)
Depth to frozen soil (July-August): 14 to 24 inches (36 to 61 cm)

O horizon:

Color—hues from 10YR to 5Y; value moist from 2 to 4; chroma moist from 1 to 3
Texture—peat or mucky peat
Reaction—extremely to very strongly acid

A horizon:
Color—hues from 10YR to 5Y; value moist from 2 to 4; chroma moist from 1 to 3
Texture—silt loam or mucky silt loam
Reaction—very strongly to strongly acid

Bjjg/A horizon:
Color—hues from 10YR to 5Y and N; value moist from 4 to 6; chroma moist from 0 to 2
Texture—silt loam
Reaction—very strongly to strongly acid

Cfm horizon:
Color—hues from 10YR to 5Y and N; value moist from 3 to 6; chroma moist from 0 to 3
Texture—silt loam
Reaction—very strongly to strongly acid

Histels

Classification

Taxonomic class: Histels

Setting

Depth class: shallow to moderately deep over permafrost
Drainage class: very poorly drained
Permeability: rapid in the fibric organic materials; slow in the sapric organic materials; impermeable in the frozen soil
Landforms and positions: floodplains and terraces
Parent material: organic matter over alluvium
Slope range: 0 to 2 percent
Elevation: 400 to 650 feet (122 to 198 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Representative Pedon Description

Terric Hemistel—on a level slope at 426 feet (130 m) elevation, under birch scrub

Oe—0 to 17 inches (0 to 43 cm); black (10YR 2/1) mucky peat; many very fine and fine roots; moderately acid (pH 5.8); gradual smooth boundary
Oa—17 to 25 inches (43 to 64 cm); very dark brown (10YR 2/2) muck; moderately acid (pH 6.0); abrupt smooth boundary
Oaf—25 to 29 inches (64 to 74 cm); very dark brown (10YR 2/2) muck; slightly acid (pH 6.4); clear broken boundary
Cgf—29 to 39 inches (74 to 99 cm); very dark gray (10YR 3/1) silt loam; slightly acid (pH 6.4)

Representative Pedon Location

Map unit in which located: 26—Histels, Terric and Mosquito peat, in the Ft. Wainwright Soil Survey Area.
Location in survey area: UTM zone 6, 461983 m N, 7183017 m E; between the Tanana River and Salchaket Slough south of Fairbanks, Alaska; transect 97DS220B, hole 5

Range in Characteristics

Depth to frozen soil (July-August): 16 to 35 inches (41 to 89 cm)
Organic layer thickness: 16 to 39 inches (41 to 99 cm)
Note: particle-size class of mineral layers is coarse-silty

O horizon:
Color—hue of 5YR, 7.5YR, or 10YR; value moist from 2 to 5; chroma moist from 1 to 6
Texture—peat, mucky peat, or muck
Coarse fragments—0 percent
Reaction—extremely acid to moderately acid

Cg horizon:
Color—hue of 2.5Y or 10YR; value moist of 3 or 4; chroma moist of 1 or 2
Texture—silt loam, mucky silt loam, silty clay loam, or stratified silt loam and loamy fine sand
Coarse fragments—0 percent
Reaction—moderately acid to slightly acid

Histic Cryaquepts

Classification

Taxonomic class: Histic Cryaquepts

Setting

Depth class: very deep—more than 60 inches (more than 152 cm)
Drainage class: poorly drained
Permeability: moderate in the loamy surface materials
Landforms and positions: depressions on terraces
Parent material: organic matter over loess or loess reworked by water
Slope range: 0 to 2 percent
Elevation: 500 to 650 feet (152 to 198 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28ºF (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Representative Pedon Description

Histic Cryaquept—on a level slope at 585 feet (178 m) elevation, under sedges

Oa—0 to 13 inches (0 to 33 cm); very dark brown (7.5YR 2.5/2) muck; many very fine and fine roots; very strongly acid (pH 5.0); abrupt smooth boundary
C—13 to 30 inches (33 to 76 cm); olive brown (2.5Y 4/3) silt loam; common medium distinct grayish brown (2.5Y 5/2) mottles; structureless; friable, slightly sticky and slightly plastic;

strongly acid (pH 5.4); gradual smooth boundary
Cg—30 to 59 inches (76 to 150 cm); dark grayish brown (2.5Y 4/2) silt loam; many medium prominent strong brown (7.5YR 4/6) mottles; structureless; friable, slightly sticky and slightly plastic; moderately acid (pH 5.6)

Representative Pedon Location

Map unit in which located: WAH—Typic Cryaquent, Terric Cryofibrist, and Histic Cryaquept soils
Location in survey area: UTM zone 6, 498818 m N, 7173649 m E; northeast corner of Eielson Air Force Base; transect 97DS258, hole 2

Range in Characteristics

Organic layer thickness: 8 to 16 inches (20 to 41 cm)
Note: particle-size class is coarse-silty

O Horizon:
Color—hue of 7.5YR or 10YR; value moist of 2 or 3; chroma moist from 1 to 3
Texture—mucky peat or muck
Coarse fragments—0 percent
Reaction—very strongly acid to moderately acid

C horizon:
Color—hue of 2.5Y; value moist of 3 or 4; chroma moist from 2 to 4
Texture—silt loam or very fine sandy loam
Coarse fragments—0 percent
Reaction—strongly acid to moderately acid

Cg horizon:
Color—hue of 5Y or 2.5Y; value moist of 3 or 4; chroma moist of 1 or 2
Texture—silt loam or stratified silt loam and very fine sand
Coarse fragments—0 percent
Reaction—strongly acid to slightly acid

Jarvis Series

Classification

Taxonomic class: coarse loamy over sandy or sandy skeletal, mixed, superactive, nonacid, Typic Cryofluvents

Setting

Depth class: moderately deep to sand and gravel
Drainage class: well drained

Permeability: moderate in the loamy upper part; rapid to excessive in the underlying sand and gravel
Landforms and positions: floodplains
Parent material: alluvium
Slope range: 0 to1 percent
Elevation: 400 to 600 feet (122 to 183 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)

*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Jarvis very fine sandy loam—on a 0 percent slope at 545 feet (166 m) elevation, under paper birch and white spruce forest

Oe/C—0 to 3 inches (0 to 8 cm); black (10YR 2/1) and dark grayish brown (2.5Y 4/2) peat; common very fine to coarse roots; moderately acid (pH 5.6); clear wavy boundary
Bw—3 to 6 inches (8 to 15 cm); olive brown (2.5Y 4/3) and olive gray (5Y 5/2) very fine sandy loam; structureless; very friable, nonsticky and nonplastic; few very fine to medium roots; common medium distinct dark yellowish brown (10YR 4/6) redoximorphic concentrations; slightly acid (pH 6.4); clear wavy boundary
BC—6 to 16 inches (15 to 41 cm); grayish brown (2.5Y 5/2) and dark yellowish brown (10YR 4/6) stratified fine sand and very fine sand; structureless; very friable, nonsticky and nonplastic; few very fine to medium roots; few medium prominent gray (5Y 6/1) redoximorphic depletions; neutral (pH 7.2); gradual smooth boundary
C1—16 to 24 inches (41 to 61 cm); grayish brown (2.5Y 5/2) stratified very fine sandy loam and fine sand; structureless; very friable, nonsticky and nonplastic; few very fine to fine roots; slightly alkaline (pH 7.4); abrupt smooth boundary
C2—24 to 51 inches (61 to 130 cm); gray (5Y 5/1) sand; structureless; loose, nonsticky and nonplastic; 10 percent gravel; slightly acid (pH 6.4)

Typical Pedon Location

Map unit in which located: 361—Jarvis-Chena complex, 0 to 1 percent slopes
Location in survey area: UTM zone 6, 495247 m E, 7168290 m N; between the Richardson Highway and Piledriver Slough, near the southwest boundary of Eielson Air Force Base, Alaska; transect 97DS026, hole 17

Range in Characteristics

Organic layer thickness: 1 to 4 inches (3 to 10 cm)
Depth to sand and gravel: 13 to 40 inches (33 to 102 cm)
Note: organic carbon decreases irregularly with depth; thin buried organic horizons may occur throughout the profile

Oe/C horizon (C material may not be present):
Color—O material: hue of 7.5YR or 10YR; value moist of 2, 2.5, or 3; chroma moist of 1 or 2—C material: hue of 2.5Y or 5Y; value moist from 3 to 5; chroma moist of 1 or 2
Texture—moderately decomposed and slightly decomposed forest litter, mixed in some pedons with very fine sandy loam or silt loam
Reaction—very strongly acid to neutral

Bw horizon:
Color—hue of 10YR, 2.5Y, or 5Y; value moist of 4 or 5; chroma moist of 2 or 3
Texture—very fine sandy loam; or stratified, with textures from fine sand to silt loam
Reaction—slightly acid to neutral

BC horizon:
Color—hue of 2.5Y; value moist of 4 or 5; chroma moist of 2 or 3
Texture—stratified, with textures including very fine sand, fine sand, gravelly sand, very fine sandy loam, and silt loam
Reaction—neutral to slightly alkaline

C horizon:
Color—hue of 2.5Y or 5Y; value moist of 4 or 5; chroma moist of 1 or 2
Texture—sand, fine sand, or loamy sand; or stratified, with textures including loamy fine sand, fine sand, sand, gravelly sand, very gravelly sand, or extremely gravelly sand
Gravel content—0 to 70 percent
Reaction—slightly acid to slightly alkaline

Minto Series

Classification

Taxonomic class: coarse-silty, mixed, superactive, Aquic Eutrocryepts

Setting

Depth class: very deep
Drainage class: moderately well drained
Permeability: moderate
Landforms and positions: footslopes of hills
Slope range: 0 to 20 percent
Elevation: 575 to 1060 feet (175 to 323 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Minto silt loam—on a 7 percent slope at 820 feet (250 m) elevation, under paper birch and white spruce forest

Oi—0 to 5 inches (0 to 13 cm); dark brown (7.5YR 3/2) fibric material; slightly decomposed leaves, twigs, and moss; few fine and medium roots; strongly to very strongly acid; abrupt smooth boundary
A—5 to 9 inches (13 to 23 cm); very dark grayish brown (10YR 3/2) silt loam; moderate medium platy structure; friable, nonsticky and nonplastic; few fine and medium roots; moderately to slightly acid; clear smooth boundary
Bw—9 to 16 inches (23 to 41 cm); light olive brown (2.5Y 5/3) silt loam; moderate medium platy structure; friable, nonsticky and nonplastic; few fine roots; common medium faint grayish brown (2.5Y 5/2) redoximorphic depletions; moderately acid; diffuse wavy boundary
C—16 to 70 inches (41 to 178 cm); grayish brown (2.5Y 5/2) silt loam; massive; friable, nonsticky and nonplastic; common medium prominent brown (7.5YR 4/4) redoximorphic concentrations; slightly acid to neutral

Typical Pedon Location

Map unit in which located: 41B—Minto silt loam, 3 to 7 percent slopes, in the Fairbanks Soil Survey Area
Location in survey area: UTM zone 6, 496550 m E, 7196300 m N; near Two Rivers, Alaska; transect 97DM002, hole 2

Range in Characteristics

Thickness of the silty surface layer: more than 60 inches (more than 152 cm)
Organic layer thickness: 2 to 6 inches (5 to 15 cm)

O horizon:
Color—hue of 10YR or 7.5YR; value moist of 2 or 3; chroma moist of 1 or 2
Texture—peat or mucky peat
Reaction—very strongly acid to strongly acid

A horizon:
Color—hue of 10YR; value moist of 2 or 3; chroma moist of 1 or 2
Texture—silt loam or very fine sandy loam
Reaction—moderately acid to slightly acid

B horizon:
Color—hue of 10YR, 7.5YR, or 2.5Y; value moist from 3 to 5; chroma moist from 2 to 5
Texture—silt loam or very fine sandy loam
Reaction—slightly acid to slightly alkaline

C horizon:
Color—hue of 2.5Y or 5Y; value moist from 3 to 6; chroma moist of 2 or 3
Texture—silt loam or very fine sandy loam
Reaction—slightly acid to neutral

Mosquito Series

Classification

Taxonomic class: coarse-loamy, mixed, superactive, subgelic, Ruptic Histoturbels

Setting

Depth class: shallow to moderately deep over permafrost
Drainage class: very poorly drained
Permeability: rapid in the surface peat; moderate in the loamy mineral soils; impermeable in the frozen soil
Landforms and positions: floodplains and terraces
Parent materials: alluvium
Slope range: 0 to 2 percent
Elevation: 400 to 500 feet (122 to 152 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Mosquito peat—on a level plain at 432 feet (132 m) elevation, under dwarf birch and sedge vegetation

Oi—0 to 6 inches (0 to 15 cm); black (7.5YR 2.5/1) peat; common very fine and few fine and medium roots; moderately acid (pH 6.0); clear wavy boundary; thickness of horizon varies from 6 to 12 inches (15 to 30 cm)

Oe—6 to 10 inches (15 to 25 cm); black (7.5YR 2.5/1) mucky peat; common very fine and few fine roots; moderately acid (pH 6.0); clear wavy boundary; thickness of horizon varies from 3 to 10 inches (8 to 25 cm)
Bg1—10 to 13 inches (25 to 33 cm); dark gray (5Y 4/1) silt loam; structureless; friable, nonsticky and nonplastic; few fine roots; few fine distinct yellowish brown (10YR 5/6) mottles; slightly acid (pH 6.4); clear wavy boundary
Bg2—13 to 19 inches (33 to 48 cm); dark grayish brown (10YR 4/2) silt loam; structureless; friable, nonsticky and nonplastic; few very fine roots; moderately acid (pH 6.0); abrupt wavy boundary
Bgfm—19 to 29 inches (48 to 74 cm); dark grayish brown (10YR 4/2) frozen silt loam; structureless; extremely firm, nonsticky and nonplastic; moderately acid (pH 6.0)

Typical Pedon Location

Map unit in which located: 26—Mosquito peat and Histels, Terric, in the Ft. Wainwright Soil Survey Area
Location in survey area: UTM zone 6, 461954 m E, 7179720 m N; south of the Tanana River and south of Salchaket Slough, about 4 miles south of Fairbanks, Alaska; transect 97MM088, hole 5

Range in Characteristics

Organic layer thickness: 9 to 22 inches (23 to 56 cm)
Depth to frozen soil (July-August): 14 to 32 inches (36 to 81 cm)

O horizon:
Color—hue of 5YR, 7.5YR, or 10YR; value moist from 2 to 5; chroma moist from 1 to 3
Texture—peat, mucky peat, or muck
Reaction—strongly to slightly acid

Bg horizon:
Color—hue from 10YR to 5Y; value moist of 4 or 5; chroma moist of 1 or 2
Texture—silt loam or very fine sandy loam; or stratified silt loam to loamy fine sand
Reaction—slightly acid to neutral

Bgfm horizon:
Color—hue of 10YR or 2.5Y; value moist of 4 or 5; chroma moist from 1 to 3
Texture—silt loam or very fine sandy loam; or stratified silt loam to loamy fine sand
Reaction—moderately acid to neutral

North Pole Series

Classification

Taxonomic class: coarse-loamy over sandy or sandy-skeletal, mixed, superactive, nonacid, Aeric Cryaquepts

Setting

Depth class: moderately deep over sand and gravel
Drainage class: poorly drained
Permeability: permeability is restricted by seasonally frozen soil in early summer; when thawed, permeability is moderate in the upper part and rapid in underlying sand and gravel
Landforms and positions: river terraces with high regional groundwater table

Slope range: 0 to 2 percent
Elevation: 500 to 650 feet (152 to 198 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

North Pole very fine sandy loam—on a level plain at 540 feet (165 m) elevation, under tamarack and black spruce forest with Labrador tea understory and moss ground cover

Oi—0 to 4 inches (0 to 10 cm); dark brown (7.5YR 3/2) fibric material; slightly decomposed moss and sedge; common very fine to coarse roots; very strongly acid (pH 4.6); clear smooth boundary
Oa—4 to 7 inches (10 to 18 cm); black (10YR 2/1) sapric material; highly decomposed moss; common fine and very fine roots; moderately acid (pH 5.6); abrupt irregular boundary
Bg1—7 to 23 inches (18 to 58 cm); 60 percent dark yellowish brown (10YR 4/6) and 40 percent dark gray (5Y 4/1) stratified fine sand and very fine sand; structureless; friable, nonsticky and nonplastic; few fine and very fine roots; slightly acid (pH 6.4); gradual smooth boundary
Bg2—23 to 32 inches (58 to 81 cm); very dark gray (5Y 3/1) silt loam; structureless; firm, slightly sticky and slightly plastic; neutral (pH 7.2); gradual smooth boundary
2C—32 to 51 inches (81 to 130 cm); grayish brown (2.5Y 5/2) very gravelly sand; single grain; loose, nonsticky and nonplastic; 60 percent rounded gravel; slightly alkaline (pH 7.4)

Typical Pedon Location

Map unit in which located: 35—North Pole very fine sandy loam
Location in survey area: UTM zone 6, 497896 m E, 7169850 m N; on Eielson Air force Base; transect 97DS060, hole 8

Range in Characteristics

Thickness of the loamy surface layer: 10 to 40 inches (25 to 102 cm)
Organic layer thickness: 2 to 9 inches (5 to 23 cm)

O horizon:
Color—hue of 10YR or 7.5YR; value moist of 2 or 3; chroma moist of 1 or 2
Texture—material is slightly to strongly decomposed
Reaction—very strongly acid to slightly acid

Bg horizon:
Color—hue of 10YR, 2.5Y or 5Y; value moist from 3 to 5; chroma moist of 1 or 2
Texture—stratified, with textures including very fine sandy loam, silt loam, loamy very fine sand, and loamy fine sand
Reaction—slightly acid to neutral

2C horizon:
Color—variegated, or hues of 2.5Y and 5Y; value moist from 3 to 5; chroma moist of 2 or 3
Texture—sand or loamy sand; or gravelly to extremely gravelly sand
Coarse fragments—0 to 70 percent
Gravel content—0 to 70 percent

Cobble content— 0 to 15 percent
Reaction—neutral to slightly alkaline

Peede Series

Classification

Taxonomic class: coarse-silty, mixed, superactive, nonacid, Typic Cryaquents

Setting

Depth class: deep
Drainage class: very poorly drained
Permeability: moderate
Landforms and positions: depressions on floodplains
Slope range: 0 to 2 percent
Elevation: 500 to 650 feet (152 to 198 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Peede silt loam—in a level depression at 420 feet (128 m) elevation, under grass and sedge vegetation with some willow shrubs

Oe—0 to 5 inches (0 to 13 cm); very dark brown (7.5YR 2.5/2) hemic material; moderately decomposed sedge and grass blades; few fine and very fine roots; slightly acid (pH 6.1); abrupt smooth boundary
Cg1—5 to 40 inches (13 to 102 cm); dark gray (2.5Y 4/1) silt loam; structureless; friable, slightly sticky and slightly plastic; common very fine and fine roots; common fine distinct light olive brown (2.5Y 5/6) redoximorphic concentrations; neutral (pH 6.6); diffuse smooth boundary
Cg2—40 to 55 inches (102 to 140 cm); dark greenish gray (4/5GY) very fine sandy loam; structureless; friable, nonsticky and nonplastic; few very fine roots; common medium distinct olive (5Y 4/4) redoximorphic concentrations; neutral (pH 6.6); abrupt smooth boundary
Oeb—55 to 59 inches (140 to 150 cm); black (10YR 2/1) hemic material; moderately decomposed organic material; very friable, nonsticky and nonplastic; neutral (pH 7.0); abrupt smooth boundary
Ab—59 to 70 inches (150 to 178 cm); dark olive gray (5Y 3/2) fine sand; structureless; loose, nonsticky and nonplastic; slightly alkaline (pH 7.6)

Typical Pedon Location

Map unit in which located: 62—Peede-Mosquito complex, in the Ft. Wainwright Soil Survey Area
Location in survey area: UTM zone 6, 454481 m E, 7180007 m N; near the east end of Salchaket Slough, southeast of Fairbanks, Alaska; transect 97MM040, hole 3

Range in Characteristics

Organic layer thickness: 1 to 5 inches (3 to 13 cm)

Note: buried organic layers may occur at any depth

O horizon:
Color—hue of 10YR or 7.5YR; value moist of 2 or 3; chroma moist from 1 to 3
Texture—hemic or sapric material
Reaction—slightly acid to neutral

Cg horizon:
Color—hue of 2.5Y, 5Y, 10Y, or 5GY; value moist from 3 to 5; chroma moist of 1 or 2
Texture—silt loam or very fine sandy loam; thin layers of coarser material are occasionally present
Reaction—slightly acid to slightly alkaline

Piledriver Series

Classification

Taxonomic class: coarse-loamy over sandy or sandy-skeletal, mixed, superactive, nonacid, Aquic Cryofluvents

Setting

Depth class: shallow to moderately deep over sand and gravel
Drainage class: somewhat poorly drained
Permeability: moderate in the upper part; rapid in underlying material
Landforms and positions: floodplains and low terraces
Slope range: 0 to 1 percent
Elevation: 400 to 700 feet (122 to 213 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Piledriver very fine sandy loam—on a level plain at 545 feet (166 m) elevation, under paper birch and white spruce forest

Oi—0 to 3 inches (0 to 8 cm); dark brown (7.5YR 3/3) and very dark brown (7.5YR 2.5/2) fibric material; slightly decomposed moss, leaves, twigs, and other woody debris; common fine and few medium roots; extremely acid (pH 4.1); clear wavy boundary
C1—3 to 10 inches (8 to 25 cm); light olive brown (2.5Y 5/3) silt loam; weak medium platy structure parting to weak medium granular; friable, nonsticky and nonplastic; few fine roots; many medium, distinct gray redoximorphic depletions; slightly acid (pH 6.5); abrupt smooth boundary
C2—10 to 15 inches (25 to 38 cm); light olive brown (2.5Y 5/3) silt loam; weak medium platy structure parting to weak medium granular; very friable, nonsticky and nonplastic; few fine roots; common medium distinct dark gray (5Y 4/1) redoximorphic depletions; common black (7.5YR 2.5/1) strata of organic material up to 1 inch (up to 3 cm) thick; neutral (pH 7.2); clear smooth boundary
C3—15 to 33 inches (38 to 84 cm); grayish brown (2.5Y 5/2) loamy fine sand; weak fine platy structure; very friable, nonsticky and nonplastic; common medium faint gray (2.5Y 5/1) redoximorphic depletions; neutral (pH 7.3); clear smooth boundary
2C—33 to 45 inches (84 to 114 cm); grayish brown (2.5Y 5/2) extremely gravelly sand;

single grain; loose, nonsticky and nonplastic; 70 percent rounded gravel; neutral (pH 7.3)

Typical Pedon Location

Map unit in which located: 31—Eielson-Piledriver complex, occasionally flooded
Location in survey area: T.3S, R.3E, SW 1/4 of the SW 1/4 of Section 23; near the southeastern border of Eielson Air Force Base; transect 97MM141, hole 5

Range in Characteristics

Thickness of the loamy surface layer: 10 to 40 inches (25 to 102 cm)
Organic layer thickness: 1 to 6 inches (3 to 15 cm)
Note: organic matter content decreases irregularly with depth

O horizon:
Color—hue of 10YR or 7.5YR; value moist of 2, 2.5 or 3; chroma moist from 1 to 3
Reaction—extremely acid to slightly acid

C horizon:
Color—hues of 10YR, 2.5Y, and 5Y; value moist from 3 to 5; chroma moist of 2 or 3
Texture—stratified, with textures including very fine sandy loam, silt loam, loamy very fine sand, and loamy fine sand
Reaction—slightly acid to neutral

2C horizon:
Color—hues of 2.5Y and 5Y; value moist from 3 to 5; chroma moist of 2 or 3
Texture—sand, very gravelly sand, or extremely gravelly sand
Coarse fragments—15 to 70 percent
Gravel content—15 to 70 percent
Cobble content—0 to 10 percent
Stone content—0 percent
Reaction—slightly acid to neutral

Salchaket Series

Classification

Taxonomic class: coarse-loamy, mixed, superactive, nonacid, Typic Cryofluvents

Setting

Depth class: very deep—more than 60 inches (more than 152 cm)
Drainage class: well drained
Permeability: moderate in the loamy soil; rapid in the sand and gravel substratum
Landforms and positions: alluvial flats and natural levees on floodplains
Parent material: alluvium
Slope range: 0 to 1 percent
Elevation: 400 to 700 feet (122 to 213 meters)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Salchaket very fine sandy loam—on a level plain at 545 feet (166 m) elevation, under paper birch and white spruce forest

Oe—0 to 2 inches (0 to 5 cm); dark brown (7.5YR 3/2) mat of partially decomposed forest litter and moss; many very fine to coarse roots; strongly acid (pH 5.2); abrupt wavy boundary

Bw—2 to 10 inches (5 to 25 cm); olive brown (2.5Y 4/3) stratified very fine sandy loam and very fine sand; structureless; very friable, nonsticky and nonplastic; common very fine to coarse roots; common medium faint dark grayish brown (2.5Y 4/2) redoximorphic depletions; slightly alkaline (pH 7.4); gradual smooth boundary

BC—10 to 29 inches (25 to 74 cm); dark grayish brown (2.5Y 4/2) stratified loamy very fine sand and loamy fine sand; structureless; very friable, nonsticky and nonplastic; few fine roots; common medium prominent dark yellowish brown (10YR 4/6) redoximorphic concentrations; slightly alkaline (pH 7.4); gradual smooth boundary

C1—29 to 43 inches (74 to 109 cm); dark grayish brown (2.5Y 4/2) stratified very fine sandy loam and fine sand; structureless; very friable, nonsticky and nonplastic; slightly alkaline (pH 7.4); gradual smooth boundary

C2—43 to 51 inches (109 to 130 cm); dark grayish brown (2.5Y 4/2) stratified fine sand and sand; structureless; very friable, nonsticky and nonplastic; slightly alkaline (pH 7.4); clear smooth boundary

C3—51 to 55 inches (130 to 140 cm); dark grayish brown (2.5Y 4/2) loamy very fine sand; structureless; very friable, nonsticky and nonplastic; common medium prominent dark yellowish brown (10YR 4/6) redoximorphic concentrations; slightly alkaline (pH 7.4); clear smooth boundary

C4—55 to 75 inches (140 to 191 cm); dark grayish brown (2.5Y 4/2) sand; structureless; loose, nonsticky and nonplastic; slightly alkaline (pH 7.4)

Typical Pedon Location

Map unit in which located: 32—Salchaket very fine sandy loam

Location in survey area: T.3S, R.3E, SW 1/4 of the SW 1/4 of Section 14, Fairbanks Meridian; on Eielson Air Force Base between the Richardson Highway and Piledriver Slough; transect 97DS027, hole 2

Range in Characteristics

Thickness of organic mat: 1 to 7 inches (3 to 18 cm)

Note: organic carbon decreases irregularly with depth; thin buried organic horizons may occur throughout the profile

Oe horizon:

Color—hue of 10YR or 7.5YR; value moist of 2 or 3; chroma moist from 2 to 4

Texture—slightly decomposed to moderately decomposed organic matter

Reaction—strongly to slightly acid

Bw horizon:

Color—hue of 2.5Y or 10YR; value moist from 3 to 5; chroma moist of 3 or 4

Texture—stratified, with textures including loamy very fine sand, very fine sand, very fine sandy loam, and silt loam

Reaction—slightly acid to slightly alkaline

BC horizon (where present):

Color—hue of 2.5Y; value moist of 3 or 4; chroma moist from 2 to 4

Texture—stratified, with textures including loamy very fine sand, loamy fine sand, very fine sandy loam, and silt loam

Reaction—slightly acid to slightly alkaline

C horizon:
Color—hue of 5Y or 2.5Y; value moist of 4 or 5; chroma moist of 2 or 3
Texture—stratified, with textures including silt loam, loamy very fine sand, loamy fine sand, and fine sand
Reaction—slightly acid to slightly alkaline

2C horizon:
Color—variegated, or hue of 5Y or 2.5Y; value moist of 4 or 5; chroma moist of 2 or 3
Texture—sand, gravelly sand, very gravelly sand, or extremely gravelly sand
Gravel content—0 to 65 percent
Reaction—slightly acid to slightly alkaline

Saulich Series

Classification

Taxonomic class: coarse silty, mixed, superactive, subgelic, Typic Histoturbels

Setting

Depth class: shallow to moderately deep over permafrost
Drainage class: poorly drained
Permeability: rapid in the fibric organic matter; moderate in the thawed mineral soil; impermeable in the frozen soil
Landforms and positions: middle and lower portions of north-facing slopes
Slope range: 0 to 45 percent
Elevation: 450 to 1200 feet (137 to 366 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Saulich peat—on a 4 percent slope at 510 feet (155 m) elevation, under sparse forest of black spruce with an understory of low shrubs

Oi—0 to 9 inches (0 to 23 cm); very dark brown (7.5YR 2.5/3) mat of undecomposed sphagnum moss and roots; strongly acid (pH 5.2); clear smooth boundary
Oe—9 to 16 inches (23 to 41 cm); black (7.5YR 2.5/1) and dark brown (7.5YR 3/2) mat of moderately decomposed moss; many roots; slightly acid (pH 6.4); abrupt smooth boundary
Bg/Afm—16 to 21 inches (41 to 53 cm); very dark grayish brown (2.5Y 3/2) and black (7.5YR 2.5/1) silt loam; structureless; friable, nonsticky and nonplastic; few roots; few medium prominent light brownish gray (10YR 6/2) redoximorphic depletions; neutral (pH 6.6); gradual boundary
Cfm—21 to 39 inches (53 to 99 cm); dark grayish brown (2.5Y 4/2) silt loam; structureless; many clear ice lenses; few medium prominent light brownish gray (10YR 6/2) redoximorphic depletions; neutral (pH 6.6)

Typical Pedon Location

Map unit in which located: 51B—Saulich peat, 3 to 7 percent slopes, in the Ft. Wainwright Soil Survey Area
Location in survey area: UTM zone 6, 472550 m E, 7192900 m N; Ft. Wainwright contonement area, Alaska; transect 97MM017, hole 1

Range in Characteristics

Thickness of silty loess mantle: more than 40 inches (more than 102 cm)
Organic layer thickness: 8 to 16 inches (20 to 41 cm)
Depth to the frozen soil (July-August): 11 to 18 inches (28 to 46 cm)

O horizon:
Color—hue of 10YR or 7.5YR; value moist from 2 to 4; chroma moist from 1 to 3
Texture—peat or mucky peat
Reaction—extremely acid to slightly acid

A horizon:
Color—hue of 10YR or 7.5YR; value moist of 2 or 3; chroma moist from 1 to 3
Texture—silt loam or mucky silt loam
Reaction—moderately acid to neutral

B horizon:
Color—hue from 10YR to 5Y; value moist from 3 to 5; chroma moist from 1 to 3
Texture—silt loam or very fine sandy loam
Reaction—moderately acid to neutral

C horizon:
Color—hue of 2.5Y or 5Y; value moist from 3 to 5; chroma moist from 1 to 3
Texture—silt loam or very fine sandy loam
Reaction—slightly acid to neutral

Steese Series

Classification

Taxonomic class: coarse-loamy, mixed, superactive, Typic Eutrocryepts

Setting

Depth class: moderately deep over weathered bedrock
Drainage class: well drained
Permeability: moderate
Landforms and positions: slopes and crests of hills
Slope range: 2 to 45 percent
Elevation: 450 to 1400 feet (137 to 427 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Steese silt loam—on an 8 percent slope at 885 feet (270 m) elevation, under paper birch, white spruce, and quaking aspen forest with alder shrubs (All colors are for moist soil.)

Oi—0 to 2 inches (0 to 5 cm); dark brown (7.5YR 3/2) forest litter and moss; many roots; mycelia at base of horizon; charcoal fragments; slightly acid; abrupt smooth boundary
A—2 to 5 inches (5 to 13 cm); brown (10YR 4/3) silt loam; weak fine granular structure; very friable, nonsticky and nonplastic; many roots; common mica flakes; strongly acid (pH 5.3); abrupt wavy boundary
Bw—5 to 20 inches (13 to 51 cm); light olive gray (2.5Y 5/4) silt loam; moderate medium platy structure; very friable, nonsticky and nonplastic; common medium and fine roots; few medium distinct yellowish brown (10YR 5/6) redoximorphic concentrations; few charcoal fragments; many mica flakes; moderately acid (pH 5.8); abrupt wavy boundary
BC—20 to 27 inches (51 to 69 cm); light olive brown (10YR 5/3) silt loam; weak thin platy structure; very friable, nonsticky and nonplastic; common medium prominent yellowish brown (10YR 5/6) redoximorphic concentrations; moderately acid (pH 5.8); clear wavy boundary
2C—27 to 33 inches (69 to 84 cm); light olive brown (2.5Y 5/3) channery silt loam; structureless; very friable; 20 percent schist channers; slightly acid (pH 6.3); clear wavy boundary
2Cr—33 to 35 inches (84 to 89 cm); highly weathered schist bedrock

Typical Pedon Location

Map unit in which located: 44C—Steese silt loam, 7 to 12 percent slopes, in the adjacent Fairbanks Soil Survey Area
Location in survey area: T.1N, R.3E, NW 1/4 of the NW 1/4 of Section 14; Northwest of Two Rivers, Alaska; transect 97DM018, hole 2

Range in Characteristics

Thickness of silty loess mantle: 20 to 40 inches (51 to 102 cm)
Organic layer thickness: 1 to 6 inches (3 to 15 cm)
Depth to unconsolidated bedrock: 20 to 40 inches (51 to 102 cm)
Texture of the control section: silt loam

A horizon:
Color—hue of 7.5YR, 10YR, or 2.5Y; value moist from 2 to 4; chroma moist from 1 to 4
Texture—silt loam
Reaction—strongly acid to slightly acid

Bw horizon:
Color—hue of 7.5YR, 10YR, or 2.5Y; value moist from 3 to 5; chroma moist from 3 to 6
Texture—silt loam
Redoximorphic features—few to common, in shades of yellow and brown
Reaction—strongly acid to slightly acid

C horizon:
Color—hue of 10YR, 2.5Y, or 5Y; value moist from 3 to 6; chroma moist from 1 to 4
Texture—silt loam, very fine sandy loam, and loamy fine sand
Coarse fragments—0 to 40 percent
Gravel content—0 to 40 percent
Flag content—0 to 5 percent
Reaction—strongly acid to slightly acid

Cr horizon:
Fragmental or highly weathered and fractured schist, grading to consolidated bedrock

Tanacross Series

Classification

Taxonomic class: coarse-loamy, mixed, superactive, subgelic, Typic Histoturbels

Setting

Depth class: shallow to moderately deep over permafrost
Drainage class: poorly drained
Permeability: rapid in the slightly decomposed organic matter; moderate in the mineral soil above the permafrost; impermeable in the permafrost
Landforms and positions: alluvial terraces
Parent material: alluvium
Slope range: 0 to 2 percent
Elevation: 400 to 900 feet (122 to 274 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Tanacross peat—on a level plain at 825 feet (251 m) elevation, under black spruce forest

Oi—0 to 9 inches (0 to 23 cm); dark brown (7.5YR 3/2) peat; many very fine to coarse roots; very strongly acid (pH 4.8); clear smooth boundary
OaA—9 to 12 inches (23 to 30 cm); black (7.5YR 2/1) mucky silt loam; few very fine to medium roots; moderately acid (pH 6.0); abrupt irregular boundary
Bg—12 to 20 inches (30 to 51 cm); dark gray (5Y 4/1) and dark yellowish brown (10YR 4/6) stratified sand and silt loam; structureless; friable, slightly sticky and slightly plastic; slightly acid (pH 6.2); abrupt smooth boundary
Bgf—20 to 40 inches (51 to 102 cm); dark gray (5Y 4/1) and dark yellowish brown (10YR 4/6) frozen, stratified sand and silt loam; structureless; extremely firm, slightly sticky and slightly plastic; slightly acid (pH 6.2)

Typical Pedon Location

Map unit in which located: 22—Tanacross peat, in the Ft. Wainwright Soil Survey Area
Location in survey area: UTM zone 6, 485171 m E, 7141080 m N; approximately 35 miles south of Fairbanks, Alaska; transect 97DS049C, hole 7

Range in Characteristics

Organic layer thickness: 8 to 16 inches (20 to 41 cm)
Depth to frozen soil (July-August): 10 to 28 inches (25 to 71 cm)

O horizon:
Color—hue of 5YR, 7.5YR, or 10YR; value moist from 2 to 5; chroma moist from 1 to 6
Texture—peat, mucky peat, or muck
Reaction—extremely to strongly acid

Bg horizon:
Color—hue of 2.5Y, 5Y, or 10YR; value moist of 4 or 5; chroma moist from 1 to 6
Texture—silt loam or stratified silt loam and fine sand or sand.
Reaction—strongly acid to slightly acid

Tanana Series

Classification

Taxonomic class: coarse-loamy, mixed, superactive, subgelic, Typic Aquiturbels

Setting

Depth class: shallow to moderately deep over permafrost
Drainage class: poorly drained
Permeability: rapid in the fibric organic matter; moderate in the mineral soil above the permafrost; impermeable in the frozen soil
Landforms and positions: floodplains and terraces
Slope range: 0 to 2 percent
Elevation: 400 to 900 feet (122 to 274 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Typical Pedon Description

Tanana silt loam—on a 4 percent slope at 459 feet (140 m) elevation, under paper birch and white spruce forest

Oi—0 to 5 inches (0 to 13 cm); very dark brown (10YR 2/2) mat of moss and forest litter; many roots; mycelia; strongly acid; abrupt smooth boundary
A—5 to 8 inches (13 to 20 cm); mixed very dark grayish brown (10YR 3/2) and dark gray (5Y 4/1) silt loam; weak very thin platy structure parting to weak very fine granular; friable, nonsticky and nonplastic; many roots; few small charcoal particles; medium acid; clear smooth boundary
Bg1—8 to 16 inches (20 to 41 cm); dark gray (5Y 4/1) silt loam; weak very thin platy structure parting to weak very fine subangular blocky; friable, nonsticky and nonplastic; many medium distinct mottles of dark brown (7.5YR 4/4); common roots; few small charcoal particles; neutral; clear smooth boundary
Bg2—16 to 26 inches (41 to 66 cm); dark grayish brown (2.5Y 4/2) silt loam; weak very thin platy structure; friable, nonsticky and nonplastic; common medium faint mottles of olive brown (2.5Y 4/4); few roots; mildly alkaline; gradual boundary
C—26 to 29 inches (66 to 74 cm); dark grayish brown (2.5Y 4/2) silt loam, slightly coarser than horizon above; weak very thin platy structure; very friable, nonsticky and nonplastic; few roots; mildly alkaline; abrupt smooth boundary
Cf—29 to 39 inches (74 to 99 cm); dark grayish brown (2.5Y 4/2) silt loam; frozen

Typical Pedon Location

Map unit in which located: 25—Tanana silt loam, 0 to 3 percent slopes, in the adjacent Fairbanks Soil Survey Area
Location in survey area: T.1S, R.2W, NE 1/4 of the SW 1/4 of Section 1, Fairbanks

Meridian; near the intersection of Geist Road and the Parks Highway west of Fairbanks, Alaska

Range in Characteristics

Thickness of the loamy surface layer: more than 40 inches (more than 102 cm)
Organic layer thickness: 2 to 8 inches (5 to 20 cm)
Depth to frozen soil (July-August): 16 to 47 inches (41 to 119 cm)
Note: buried A and O horizons may occur throughout the profile

O horizon:
Color—hue from 5YR to 2.5Y; value moist from 2 to 4; chroma moist of 1 or 2
Texture—organic material is slightly to moderately decomposed
Reaction—strongly acid to slightly acid

A horizon:
Color—hues from 5YR to 2.5Y; value moist from 2 to 4; chroma moist from 1 to 3
Texture—silt loam and very fine sandy loam
Reaction—slightly acid to neutral

Bg or Cg horizon:
Color—hues from 7.5YR to N; value moist from 3 to 5; chroma moist from 0 to 4
Texture—silt loam and very fine sandy loam, with occasional thin lenses of fine sandy loam and fine sand
Reaction—slightly acid to neutral

C horizon:
Color—hues from 10YR to 5Y; value moist from 3 to 5; chroma moist from 1 to 4
Texture—silt loam and very fine sandy loam, with occasional thin lenses of fine sandy loam and fine sand
Coarse fragments—0 to 5 percent
Reaction—slightly acid to neutral

Terric Cryofibrists

Classification

Taxonomic class: Terric Cryofibrists

Setting

Depth class: very deep—more than 60 inches (more than 152 cm)
Drainage class: very poorly drained
Permeability: very rapid in the organic surface materials; moderate in the loamy substratum
Landforms and positions: depressions on floodplains and terraces
Parent material: organic matter over alluvium
Slope range: 0 to 1 percent
Elevation: 400 to 500 feet (122 to 152 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Representative Pedon Description

Terric Cryofibrist—in a level depression at 426 feet (130 m) elevation, under sedges

Oi1—0 to 10 inches (0 to 25 cm); very dark brown (10YR 2/2) peat; many very fine to medium roots; moderately acid (pH 5.8); gradual smooth boundary
COi—10 to 12 inches (25 to 30 cm); very dark gray (10YR 3/1) peaty silt loam; structureless; slightly sticky and slightly plastic; many very fine to medium roots; slightly acid (pH 6.2); gradual smooth boundary
Oi2—12 to 28 inches (30 to 71 cm); very dark brown (10YR 2/2) peat; many very fine to medium roots; slightly acid (pH 6.2); clear smooth boundary
Oa—28 to 40 inches (71 to 102 cm); black (10YR 2/1) muck; slightly acid (pH 6.2); clear smooth boundary
CgOa—40 to 51 inches (102 to 130 cm); black (5Y 2.5/1) mucky silty clay loam; structureless; sticky and plastic; neutral (pH 6.6)

Representative Pedon Location

Map unit in which located: 14—Histels-Terric Cryofibrists complex, in the Ft. Wainwright Soil Survey Area
Location in survey area: UTM zone 6, 456439 m N, 717151 m E; south of Salchaket Slough, south of Fairbanks, Alaska; transect 97DS093, hole 3

Range in Characteristics

Organic layer thickness: 16 to 51 inches (41 to 130 cm)
Note: particle size class of mineral layers is coarse-silty or fine-silty

Oi horizon:
Color—hue of 10YR; value moist of 2 or 3; chroma moist from 1 to 3
Texture—peat
Coarse fragments—0 percent
Reaction—very strongly acid to slightly acid

Oa horizon (where present):
Color—hue of 10YR; value moist of 2 or 3; chroma moist from 1 to 3
Texture—muck
Coarse fragments—0 percent
Reaction—moderately acid to neutral

Cg horizon:
Color—hue of 10Y, 5Y, 2.5Y, 5GY, or N; value moist from 2 to 4; chroma moist from 0 to 2
Texture—silt loam, very fine sandy loam, silty clay loam, or mucky; or peat variants of these textures
Coarse fragments—0 percent
Reaction—moderately acid to neutral

Typic Cryorthents

Classification

Taxonomic class: Typic Cryorthents

Setting

Depth class: deep and very deep
Drainage class: moderately well drained to well drained
Permeability: moderate in the loamy surface horizons; rapid in the coarse-textured substratum
Landforms and positions: floodplains and hills and man-made features
Parent material: loamy fill over alluvium
Slope range: 0 to 70 percent
Elevation: 400 to 600 feet (122 to 183 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Representative Pedon Description

Typic Cryorthent—on a level floodplain at 450 feet (137 m) elevation, under grass lawn

A—0 to 3 inches (0 to 8 cm); very dark grayish brown (10YR 3/2) gravelly loamy very fine sand; weak fine granular structure; very friable, nonsticky and nonplastic; common very fine and fine roots; 25 percent gravel; neutral; clear smooth boundary
C1—3 to 30 inches (8 to 76 cm); light olive brown (2.5Y 5/3) stratified gravelly silt loam, gravelly very fine sandy loam, and gravelly sand; weak fine platy structure; very friable, nonsticky and nonplastic; few very fine roots; 15 percent gravel; neutral; gradual smooth boundary
2C2—30 to 63 inches (76 to 160 cm); light olive brown (2.5Y 5/3) stratified very fine sandy loam and silt loam; weak fine platy structure; friable, nonsticky and nonplastic; few fine faint gray (2.5Y 6/1) redoximorphic depletions; slightly alkaline; abrupt smooth boundary
2C3—63 to 75 inches (160 to 191 cm); light brownish gray (2.5Y 6/2) sand; structureless; loose, nonsticky and nonplastic; slightly alkaline

Representative Pedon Location

Map unit in which located: UC—Urban land-Typic Cryorthents complex, 0 to 1 percent slopes, in the Ft. Wainwright Soil Survey Area
Location in survey area: UTM zone 6, 469107 m E, 7189193 m N; on Ft. Wainwright Army Base, contonement area, Fairbanks, Alaska; transect 97MM098, hole 1

Range in Characteristics

Depth to alluvial material: 20 to more than 60 inches (51 to more than 152 cm)
Note: particle size class is coarse-loamy, loamy-skeletal, or sandy

O horizon (when present):
Color—hue of 7.5YR; value moist of 3; chroma moist of 2
Texture—slightly decomposed organic matter
Reaction—neutral
A horizon (when present):
Color—hue of 10YR; value moist from 2 to 4; chroma moist of 2
Texture—very fine sandy loam, gravelly loamy very fine sand, and very fine sandy loam
Gravel content—0 to 35 percent
Reaction—neutral

C horizon:
Color—hue of 2.5Y; value moist from 3 to 5; chroma moist from 2 to 4
Texture—loamy very fine sand, very fine sandy loam, gravelly and very gravelly loamy sand, and sandy loam
Gravel content—0 to 40 percent
Reaction—neutral to slightly alkaline

2C2 horizon:
Color—hue of 2.5Y; value moist from 3 to 5; chroma moist from 2 to 4
Texture—silt loam and sand; stratified, with textures including very fine sandy loam, loamy very fine sand, very fine sand, fine sand, and silt loam
Gravel content—0 to 10 percent
Reaction—neutral to slightly alkaline

2C3 horizon (when present):
Color—hue of 2.5Y; value moist of 4; chroma moist of 2
Texture—sand, gravelly sand, very gravelly loamy fine sand, or very gravelly sand
Gravel content—0 to 50 percent
Reaction—neutral to slightly alkaline

Typic Cryaquents

Classification

Taxonomic class: Typic Cryaquents

Setting

Depth class: very deep—more than 60 inches (more than 152 cm)
Drainage class: poorly drained
Permeability: moderate in the loamy surface materials; rapid in the sand and gravel
Landforms and positions: floodplains and depressions on terraces
Parent material: alluvium
Slope range: 0 to 2 percent
Elevation: 400 to 500 feet (122 to 152 m)
Climatic data (average annual):
*precipitation—10 to 14 inches (25 to 36 cm)
*air temperature—24° to 28°F (-4° to -2°C)
*growing degree days—1800°F-days, 40°F base temperature (1000°C-days, 4°C base temperature)

Representative Pedon Description

Typic Cryaquent—on a level slope at 417 feet (127 m) elevation, under alder scrub

Oe—0 to 4 inches (0 to 10 cm); black (10YR 2/1) partially decomposed forest litter; many very fine and fine roots; neutral (pH 6.8); abrupt wavy boundary
Cg1—4 to 5 inches (10 to 13 cm); dark gray (2.5Y 4/2 and 2.5Y 4/1) silt loam; many medium distinct olive brown (2.5Y 4/4) mottles; structureless; friable, slightly sticky and slightly plastic; few very fine to medium roots; neutral (pH 7.0); abrupt smooth boundary
Oab—5 to 6 inches (13 to 15 cm); black (7.5YR 2.5/1) muck; few very fine roots; neutral (pH 7.0); abrupt smooth boundary
Cg2—6 to 21 inches (15 to 53 cm); dark gray (2.5Y 4/2 and 2.5Y 4/1) silt loam; many medium distinct olive brown (2.5Y 4/4) mottles; structureless; friable, slightly sticky and slightly plastic; few very fine and fine roots; neutral (pH 7.0); gradual wavy boundary

Cg3—21 to 30 inches (53 to 76 cm); dark gray (5Y 4/1) and olive brown (2.5Y 4/3) silt loam; many medium prominent olive brown (2.5Y 4/4) mottles; structureless; friable, slightly sticky and slightly plastic; neutral (pH 7.0); clear irregular boundary
Oeb—30 to 40 inches (76 to 102 cm); black (10YR 2/1) mucky peat; moderately acid (pH 6.0); abrupt irregular boundary
Cg4—40 to 75 inches (102 to 191 cm); dark gray (5Y 4/1) stratified loamy very fine sand and silt loam; structureless; very friable, nonsticky and nonplastic; slightly acid (pH 6.4)

Representative Pedon Location

Map unit in which located: 65—Typic Cryaquents and Typic Aquaorthels, in the Ft. Wainwright Soil Survey Area
Location in survey area: UTM zone 6, 456828 m N, 7180951 m E; between Salchaket Slough and the Tanana River south of Fairbanks, Alaska; transect 97DS102, hole 4

Range in Characteristics

Thickness of loamy surface layer: 20 to more than 60 inches (51 to more than 152 cm)
Organic layer thickness: 1 to 8 inches (3 to 20 cm)
Note: particle size class is coarse-silty

O Horizon:
Color—hue of 7.5YR or 10YR; value moist of 2 or 3; chroma moist from 1 to 3
Texture—mucky peat or muck
Coarse fragments—0 percent
Reaction—moderately acid to neutral

Cg horizon:
Color—hue of 5Y, 2.5Y, or N; value moist of 3 or 4; chroma moist of 1 or 2
Texture—silt loam, silty clay loam, or stratified silt loam and very fine sand
Coarse fragments—0 percent
Reaction—slightly acid to neutral

2C horizon (where present):
Color—variegated
Texture—sand, very gravelly sand, or fine sand
Coarse fragments—0 to 50 percent
Gravel content—0 to 50 percent
Reaction—slightly acid to neutral

Formation of the Soils

Soil is the unconsolidated mineral and organic material on the surface of the earth that serves as a natural medium for the growth of land plants (*Soil Survey Staff 1975*). Because soil has been subjected to, and influenced by, numerous physical and chemical weathering processes, it differs from the material from which it was derived in many physical, chemical, and morphological properties. Soil formation is controlled by genetic and environmental factors of climate (including temperature and moisture effects), topography, parent material, and living organisms—all acting over a period of time. The influence of any one of these factors varies from place to place, and the interaction of all of them determines the kind of soil that forms (*Jenny 1941*).

The soils of Eielson Air Force Base are weakly developed as a result of the cold climate and youth of the parent materials. Thus, soil properties such as particle size composition and clay mineralogy are largely determined by the properties of the parent material. Parent materials in this area include alluvium, bedrock, and loess. Alluvium consists of stratified fine sand and silt (in some areas mostly silt) underlain at some depth by sandy and gravelly alluvium. The surface alluvium is Holocene in age, and flood deposition still occurs. Loess covers most unflooded surfaces and is many feet thick in the unflooded lowlands. Loess is Pleistocene and Holocene in age, and loess deposition continues at the present. Loess on lower hillslopes has probably been transported and redeposited by slope processes. Schist bedrock of Precambrian age underlies the loess on upper hillslopes (*Péwé et al. 1966*). The bedrock is highly weathered in some places, probably due to hydrothermal activity rather than soil formation.

The major soil-forming processes in the Eielson Area are accumulation of organic matter at the surface, oxidation and reduction of iron, and cryoturbation. Organic matter accumulates on the surface because decomposition cannot keep pace with annual additions of dead plant material. Decomposition is inhibited by cold temperatures and, in many places, by wetness and consequent lack of soil oxygen. All soils except those where floods or humans frequently disturb the surface have some surface organic layer. The thickest accumulations of surface organic matter, several feet or more, occur on the coldest and wettest soils. For example, wet soils in depressions and in areas with permafrost have thick organic surface layers. The warmest and driest soils, which occur on hilltops and sandy and gravelly alluvium, may have only an inch or two of surface organic matter. Surface organic layers that were buried by flood deposits are frequently observed in floodplain soils.

Iron weathers from primary minerals in soils and may be either oxidized or reduced, depending on wetness and consequent availability of oxygen. In dry, well-aerated soils, weathered iron oxidizes to form a reddish Bw horizon. Bw horizons are best developed in the soils of hillslopes, such as Steese and Fairbanks soils, and are weak or absent in the young soils of floodplains, such as Salchaket and Jarvis soils. As a result of the rather dry climate, iron moves very little vertically in the soil, resulting in a lack of E horizons or Spodosols. In the very wettest soils, iron is reduced due to lack of oxygen, resulting in grayish soil colors. More commonly, alternating wet and dry conditions result in mottled reduced (grayish) and oxidized (reddish) zones in the soil.

Cryoturbation, mixing of soil due to freezing and thawing, results in contorted and broken horizons. Cryoturbation occurs mainly in soils with permafrost.

In addition to facilitating cryoturbation, permafrost has other important impacts on soils. Since permafrost is nearly impermeable, water perches near the surface causing

permafrost soils to be wet; runoff is rapid from sloping soils with permafrost. Some permafrost soils contain large amounts of ground ice, and subsidence of the surface can occur if the ground ice melts due to disturbance. Permafrost soils on thick Pleistocene loess deposits (Bolio, Goldstream, Chatanika, Minto, and Histel soils) have the greatest amount of ground ice and hence the greatest risk of thaw subsidence.

The gravel deposits underlying the alluvial plain on Eielson Air Force Base are saturated with groundwater. In many places, the groundwater table is high enough to affect the soil. Piledriver, Eielson, North Pole, and Fubar soils all have groundwater in the middle or lower part of the profile.

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Glossary

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. A body of alluvium, with overflow of water and debris flow deposits, whose surface forms a segment of a cone that radiates downslope from the point where the stream emerges from a narrow valley onto a less sloping surface. Source uplands range in relief and areal extent from mountains to gullied terrains on hillslopes.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Area reclaim. An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Aspect, slope. Direction of maximum pitch on a slope.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	More than 12

Backslope. The geomorphic component that forms the steepest inclined surface and principal element of many hillslopes. Backslopes in profile are commonly steep and linear and descend to a footslope. In terms of gradational process, backslopes are erosional forms produced mainly by mass wasting and running water.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by underlying bedrock.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds the capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation exchange capacity. The total amount of exchangeable cations that can be held in the soil, expressed in terms of milliequivalents per hundred grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Channery soil material. Soil material that is by volume, 15 to 35 percent thin, flat fragments of schist, sandstone, shale, slate, or limestone as much as 6 inches (15 cm) along the longest axis. A single piece is called a channer.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

Coarse fragments. Mineral or rock particles larger than 2 millimeters in diameter.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 cm) in diameter.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 cm) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.

Colluvium. Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose—Noncoherent when dry or moist; does not hold together in a mass.

Friable—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic—Readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky—Adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft—When dry, breaks into powder or individual grains under very slight pressure.

Cemented—Hard; little affected by moistening.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches (25 cm) and 40 or 80 inches (102 or 203 cm).

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

Cryoturbation (frost churning). The mixing of the soil resulting in irregular or broken horizons, organic matter accumulation on the permafrost table, and oriented rock fragments due to frost action.

Cutbanks cave (in tables)**.** The walls of excavations tend to cave in or slough.

Deep soil. A soil that is 40 to 60 inches (102 to 152 cm) deep over bedrock or other material that restricts the penetration of plant roots.

Depth, soil. Generally, the thickness of soil over bedrock. Very deep soils are more than 60 inches (more than 152 cm) deep over bedrock; deep soils, 40 to 60 inches (102 to 152 cm); moderately deep, 20 to 40 inches (51 to 102 cm); shallow, 10 to 20 inches (25 to 51 cm); and very shallow, less than 10 inches (less than 25 cm).

Depth to rock (in tables)**.** Bedrock is too near the surface for the specified use.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden

deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained—These soils have very high and high hydraulic conductivity and a low water-holding capacity. They are not suited to crop production unless irrigated.

Somewhat excessively drained—These soils have high hydraulic conductivity and a low water-holding capacity. Without irrigation, only a narrow range of crops can be grown and yields are low.

Well drained—These soils have an intermediate water-holding capacity. They retain optimum amounts of moisture, but they are not wet close enough to the surface or long enough during the growing season to adversely affect yields.

Moderately well drained—These soils are wet close enough to the surface or long enough that planting or harvesting operations or yields of some field crops are adversely affected unless a drainage system is installed. Moderately well drained soils commonly have a layer with low hydraulic conductivity, a wet layer relatively high in the profile, additions of water by seepage, or some combination of these.

Somewhat poorly drained—These soils are wet close enough to the surface or long enough that planting or harvesting operations or crop growth is markedly restricted unless a drainage system is installed. Somewhat poorly drained soils commonly have a layer with low hydraulic conductivity, a wet layer high in the profile, additions of water through seepage, or a combination of these.

Poorly drained—These soils commonly are so wet at or near the surface during a considerable part of the year that field crops cannot be grown under natural conditions. Poorly drained conditions are caused by a saturated zone, a layer with low hydraulic conductivity, seepage, or a combination of these.

Very poorly drained—These soils are wet to the surface most of the time. The wetness prevents the growth of important crops (except rice) unless a drainage system is installed.

Drainage, surface. Runoff, or surface flow of water, from an area.

Effluent. Solid, liquid, or gas wastes which enter the environment as a by-product of man-made processes. The discharge or outflow of water from ground or sub-surface storage.

Eolian. Of or pertaining to wind.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents, and by such processes as gravitational creep.

Escarpment. A relatively continuous and steep slope or cliff, breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. The term is more often applied to cliffs resulting from differential erosion.

Excess fines (in tables)**.** Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Fast intake (in tables)**.** The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Floodplain. A nearly level alluvial plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is usually a constructional landform built of sediment deposited during overflow and lateral migration of the stream.

Forb. An herbaceous plant with broad leaves, in contrast to narrow-leafed grasses and sedges.

Footslope. The inclined surface at the base of a hill.

Frost action (in tables)**.** Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from the cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 cm) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 cm) in diameter.

Ground water (geology). Water filling all the unblocked pores of underlying material below the water table.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet (305 m) above surrounding lowlands, commonly of limited summit area and having a well-defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. The major horizons of mineral soil are as follows:

O horizon—An organic layer of fresh and decaying plant residue.

A horizon—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

B horizon—The mineral horizon below an A horizon. The B horizon is, in part, a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

E horizon—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

C horizon—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the number 2 precedes the letter C.

Cr horizon—Sedimentary beds of consolidated sandstone and semiconsolidated and consolidated shale. Generally, roots can penetrate this horizon only along fracture plains.

R layer—Hard, consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon but can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable, part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. Soils having a high infiltration rate when thoroughly wet and having a low runoff potential are in group A. They are mainly deep, well drained, and sandy or gravelly. At the other extreme, soils having a very slow infiltration rate and thus a high runoff potential are in group D. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all of the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Large stones (in tables)**.** Rock fragments 3 inches (7.6 cm) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Light textured soil. Sand and loamy sand.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Fine-grained material, dominantly of silt-sized particles, deposited by wind.

Low strength. The soil is not strong enough to support loads.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minor component. A component of limited extent that may or may not be present.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance—*few, common,* and *many*; size—*fine, medium,* and *coarse*; and contrast—*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet (305 m) above the surrounding lowlands, commonly of limited summit area, and generally having steep sides (slopes greater than 25 percent) and considerable bare rock surface. A mountain can occur as an isolated mass or in a group forming a range or chain. Mountains are primarily formed by deep-seated earth movements or volcanic action and secondarily by differential erosion.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Muskeg. Wetland in boreal regions dominated by Sphagnum moss, stunted black spruce, and low shrubs.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Outwash, glacial. Stratified sand and gravel produced by glaciers and carried, sorted, and deposited by glacial melt water.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square m to 10 square m), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables)**.** The slow movement of water through the soil, adversely affecting the specified use.

Permafrost. Layers of soil or even bedrock, occurring in arctic or subarctic regions, in which a temperature below freezing has existed for a long time.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	Less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	More than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management. For example, slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables)**.** Formation of subsurface tunnels or pipe-like cavities by water moving through the soil.

Pitting (in tables)**.** Pits caused by the melting of ground ice. They form in the soil after plant cover is removed.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Ponding. Standing water on soils in closed depressions. The water can be removed only by percolation or by evapotranspiration.

Poor filter (in tables)**.** Because of rapid permeability or an impermeable layer near the surface, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables)**.** Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity expressed as pH values, are:

Ultra acid	Below 3.5
Extremely acid	3.5 to 4.5
Very strongly acid	4.6 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Riser. The relatively short, steeply sloping area below a terrace tread that grades to a lower terrace tread or base level.

Riverwash. Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

Relief. The elevations or inequalities of a land surface, considered collectively.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bare bedrock other than lava flows and rock-lined pits.

Root zone. The part of the soil that can be penetrated by plant roots.

Rooting depth (in tables)**.** Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the matrix into an unlined auger hole.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables)**.** The movement of water through the soil. Seepage adversely affects the specified use.

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shallow soil. A soil that is 10 to 20 inches (25 to 51 cm) deep over bedrock or other material that restricts the penetration of plant roots.

Shoulder slope. The upper most inclined surface at the top of a hillside. It is the transition zone from the backslope to the summit of a hill or mountain. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables)**.** The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a

soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables)**.** Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables)**.** The slow movement of water into the soil.

Slow refill (in tables)**.** The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables)**.** Rock fragments less than 3 inches (7.6 cm) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	Less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stones. Rock fragments 10 to 24 inches (25 to 61 cm) in diameter if rounded, or 6 to 15 inches (15 to 38 cm) in length if flat.

Stream terrace. One of a series of platforms on a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned floodplain, streambed, or valley floor that was produced during a former stage of erosion or deposition.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are: *platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. The part of the soil below the solum.

Summit. A general term for the top or highest level of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 cm). Frequently designated as the "plow layer" or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons. It includes all subdivisions of these horizons.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river,

lake, or sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables)**.** Otherwise suitable soil material too thin for the specified use.

Toeslope. The outermost inclined surface at the base of a hill. Toeslopes are commonly gentle and linear in profile.

Topsoil. The upper part of the soil that is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Tread. The relatively flat terrace surface that was cut or built by stream or wave action.

Tussock. A small mound, typically 0.5 to 1 foot (15 to 30 cm) high, consisting of densely packed dead parts of sedges or grasses.

Unstable fill (in tables)**.** Risk of caving or sloughing on banks of fill material.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Tables

Table 1--TEMPERATURE AND PRECIPITATION

TAPS Station: EIELSON FIELD, AK2707
Start yr.--1949; end yr.--1996

Month	Temperature (°F)						Precipitation (Inches)				
				2 yrs. in 10 will have				2 yrs. in 10 will have			
	Avg. daily max	Avg. daily min	Avg.	Max. temp. >than	Min. temp. <than	Avg. # of grow. deg. days*	Avg.	Less than	More than	Avg. # of days w/.1 or more	Avg. total snow fall
January	-2.0	-18.2	-10.1	41	-54	0	0.71	0.20	1.12	2	11.5
February	5.7	-15.2	-4.8	43	-49	0	0.55	0.10	0.90	1	8.9
March	23.3	-2.8	10.3	48	-38	0	0.52	0.15	0.82	1	7.8
April	41.1	19.6	30.4	65	-13	0	0.34	0.08	0.57	1	4.3
May	58.4	37.1	47.8	78	20	90	0.72	0.24	1.11	2	1.0
June	68.9	48.1	58.5	87	35	555	1.78	0.88	2.56	4	0.0
July	70.7	51.1	60.9	87	40	646	2.40	1.45	3.25	6	0.0
August	65.6	46.3	56.0	84	30	420	2.24	1.28	3.10	6	0.0
September	54.0	35.1	44.5	74	16	0	1.37	0.53	2.07	3	2.3
October	31.6	16.6	24.1	59	-16	0	0.96	0.42	1.43	3	12.3
November	10.3	-5.3	2.5	44	-38	0	0.81	0.34	1.20	2	15.4
December	-0.2	-15.9	-8.0	41	-48	0	0.72	0.19	1.15	2	12.4
Yearly :											
Average	35.6	16.4	26.0	---	---	---	----	----	----	---	---
Extreme	93	-64	---	89	-56	---	----	----	----	---	---
Total	---	---	---	---	---	1711	13.13	8.44	15.73	33	75.8

Average # of days per year with at least 1 inch of snow on the ground: 155

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (threshold: 40.0°F [4°C]). It is determined for the average growing season (32°F [0°C] base) that occurs on the average in 8 years out of 10.

Table 2--FREEZE DATES IN SPRING AND FALL

FROST Station: EIELSON FIELD, AK2707
Start yr.--1949; end yr.--1996

Probability	Temperature		
	24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than------	May 7	May 14	May 24
2 years in 10 later than-----	May 3	May 11	May 21
5 years in 10 later than-----	April 25	May 4	May 15
First freezing temperature in fall:			
1 year in 10 earlier than----	September 13	August 29	August 22
2 years in 10 earlier than---	September 18	September 3	August 26
5 years in 10 earlier than---	September 26	September 13	September 2

Table 3--GROWING SEASON

GROWTH Station: EIELSON FIELD, AK2707
Start yr.--1949; end yr.--1996

Probability	Daily Minimum Temperature		
	# days > 24°F	# days > 28°F	# days > 32°F
9 years in 10	133	112	91
8 years in 10	140	119	98
5 years in 10	153	132	110
2 years in 10	167	145	122
1 year in 10	173	152	128

Table 4--FORESTLAND MANAGEMENT AND PRODUCTIVITY

Map symbol and soil name (% of map unit)	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m3/ha	
9:										
Histels, Terric---- (90%)	0W	Slight	Severe	Severe	Severe	Severe	Black spruce--	---	0	---
20:										
Mosquito (87%)-----	0W	Severe	Severe	Severe	Moderate	Severe	Black spruce--	---	0	---
							Tamarack------	---	0	
21A:										
Goldstream (80%)---	0W	Slight	Severe	Severe	Severe	Severe	Black spruce--	---	0	---
Chatanika (15%)----	2W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
21B:										
Goldstream (85%)---	0W	Slight	Severe	Severe	Severe	Severe	Black spruce--	---	0	---
Chatanika (15%)----	2W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
22:										
Tanacross (85%)----	0W	Slight	Severe	Severe	Severe	Severe	Black spruce--	---	0	---
25:										
Tanana (85%)-------	1W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	55	1	
31:										
Eielson (60%)------	3A	Slight	Slight	Slight	Moderate	Moderate	White spruce--	90	3	White spruce
Piledriver (30%)---	1W	Slight	Slight	Slight	Moderate	Slight	White spruce--	43	1	White spruce
32:										
Salchaket (90%)----	3A	Slight	Slight	Slight	Slight	Moderate	Balsam poplar-	---	---	White spruce
							White spruce--	94	3	
35:										
North Pole (70%)---	1W	Slight	Moderate	Slight	Moderate	Slight	Black spruce--	---	0	---
							Tamarack------	---	0	
Mosquito (15%)-----	0W	Slight	Severe	Severe	Severe	Severe	Black spruce--	---	0	---
							Tamarack------	---	0	
36:										
Jarvis (95%)-------	2D	Slight	Slight	Slight	Moderate	Moderate	Paper birch---	50	2	White spruce
							Quaking aspen-	60	4	
							White spruce--	80	2	
37:										
Chena (90%)--------	2S	Slight	Slight	Severe	Severe	Slight	White spruce--	80	2	White spruce
40A:										
Chatanika (90%)----	2W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	67	2	
40B:										
Chatanika (90%)----	2W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	67	2	

Table 4--FORESTLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name (% of map unit)	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m3/ha	
40D:										
Chatanika (90%)----	2W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	67	2	
41A:										
Minto (85%)--------	2A	Slight	Slight	Slight	Moderate	Moderate	White spruce--	67	2	White spruce
41B:										
Minto (85%)--------	2A	Slight	Slight	Slight	Moderate	Moderate	White spruce--	67	2	White spruce
41C:										
Minto (85%)--------	2A	Slight	Slight	Slight	Moderate	Moderate	White spruce--	67	2	White spruce
41D:										
Minto (85%)--------	2A	Slight	Slight	Slight	Moderate	Moderate	White spruce--	67	2	White spruce
42B:										
Fairbanks (85%)----	2A	Slight	Slight	Slight	Slight	Moderate	Paper birch---	60	3	White spruce
							Quaking aspen-	65	4	
							White spruce--	83	2	
42C:										
Fairbanks (90%)----	2A	Slight	Slight	Slight	Slight	Moderate	Paper birch---	60	3	White spruce
							Quaking aspen-	65	4	
							White spruce--	83	2	
42CG:										
Fairbanks strongly-sloping (75%)	2A	Slight	Slight	Slight	Slight	Moderate	Paper birch---	60	3	White spruce
							Quaking aspen-	65	4	
							White spruce--	83	2	
Fairbanks steep---- (25%)	2A	Severe	Severe	Slight	Slight	Moderate	Paper birch---	60	3	White spruce
							Quaking aspen-	65	4	
							White spruce--	83	2	
42D:										
Fairbanks (85%)----	2A	Moderate	Moderate	Slight	Slight	Moderate	Paper birch---	60	3	White spruce
							Quaking aspen-	65	4	
							White spruce--	83	2	
42G:										
Fairbanks (90%)----	2A	Severe	Severe	Slight	Slight	Moderate	Paper birch---	60	3	White spruce
							Quaking aspen-	65	4	
							White spruce--	83	2	
44D:										
Steese (85%)-------	2A	Moderate	Moderate	Slight	Slight	Moderate	Paper birch---	65	3	White spruce
							Quaking aspen-	70	5	
							White spruce--	85	2	
45D:										
Gilmore (85%)------	2D	Moderate	Moderate	Slight	Moderate	Slight	Black spruce--	---	---	White spruce
							Paper birch---	38	1	
							Quaking aspen-	44	2	
							White spruce--	68	2	

Table 4--FORESTLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name (% of map unit)	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m3/ha	
45D: (cont'd)										
Steese (15%)-------	2A	Moderate	Moderate	Slight	Slight	Moderate	Paper birch---	65	3	White spruce
							Quaking aspen-	70	5	
							White spruce--	85	2	
45E:										
Gilmore (90%)------	2D	Slight	Slight	Slight	Moderate	Slight	Black spruce--	---	---	White spruce
							Paper birch---	38	1	
							Quaking aspen-	44	2	
							White spruce--	68	2	
51B:										
Saulich (90%)------	0W	Slight	Severe	Severe	Severe	Severe	----------	---	---	---
51C:										
Saulich (90%)------	0W	Slight	Severe	Severe	Severe	Severe	----------	---	---	---
61:										
Piledriver (90%)---	1W	Slight	Slight	Slight	Moderate	Slight	White spruce--	43	1	White spruce
62:										
Peede (70%)--------	0W	Slight	Severe	Severe	Severe	Severe	----------	---	---	---
Mosquito (25%)-----	0W	Severe	Severe	Severe	Moderate	Severe	Black spruce--	---	0	---
							Tamarack------	---	0	
64:										
Eielson (50%)------	1W	Slight	Slight	Slight	Moderate	Moderate	White spruce--	53	1	White spruce
Tanana (40%)-------	1W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	55	1	
211:										
Chatanika (60%)----	2W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	67	2	
Goldstream (20%)---	0W	Slight	Severe	Severe	Severe	Severe	Black spruce--	---	0	---
212:										
Goldstream (50%)---	0W	Slight	Severe	Severe	Severe	Severe	Black spruce--	---	0	---
Bolio (45%)--------	0W	Slight	Severe	Severe	Severe	Severe	Black spruce--	---	0	---
251:										
Tanana (70%)-------	1W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	55	1	
Mosquito (25%)-----	0W	Severe	Severe	Severe	Moderate	Severe	Black spruce--	---	0	---
							Tamarack------	---	0	
361:										
Jarvis (65%)-------	2D	Slight	Slight	Slight	Moderate	Moderate	Paper birch---	50	2	White spruce
							Quaking aspen-	60	4	
							White spruce--	80	2	
Chena (30%)--------	2S	Slight	Slight	Severe	Severe	Slight	White spruce--	80	2	White spruce

Table 4--FORESTLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name (% of map unit)	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m3/ha	
362:										
Fubar (40%)--------	2F	Slight	Moderate	Moderate	Moderate	Slight	Balsam poplar-	---	---	Paper birch, White spruce
							Black spruce--	---	---	
							Paper birch---	---	---	
							Quaking aspen-	---	---	
							White spruce--	79	2	
Piledriver (40%)---	1W	Slight	Slight	Slight	Moderate	Slight	White spruce--	43	1	White spruce
363:										
Jarvis (45%)-------	2D	Slight	Slight	Slight	Moderate	Moderate	Paper birch---	50	2	White spruce
							Quaking aspen-	60	4	
							White spruce--	80	2	
Salchaket (35%)----	3A	Slight	Slight	Slight	Slight	Moderate	White spruce--	94	3	White spruce
411B:										
Minto (60%)--------	2A	Slight	Slight	Slight	Moderate	Moderate	White spruce--	67	2	White spruce
Chatanika (30%)----	2W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	67	2	
411C:										
Minto (60%)--------	2A	Slight	Slight	Slight	Moderate	Moderate	White spruce--	67	2	White spruce
Chatanika (30%)----	2W	Slight	Severe	Moderate	Moderate	Moderate	Black spruce--	---	---	---
							White spruce--	67	2	
421C:										
Fairbanks (45%)----	2A	Slight	Slight	Slight	Slight	Moderate	Paper birch---	60	3	White spruce
							Quaking aspen-	65	4	
							White spruce--	83	2	
Steese (45%)-------	2A	Slight	Slight	Slight	Slight	Moderate	Paper birch---	65	3	White spruce
							Quaking aspen-	70	5	
							White spruce--	85	2	
421D:										
Fairbanks (45%)----	2A	Slight	Slight	Slight	Slight	Moderate	Paper birch---	60	3	White spruce
							Quaking aspen-	65	4	
							White spruce--	83	2	
Steese (45%)-------	2A	Slight	Slight	Slight	Slight	Moderate	Paper birch---	65	3	White spruce
							Quaking aspen-	70	5	
							White spruce--	85	2	
452:										
Gilmore (70%)------	2D	Slight	Slight	Slight	Moderate	Slight	Black spruce--	---	---	White spruce
							Paper birch---	38	1	
							Quaking aspen-	44	2	
							White spruce--	68	2	
Steese (30%)-------	2A	Slight	Slight	Slight	Slight	Moderate	Paper birch---	65	3	White spruce
							Quaking aspen-	70	5	
							White spruce--	85	2	

Table 4--FORESTLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name (% of map unit)	Ordination symbol	Management concerns					Potential productivity			Suggested trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition	Common trees	Site index	Volume of wood fiber	
									m3/ha	
611:										
Piledriver (50%)---	1W	Slight	Slight	Slight	Moderate	Slight	White spruce--	43	1	White spruce
Eielson (40%)------	1W	Slight	Slight	Slight	Moderate	Moderate	White spruce--	55	1	White spruce
CL:										
Typic Cryorthents-- (80%)	---	Slight	Slight	Slight	Moderate	Moderate	----------	---	---	---
Gv:										
Gravel pits (100%)-	---	---	---	---	---	---	----------	---	---	---
Lf:										
Dump areas (100%)--	---	---	---	---	---	---	----------	---	---	---
Rv:										
Riverwash (100%)--	---	---	---	---	---	---	----------	---	---	---
UC:										
Typic Cryorthents-- (45%)	---	Slight	Slight	Slight	Moderate	Moderate	----------	---	---	---
Urban land (45%)---	---	---	---	---	---	---	----------	---	---	---
W:										
Water (100%)-------	---	---	---	---	---	---	----------	---	---	---
WAH:										
Typic Cryaquents--- (30%)	0W	Slight	Severe	Severe	Severe	Severe	----------	---	---	---
Histic Cryaquepts-- (25%)	0W	Slight	Severe	Severe	Severe	Severe	----------	---	---	---
Terric Cryofibrists (20%)	0W	Slight	Severe	Severe	Severe	Severe	----------	---	---	---

Table 5--RECREATIONAL DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for on-site investigation.)

Map symbol and soil name (% of map unit)	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
9:					
Histels, Terric (90%)--	Severe: flooding wetness permafrost	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost
20:					
Mosquito (87%)---------	Severe: excess humus wetness permafrost	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness permafrost
21A:					
Goldstream (80%)-------	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost subsides
Chatanika (15%)--------	Severe: wetness permafrost subsides	Severe: wetness	Severe: wetness subsides	Severe: wetness	Severe: wetness subsides
21B:					
Goldstream (85%)-------	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost subsides
Chatanika (15%)--------	Severe: wetness permafrost subsides	Severe: wetness	Severe: wetness subsides	Severe: wetness	Severe: wetness subsides
22:					
Tanacross (85%)--------	Severe: flooding wetness permafrost	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost	Severe: wetness permafrost too acid
25:					
Tanana (85%)-----------	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: permafrost
31:					
Eielson (60%)----------	Slight	Slight	Slight	Slight	Slight
Piledriver (30%)-------	Slight	Slight	Slight	Slight	Slight
32:					
Salchaket (90%)--------	Slight	Slight	Slight	Slight	Slight
35:					
North Pole (70%)-------	Severe: flooding wetness	Severe: wetness	Severe: wetness	Severe: excess humus wetness	Severe: wetness

Table 5--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
35: (cont'd)					
Mosquito (15%)	Severe: excess humus wetness permafrost	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness permafrost
36:					
Jarvis (95%)	Slight	Slight	Moderate: flooding	Severe: erodes easily	Slight
37:					
Chena (90%)	Slight	Slight	Slight	Slight	Moderate: droughty
40A:					
Chatanika (90%)	Severe: wetness permafrost subsides	Severe: wetness	Severe: wetness subsides	Severe: wetness	Severe: wetness subsides
40B:					
Chatanika (90%)	Severe: wetness permafrost subsides	Severe: wetness	Severe: wetness subsides	Severe: wetness	Severe: wetness subsides
40D:					
Chatanika (90%)	Severe: slope wetness permafrost subsides	Severe: slope wetness	Severe: slope wetness subsides	Severe: wetness	Severe: slope wetness subsides
41A:					
Minto (85%)	Severe: subsides	Severe: subsides	Severe: subsides	Slight	Severe: subsides
41B:					
Minto (85%)	Severe: subsides	Severe: subsides	Severe: subsides	Slight	Severe: subsides
41C:					
Minto (85%)	Severe: subsides	Severe: subsides	Severe: slope subsides	Slight	Severe: subsides
41D:					
Minto (85%)	Severe: slope subsides	Severe: slope subsides	Severe: slope subsides	Moderate: slope	Severe: slope subsides
42B:					
Fairbanks (85%)	Slight	Slight	Moderate: slope	Slight	Slight
42C:					
Fairbanks (90%)	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope

Table 5--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
42CG:					
Fairbanks strongly----- sloping (75%)	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Fairbanks steep (25%)--	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
42D:					
Fairbanks (85%)--------	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
42G:					
Fairbanks (90%)--------	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily slope	Severe: slope
44D:					
Steese (85%)-----------	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
45D:					
Gilmore (85%)----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: erodes easily	Severe: slope depth to rock
Steese (15%)-----------	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
45E:					
Gilmore (90%)----------	Severe: slope depth to rock	Severe: slope depth to rock	Severe: slope depth to rock	Severe: erodes easily	Severe: slope depth to rock
51B:					
Saulich (90%)----------	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost subsides
51C:					
Saulich (90%)----------	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus slope wetness permafrost subsides	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost subsides
61:					
Piledriver (90%)-------	Slight	Slight	Slight	Slight	Slight
62:					
Peede (70%)------------	Severe: flooding wetness ponding	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding
Mosquito (25%)---------	Severe: excess humus wetness permafrost	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness permafrost

Table 5--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
64:					
Eielson (50%)	Slight	Slight	Slight	Slight	Slight
Tanana (40%)	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: permafrost
211:					
Chatanika (60%)	Severe: wetness permafrost subsides	Severe: wetness	Severe: wetness subsides	Severe: wetness	Severe: wetness subsides
Goldstream (20%)	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost subsides
212:					
Goldstream (50%)	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost subsides	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost subsides
Bolio (45%)	Severe: flooding wetness permafrost	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost
251:					
Tanana (70%)	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: permafrost
Mosquito (25%)	Severe: excess humus wetness permafrost	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness permafrost
361:					
Jarvis (65%)	Slight	Slight	Moderate: flooding	Severe: erodes easily	Slight
Chena (30%)	Slight	Slight	Slight	Slight	Moderate: droughty
362:					
Fubar (40%)	Slight	Slight	Slight	Slight	Severe: droughty
Piledriver (40%)	Slight	Slight	Slight	Slight	Slight
363:					
Jarvis (45%)	Slight	Slight	Moderate: flooding	Severe: erodes easily	Slight
Salchaket (35%)	Slight	Slight	Slight	Slight	Slight

Table 5--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
411B:					
Minto (60%)	Severe: subsides	Severe: subsides	Severe: subsides	Slight	Severe: subsides
Chatanika (30%)	Severe: wetness permafrost subsides	Severe: wetness	Severe: wetness subsides	Severe: wetness	Severe: wetness subsides
411C:					
Minto (60%)	Severe: subsides	Severe: subsides	Severe: slope subsides	Slight	Severe: subsides
Chatanika (30%)	Severe: wetness permafrost subsides	Severe: wetness	Severe: slope wetness subsides	Severe: wetness	Severe: wetness subsides
421C:					
Fairbanks (45%)	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Steese (45%)	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope depth to rock
421D:					
Fairbanks (45%)	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope
Steese (45%)	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily slope	Severe: slope
452:					
Gilmore (70%)	Severe: depth to rock	Severe: depth to rock	Severe: slope depth to rock	Severe: erodes easily	Severe: depth to rock
Steese (30%)	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: slope depth to rock
611:					
Piledriver (50%)	Slight	Slight	Slight	Slight	Slight
Eielson (40%)	Slight	Slight	Slight	Slight	Slight
CL:					
Typic Cryorthents (80%)	Moderate: flooding	Slight	Slight	Slight	Slight
Gv:					
Gravel pits (100%)	---	---	---	---	---
Lf:					
Dump areas (100%)	---	---	---	---	---
Rv:					
Riverwash (100%)	---	---	---	---	---

Table 5--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
UC:					
Typic Cryorthents (45%)	Moderate: flooding	Slight	Slight	Slight	Slight
Urban land (45%)-------	---	---	---	---	---
W:					
Water (100%)----------	---	---	---	---	---
WAH:					
Typic Cryaquents (30%)-	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding
Histic Cryaquepts (25%)	Severe: wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness	Severe: excess humus wetness
Terric Cryofibrists---- (20%)	Severe: excess humus flooding ponding	Severe: excess humus wetness ponding	Severe: excess humus wetness ponding	Severe: excess humus wetness ponding	Severe: excess humus wetness ponding

Table 6--BUILDING SITE DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for on-site investigation.)

Map symbol and soil name (% of map unit)	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
9:						
Histels, Terric (90%)--	Severe: excess humus wetness permafrost	Severe: flooding wetness permafrost subsides	Severe: flooding wetness permafrost subsides	Severe: flooding low strength wetness permafrost subsides	Severe: low strength wetness permafrost subsides	Severe: excess humus wetness permafrost
20:						
Mosquito (87%)---------	Severe: wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: frost action wetness permafrost	Severe: excess humus wetness permafrost
21A:						
Goldstream (80%)-------	Severe: wetness permafrost	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: excess humus wetness permafrost subsides
Chatanika (15%)--------	Severe: wetness permafrost	Severe: wetness subsides	Severe: wetness permafrost subsides	Severe: permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: wetness subsides
21B:						
Goldstream (85%)-------	Severe: wetness permafrost	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: excess humus wetness permafrost subsides
Chatanika (15%)--------	Severe: wetness permafrost	Severe: wetness subsides	Severe: wetness permafrost subsides	Severe: permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: wetness subsides
22:						
Tanacross (85%)--------	Severe: wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: frost action wetness permafrost	Severe: wetness permafrost too acid
25:						
Tanana (85%)-----------	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: frost action permafrost	Severe: permafrost
31:						
Eielson (60%)----------	Severe: cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: frost action	Slight

Table 6--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
31: (cont'd)						
Piledriver (30%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: frost action	Slight
32:						
Salchaket (90%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: frost action	Slight
35:						
North Pole (70%)	Severe: wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: flooding wetness	Severe: frost action wetness	Severe: wetness
Mosquito (15%)	Severe: wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: frost action wetness permafrost	Severe: excess humus wetness permafrost
36:						
Jarvis (95%)	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
37:						
Chena (90%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Slight	Moderate: droughty
40A:						
Chatanika (90%)	Severe: wetness permafrost	Severe: wetness subsides	Severe: wetness permafrost subsides	Severe: permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: wetness subsides
40B:						
Chatanika (90%)	Severe: wetness permafrost	Severe: wetness subsides	Severe: wetness permafrost subsides	Severe: permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: wetness subsides
40D:						
Chatanika (90%)	Severe: slope wetness permafrost	Severe: slope wetness subsides	Severe: slope wetness permafrost subsides	Severe: slope permafrost subsides	Severe: frost action slope wetness permafrost subsides	Severe: slope wetness subsides
41A:						
Minto (85%)	Slight	Severe: subsides	Severe: subsides	Severe: subsides	Severe: frost action subsides	Severe: subsides
41B:						
Minto (85%)	Slight	Severe: subsides	Severe: subsides	Severe: subsides	Severe: frost action subsides	Severe: subsides

Table 6--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
41C:						
Minto (85%)	Slight	Severe: subsides	Severe: subsides	Severe: slope subsides	Severe: frost action subsides	Severe: subsides
41D:						
Minto (85%)	Severe: slope	Severe: slope subsides	Severe: slope subsides	Severe: slope subsides	Severe: frost action slope subsides	Severe: slope subsides
42B:						
Fairbanks (85%)	Moderate: cutbanks cave	Slight	Slight	Moderate: slope	Severe: frost action	Slight
42C:						
Fairbanks (90%)	Moderate: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Severe: frost action	Moderate: slope
42CG:						
Fairbanks strongly sloping (75%)	Moderate: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Severe: frost action	Moderate: slope
Fairbanks steep (25%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: frost action slope	Severe: slope
42D:						
Fairbanks (85%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: frost action slope	Severe: slope
42G:						
Fairbanks (90%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: frost action slope	Severe: slope
44D:						
Steese (85%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: frost action slope	Severe: slope
45D:						
Gilmore (85%)	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock
Steese (15%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: frost action slope	Severe: slope
45E:						
Gilmore (90%)	Severe: slope depth to rock	Severe: slope	Severe: slope depth to rock	Severe: slope	Severe: slope	Severe: slope depth to rock

Table 6--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
51B:						
Saulich (90%)	Severe: wetness permafrost	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: excess humus wetness permafrost subsides
51C:						
Saulich (90%)	Severe: wetness permafrost	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: slope wetness permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: excess humus wetness permafrost subsides
61:						
Piledriver (90%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: frost action	Slight
62:						
Peede (70%)	Severe: wetness ponding	Severe: flooding wetness ponding	Severe: flooding wetness ponding	Severe: flooding wetness ponding	Severe: flooding frost action wetness ponding	Severe: wetness ponding
Mosquito (25%)	Severe: wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: frost action wetness permafrost	Severe: excess humus wetness permafrost
64:						
Eielson (50%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: frost action	Slight
Tanana (40%)	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: frost action permafrost	Severe: permafrost
211:						
Chatanika (60%)	Severe: wetness permafrost	Severe: wetness subsides	Severe: wetness permafrost subsides	Severe: permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: wetness subsides
Goldstream (20%)	Severe: wetness permafrost	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: excess humus wetness permafrost subsides
212:						
Goldstream (50%)	Severe: wetness permafrost	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: excess humus wetness permafrost subsides

Table 6--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
212: (cont'd)						
Bolio (45%)	Severe: excess humus wetness permafrost	Severe: flooding wetness permafrost subsides	Severe: flooding wetness permafrost subsides	Severe: flooding low strength wetness permafrost subsides	Severe: low strength wetness permafrost subsides	Severe: excess humus wetness permafrost
251:						
Tanana (70%)	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: frost action permafrost	Severe: permafrost
Mosquito (25%)	Severe: wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: flooding wetness permafrost	Severe: frost action wetness permafrost	Severe: excess humus wetness permafrost
361:						
Jarvis (65%)	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
Chena (30%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Slight	Moderate: droughty
362:						
Fubar (40%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Slight	Severe: droughty
Piledriver (40%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: frost action	Slight
363:						
Jarvis (45%)	Moderate: flooding	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding	Slight
Salchaket (35%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: frost action	Slight
411B:						
Minto (60%)	Slight	Severe: subsides	Severe: subsides	Severe: subsides	Severe: frost action subsides	Severe: subsides
Chatanika (30%)	Severe: wetness permafrost	Severe: wetness subsides	Severe: wetness permafrost subsides	Severe: permafrost subsides	Severe: frost action wetness permafrost subsides	Severe: wetness subsides
411C:						
Minto (60%)	Slight	Severe: subsides	Severe: subsides	Severe: slope subsides	Severe: frost action subsides	Severe: subsides

Table 6--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
411C: (cont'd)						
Chatanika (30%)	Severe: wetness permafrost	Severe: wetness subsides	Severe: wetness permafrost subsides	Severe: slope permafrost subsides	Severe: frost action slope wetness permafrost subsides	Severe: wetness subsides
421C:						
Fairbanks (45%)	Moderate: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Severe: frost action	Moderate: slope
Steese (45%)	Moderate: slope cutbanks cave depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: frost action slope	Moderate: slope depth to rock
421D:						
Fairbanks (45%)	Moderate: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Severe: frost action	Moderate: slope
Steese (45%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
452:						
Gilmore (70%)	Severe: depth to rock	Moderate: slope depth to rock	Severe: depth to rock	Severe: slope	Moderate: frost action slope depth to rock	Severe: depth to rock
Steese (30%)	Moderate: slope cutbanks cave depth to rock	Moderate: slope	Moderate: slope depth to rock	Severe: slope	Moderate: frost action slope	Moderate: slope depth to rock
611:						
Piledriver (50%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: frost action	Slight
Eielson (40%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding wetness	Severe: flooding	Severe: frost action	Slight
CL:						
Typic Cryorthents (80%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding frost action	Slight
Gv:						
Gravel pits (100%)	---	---	---	---	---	---
Lf:						
Dump areas (100%)	---	---	---	---	---	---
Rv:						
Riverwash (100%)	---	---	---	---	---	---

Table 6--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name (% of map unit)	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
UC:						
Typic Cryorthents (45%)	Severe: cutbanks cave	Severe: flooding	Severe: flooding	Severe: flooding	Moderate: flooding frost action	Slight
Urban land (45%)-------	---	---	---	---	---	---
W:						
Water (100%)----------	---	---	---	---	---	---
WAH:						
Typic Cryaquents (30%)-	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding	Severe: frost action wetness ponding	Severe: wetness ponding
Histic Cryaquepts (25%)	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: frost action wetness	Severe: excess humus wetness
Terric Cryofibrists---- (20%)	Severe: excess humus wetness ponding	Severe: flooding low strength subsides ponding	Severe: flooding low strength subsides ponding	Severe: flooding low strength wetness subsides ponding	Severe: frost action low strength wetness subsides ponding	Severe: excess humus wetness ponding

Table 7--SANITARY FACILITIES

(The information in this report indicates the dominant soil condition but does not eliminate the need for on-site investigation.)

Map symbol and soil name (% of map unit)	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
9:					
Histels, Terric (90%)--	Severe: wetness permafrost subsides	Severe: excess humus wetness permafrost	Severe: excess humus wetness permafrost ponding	Severe: wetness permafrost ponding	Poor: excess humus wetness permafrost
20:					
Mosquito (87%)---------	Severe: wetness permafrost	Severe: excess humus wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
21A:					
Goldstream (80%)-------	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
Chatanika (15%)--------	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
21B:					
Goldstream (85%)-------	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
Chatanika (15%)--------	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
22:					
Tanacross (85%)--------	Severe: wetness permafrost	Severe: excess humus wetness permafrost	Severe: wetness permafrost too acid	Severe: wetness permafrost	Poor: wetness permafrost
25:					
Tanana (85%)-----------	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
31:					
Eielson (60%)---------	Severe: wetness	Moderate: seepage wetness	Severe: seepage	Moderate: flooding wetness	Slight
Piledriver (30%)-------	Severe: wetness poor filter	Moderate: seepage wetness	Severe: seepage	Moderate: flooding seepage wetness	Slight

Table 7--SANITARY FACILITIES--Continued

Map symbol and soil name (% of map unit)	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
32:					
Salchaket (90%)	Moderate: flooding poor filter	Severe: seepage	Severe: seepage	Moderate: flooding	Slight
35:					
North Pole (70%)	Severe: wetness poor filter	Severe: seepage wetness	Severe: wetness	Severe: wetness	Poor: wetness
Mosquito (15%)	Severe: wetness permafrost	Severe: excess humus wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
36:					
Jarvis (95%)	Severe: flooding	Severe: flooding seepage	Severe: flooding seepage	Severe: flooding seepage	Poor: seepage
37:					
Chena (90%)	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy
40A:					
Chatanika (90%)	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
40B:					
Chatanika (90%)	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
40D:					
Chatanika (90%)	Severe: slope wetness permafrost subsides	Severe: slope wetness permafrost subsides	Severe: slope wetness permafrost	Severe: slope wetness permafrost	Poor: slope wetness permafrost
41A:					
Minto (85%)	Severe: subsides	Severe: subsides	Slight	Slight	Slight
41B:					
Minto (85%)	Severe: subsides	Severe: subsides	Slight	Slight	Slight
41C:					
Minto (85%)	Severe: subsides	Severe: slope subsides	Slight	Slight	Slight
41D:					
Minto (85%)	Severe: slope subsides	Severe: slope subsides	Severe: slope	Severe: slope	Severe: slope

Table 7--SANITARY FACILITIES--Continued

Map symbol and soil name (% of map unit)	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
42B:					
Fairbanks (85%)	Moderate: percs slowly	Moderate: seepage slope	Slight	Slight	Good
42C:					
Fairbanks (90%)	Moderate: percs slowly slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
42CG:					
Fairbanks strongly sloping (75%)	Moderate: percs slowly slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Fairbanks steep (25%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
42D:					
Fairbanks (85%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
42G:					
Fairbanks (90%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
44D:					
Steese (85%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
45D:					
Gilmore (85%)	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
Steese (15%)	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
45E:					
Gilmore (90%)	Severe: slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Severe: seepage slope depth to rock	Poor: slope depth to rock
51B:					
Saulich (90%)	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
51C:					
Saulich (90%)	Severe: wetness permafrost subsides	Severe: slope wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
61:					
Piledriver (90%)	Severe: wetness poor filter	Moderate: seepage wetness	Severe: seepage	Severe: seepage	Severe: too sandy

Table 7--SANITARY FACILITIES--Continued

Map symbol and soil name (% of map unit)	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
62:					
Peede (70%)	Severe: flooding wetness ponding	Severe: flooding wetness ponding	Severe: flooding wetness ponding	Severe: flooding wetness ponding	Poor: wetness ponding
Mosquito (25%)	Severe: wetness permafrost	Severe: excess humus wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
64:					
Eielson (50%)	Severe: wetness	Moderate: seepage wetness	Severe: seepage	Moderate: flooding wetness	Slight
Tanana (40%)	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
211:					
Chatanika (60%)	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
Goldstream (20%)	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
212:					
Goldstream (50%)	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
Bolio (45%)	Severe wetness permafrost subsides	Severe excess humus wetness permafrost	Severe: excess humus wetness permafrost ponding	Severe: wetness permafrost ponding	Poor excess humus wetness permafrost
251:					
Tanana (70%)	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
Mosquito (25%)	Severe: wetness permafrost	Severe: excess humus wetness permafrost	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
361:					
Jarvis (65%)	Severe: flooding	Severe: flooding seepage	Severe: flooding seepage	Severe: flooding seepage	Poor: seepage
Chena (30%)	Severe: poor filter	Severe: seepage	Severe: seepage too sandy	Severe: seepage	Poor: seepage small stones too sandy

Table 7--SANITARY FACILITIES--Continued

Map symbol and soil name (% of map unit)	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
362:					
Fubar (40%)	Severe: flooding wetness poor filter	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Severe: flooding seepage wetness	Poor: seepage small stones too sandy
Piledriver (40%)	Severe: wetness poor filter	Moderate: seepage wetness	Severe: seepage	Severe: seepage	Severe: too sandy
363:					
Jarvis (45%)	Severe: flooding	Severe: flooding seepage	Severe: flooding seepage	Severe: flooding seepage	Poor: seepage
Salchaket (35%)	Moderate: flooding poor filter	Severe: seepage	Severe: seepage	Moderate: flooding	Slight
411B:					
Minto (60%)	Severe: subsides	Severe: subsides	Slight	Slight	Slight
Chatanika (30%)	Severe: wetness permafrost subsides	Severe: wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
411C:					
Minto (60%)	Severe: subsides	Severe: slope subsides	Slight	Slight	Slight
Chatanika (30%)	Severe: wetness permafrost subsides	Severe: slope wetness permafrost subsides	Severe: wetness permafrost	Severe: wetness permafrost	Poor: wetness permafrost
421C:					
Fairbanks (45%)	Moderate: percs slowly slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Steese (45%)	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
421D:					
Fairbanks (45%)	Moderate: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Steese (45%)	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
452:					
Gilmore (70%)	Severe: depth to rock	Severe: seepage slope depth to rock	Severe: seepage depth to rock	Severe: seepage depth to rock	Poor: depth to rock

Table 7--SANITARY FACILITIES--Continued

Map symbol and soil name (% of map unit)	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
452: (cont'd)					
Steese (30%)	Severe: depth to rock	Severe: slope depth to rock	Severe: depth to rock	Severe: depth to rock	Poor: depth to rock
611:					
Piledriver (50%)	Severe: wetness poor filter	Moderate: seepage wetness	Severe: seepage	Severe: seepage	Severe: too sandy
Eielson (40%)	Severe: wetness	Moderate: seepage wetness	Severe: seepage	Moderate: flooding wetness	Slight
CL:					
Typic Cryorthents (80%)	Moderate: flooding percs slowly	Severe: seepage	Severe: seepage	Moderate: flooding	Slight
Gv:					
Gravel pits (100%)	---	---	---	---	---
Lf:					
Dump areas (100%)	---	---	---	---	---
Rv:					
Riverwash (100%)	---	---	---	---	---
UC:					
Typic Cryorthents (45%)	Moderate: flooding percs slowly	Severe: seepage	Severe: seepage	Moderate: flooding	Fair: thin layer
Urban land (45%)	---	---	---	---	---
W:					
Water (100%)	---	---	---	---	---
WAH:					
Typic Cryaquents (30%)	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding	Severe: wetness ponding	Poor: wetness ponding
Histic Cryaquepts (25%)	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: excess humus wetness
Terric Cryofibrists (20%)	Severe: wetness ponding	Severe: excess humus seepage wetness ponding	Severe: excess humus wetness ponding	Severe: wetness ponding	Poor: excess humus ponding

Table 8--CONSTRUCTION MATERIALS

(The information in this report indicates the dominant soil condition but does not eliminate the need for on-site investigation.)

Map symbol and soil name (% of map unit)	Roadfill	Sand	Gravel	Topsoil
9:				
Histels, Terric (90%)-	Poor: low strength wetness permafrost	Improbable: excess humus permafrost	Improbable: excess humus permafrost	Poor: excess humus wetness permafrost
20:				
Mosquito (87%)--------	Poor: wetness permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: excess humus wetness permafrost
21A:				
Goldstream (80%)------	Poor: wetness permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: wetness permafrost
Chatanika (15%)-------	Poor: permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: permafrost
21B:				
Goldstream (85%)------	Poor: wetness permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: wetness permafrost
Chatanika (15%)-------	Poor: permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: permafrost
22:				
Tanacross (85%)-------	Poor: wetness permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: excess humus wetness permafrost
25:				
Tanana (85%)----------	Poor: permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: permafrost
31:				
Eielson (60%)---------	Good	Improbable: excess fines	Improbable: thin layer	Poor: area reclaim
Piledriver (30%)------	Good	Probable	Probable	Poor: area reclaim
32:				
Salchaket (90%)-------	Good	Improbable: excess fines	Improbable: excess fines	---
35:				
North Pole (70%)------	Poor: wetness	Probable	Probable	Poor: thin layer wetness

Table 8--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name (% of map unit)	Roadfill	Sand	Gravel	Topsoil
35: (cont'd)				
Mosquito (15%)	Poor: wetness, permafrost	Improbable: excess fines, permafrost	Improbable: excess fines, permafrost	Poor: excess humus, wetness, permafrost
36:				
Jarvis (95%)	Fair	Probable	Probable	Fair: small stones
37:				
Chena (90%)	Good	Probable	Probable	Poor: area reclaim, small stones, too sandy
40A:				
Chatanika (90%)	Poor: permafrost	Improbable: excess fines, permafrost	Improbable: excess fines, permafrost	Poor: permafrost
40B:				
Chatanika (90%)	Poor: permafrost	Improbable: excess fines, permafrost	Improbable: excess fines, permafrost	Poor: permafrost
40D:				
Chatanika (90%)	Poor: permafrost	Improbable: excess fines, permafrost	Improbable: excess fines, permafrost	Poor: slope, permafrost
41A:				
Minto (85%)	Good	Improbable: excess fines	Improbable: excess fines	Good
41B:				
Minto (85%)	Good	Improbable: excess fines	Improbable: excess fines	Good
41C:				
Minto (85%)	Good	Improbable: excess fines	Improbable: excess fines	Good
41D:				
Minto (85%)	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
42B:				
Fairbanks (85%)	Good	Improbable: excess fines	Improbable: excess fines	Good
42C:				
Fairbanks (90%)	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
42CG:				
Fairbanks strongly sloping (75%)	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Fairbanks steep (25%)	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope

Table 8--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name (% of map unit)	Roadfill	Sand	Gravel	Topsoil
42D:				
Fairbanks (85%)	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
42G:				
Fairbanks (90%)	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
44D:				
Steese (85%)	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
45D:				
Gilmore (85%)	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
Steese (15%)	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
45E:				
Gilmore (90%)	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope small stones depth to rock
51B:				
Saulich (90%)	Poor: wetness permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: wetness permafrost
51C:				
Saulich (90%)	Poor: wetness permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: wetness permafrost
61:				
Piledriver (90%)	Good	Probable	Probable	Poor: area reclaim
62:				
Peede (70%)	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Mosquito (25%)	Poor: wetness permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: excess humus wetness permafrost
64:				
Eielson (50%)	Good	Improbable: excess fines	Improbable: thin layer	Poor: area reclaim
Tanana (40%)	Poor: permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: permafrost
211:				
Chatanika (60%)	Poor: permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: permafrost

Table 8--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name (% of map unit)	Roadfill	Sand	Gravel	Topsoil
211: (cont'd)				
Goldstream (20%)	Poor: Wetness Permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: wetness permafrost
212:				
Goldstream (50%)	Poor: Wetness Permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: wetness permafrost
Bolio (45%)	Poor: low strength Wetness Permafrost	Improbable: excess humus permafrost	Improbable: excess humus permafrost	Poor: excess humus wetness permafrost
251:				
Tanana (70%)	Poor: Permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: permafrost
Mosquito (25%)	Poor: Wetness Permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: excess humus wetness permafrost
361:				
Jarvis (65%)	Fair	Probable	Probable	Fair: small stones
Chena (30%)	Good	Probable	Probable	Poor: area reclaim small stones too sandy
362:				
Fubar (40%)	Good	Probable	Probable	Poor: area reclaim small stones too sandy
Piledriver (40%)	Good	Probable	Probable	Poor: area reclaim
363:				
Jarvis (45%)	Fair	Probable	Probable	Fair: small stones
Salchaket (35%)	Good	Improbable: excess fines	Improbable: excess fines	---
411B:				
Minto (60%)	Good	Improbable: excess fines	Improbable: excess fines	Good
Chatanika (30%)	Poor: Permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: permafrost
411C:				
Minto (60%)	Good	Improbable: excess fines	Improbable: excess fines	Good

Table 8--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name (% of map unit)	Roadfill	Sand	Gravel	Topsoil
411C: (cont'd)				
Chatanika (30%)	Poor: permafrost	Improbable: excess fines permafrost	Improbable: excess fines permafrost	Poor: permafrost
421C:				
Fairbanks (45%)	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Steese (45%)	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: slope thin layer depth to rock
421D:				
Fairbanks (45%)	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Steese (45%)	Poor: slope depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: slope
452:				
Gilmore (70%)	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Poor: small stones depth to rock
Steese (30%)	Poor: depth to rock	Improbable: excess fines	Improbable: excess fines	Fair: slope thin layer depth to rock
611:				
Piledriver (50%)	Good	Probable	Probable	Poor: area reclaim
Eielson (40%)	Good	Improbable: excess fines	Improbable: thin layer	Poor: area reclaim
CL:				
Typic Cryorthents (80%)	Good	Improbable: excess fines	Improbable: excess fines	Good
Gv:				
Gravel pits (100%)	---	---	---	---
Lf:				
Dump areas (100%)	---	---	---	---
Rv:				
Riverwash (100%)	---	---	---	---
UC:				
Typic Cryorthents (45%)	Good	Probable	Probable	Poor: area reclaim
Urban land (45%)	---	---	---	---
W:				
Water (100%)	---	---	---	---

Table 8--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name (% of map unit)	Roadfill	Sand	Gravel	Topsoil
WAH:				
Typic Cryaquents (30%)	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Histic Cryaquepts (25%)	Poor: erodes easily	Improbable: excess fines	Improbable: excess fines	Poor: wetness
Terric Cryofibrists--- (20%)	Poor: low strength thin layer wetness	Improbable: excess humus excess fines	Improbable: excess humus	Poor: excess humus wetness

Table 9--WATER MANAGEMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for on-site investigation.)

Map symbol and soil name (% of map unit)	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
9:							
Histels, Terric (90%)	Severe: permafrost	Severe: excess humus permafrost	Severe: permafrost	Limitation: permafrost subsides ponding	Limitation: permafrost ponding	Limitation: permafrost ponding	Limitation: wetness permafrost
20:							
Mosquito (87%)-	Severe: permafrost	Severe: excess humus piping permafrost	Severe: permafrost	Limitation: permafrost subsides ponding	Limitation: permafrost ponding	Limitation: erodes easily permafrost ponding	Limitation: erodes easily wetness permafrost
21A:							
Goldstream----- (80%)	Severe: permafrost	Severe: piping wetness permafrost	Severe: permafrost	Limitation: frost action permafrost subsides	Limitation: wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
Chatanika (15%)	Severe: permafrost	Severe: piping permafrost	Severe: no water permafrost	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
21B:							
Goldstream----- (85%)	Severe: permafrost	Severe: piping wetness permafrost	Severe: permafrost	Limitation: frost action permafrost subsides	Limitation: wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
Chatanika (15%)	Severe: permafrost	Severe: piping permafrost	Severe: no water permafrost	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
22:							
Tanacross (85%)	Severe: permafrost	Severe: piping wetness permafrost	Severe: permafrost	Limitation: frost action permafrost subsides	Limitation: wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
25:							
Tanana (85%)---	Severe: permafrost	Severe: piping permafrost	Severe: no water	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
31:							
Eielson (60%)--	Moderate: seepage	Severe: piping	Moderate: deep to water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
Piledriver----- (30%)	Moderate: seepage	Severe: piping	Moderate: deep to water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily

Table 9--WATER MANAGEMENT--Continued

Map symbol and soil name (% of map unit)	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
32:							
Salchaket (90%)	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
35:							
North Pole----- (70%)	Severe: seepage	Severe: piping wetness	Slight	Limitation: cutbanks cave	Limitation	Limitation: erodes easily wetness	Limitation: erodes easily wetness
Mosquito (15%)-	Severe: permafrost	Severe: excess humus piping permafrost	Severe: permafrost	Limitation: permafrost subsides ponding	Limitation: permafrost ponding	Limitation: erodes easily permafrost ponding	Limitation: erodes easily wetness permafrost
36:							
Jarvis (95%)---	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: flooding cutbanks cave deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
37:							
Chena (90%)----	Severe: seepage	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones soil blowing droughty	Limitation: erodes easily large stones too sandy	Limitation: erodes easily large stones droughty
40A:							
Chatanika (90%)	Severe: permafrost	Severe: piping permafrost	Severe: no water permafrost	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
40B:							
Chatanika (90%)	Severe: permafrost	Severe: piping permafrost	Severe: no water permafrost	Limitation: frost action slope permafrost subsides	Limitation: erodes easily slope wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
40D:							
Chatanika (90%)	Severe: permafrost	Severe: piping permafrost	Severe: no water permafrost	Limitation: frost action slope permafrost subsides	Limitation: erodes easily slope wetness permafrost	Limitation: erodes easily slope wetness permafrost	Limitation: erodes easily slope wetness permafrost
41A:							
Minto (85%)----	Moderate: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: soil blowing subsides	Limitation: erodes easily soil blowing subsides	Limitation: erodes easily subsides
41B:							
Minto (85%)----	Moderate: seepage	Severe: piping	Severe: no water	Limitation: slope deep to water	Limitation: slope soil blowing subsides	Limitation: erodes easily soil blowing subsides	Limitation: erodes easily subsides

Table 9--WATER MANAGEMENT--Continued

Map symbol and soil name (% of map unit)	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
41C: Minto (85%)----	Severe: slope	Severe: piping	Severe: no water	Limitation: slope deep to water	Limitation: slope soil blowing subsides	Limitation: erodes easily slope soil blowing subsides	Limitation: erodes easily slope subsides
41D: Minto (85%)----	Severe: slope	Severe: piping	Severe: no water	Limitation: slope deep to water	Limitation: slope soil blowing subsides	Limitation: erodes easily slope soil blowing subsides	Limitation: erodes easily slope subsides
42B: Fairbanks (85%)	Moderate: seepage slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
42C: Fairbanks (90%)	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
42CG: Fairbanks------ strongly sloping (75%)	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
Fairbanks steep (25%)	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope
42D: Fairbanks (85%)	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope
42G: Fairbanks (90%)	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope
44D: Steese (85%)---	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope

Table 9--WATER MANAGEMENT--Continued

Map symbol and soil name (% of map unit)	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
45D:							
Gilmore (85%)--	Severe: seepage slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
Steese (15%)---	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope soil blowing	Limitation: erodes easily slope
45E:							
Gilmore (90%)--	Severe: seepage slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
51B:							
Saulich (90%)--	Severe: permafrost	Severe: piping wetness permafrost	Severe: permafrost	Limitation: frost action permafrost subsides	Limitation: slope wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
51C:							
Saulich (90%)--	Severe: permafrost	Severe: piping wetness permafrost	Severe: permafrost	Limitation: frost action permafrost subsides	Limitation: slope wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
61:							
Piledriver----- (90%)	Moderate: seepage	Severe: piping	Moderate: deep to water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
62:							
Peede (70%)----	Moderate: seepage	Severe: piping wetness ponding	Slight	Favorable	Limitation: wetness ponding	Limitation: erodes easily wetness ponding	Limitation: erodes easily wetness
Mosquito (25%)-	Severe: permafrost	Severe: excess humus piping permafrost	Severe: permafrost	Limitation: permafrost subsides ponding	Limitation: permafrost ponding	Limitation: erodes easily permafrost ponding	Limitation: erodes easily wetness permafrost
64:							
Eielson (50%)--	Moderate: seepage	Severe: piping	Moderate: deep to water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
Tanana (40%)---	Severe: permafrost	Severe: piping permafrost	Severe: no water	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
211:							
Chatanika (60%)	Severe: permafrost	Severe: piping permafrost	Severe: no water permafrost	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost

Table 9--WATER MANAGEMENT--Continued

Map symbol and soil name (% of map unit)	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
211: (cont'd)							
Goldstream----- (20%)	Severe: permafrost	Severe: piping wetness permafrost	Severe: permafrost	Limitation: frost action permafrost subsides	Limitation: wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
212:							
Goldstream----- (50%)	Severe: permafrost	Severe: piping wetness permafrost	Severe: permafrost	Limitation: frost action permafrost subsides	Limitation: wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
Bolio (45%)----	Severe: permafrost	Severe: excess humus permafrost	Severe: permafrost	Limitation: permafrost subsides ponding	Limitation: permafrost ponding	Limitation: permafrost ponding	Limitation: wetness permafrost
251:							
Tanana (70%)---	Severe: permafrost	Severe: piping permafrost	Severe: no water	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
Mosquito (25%)-	Severe: permafrost	Severe: excess humus piping permafrost	Severe: permafrost	Limitation: permafrost subsides ponding	Limitation: permafrost ponding	Limitation: erodes easily permafrost ponding	Limitation: erodes easily wetness permafrost
361:							
Jarvis (65%)---	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: flooding cutbanks cave deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Chena (30%)----	Severe: seepage	Severe: large stones seepage	Severe: no water	Limitation: deep to water	Limitation: large stones soil blowing droughty	Limitation: erodes easily large stones too sandy	Limitation: erodes easily large stones droughty
362:							
Fubar (40%)----	Severe: seepage	Severe: large stones seepage	Severe: cutbanks cave	Limitation: deep to water	Limitation: large stones droughty	Limitation: large stones too sandy soil blowing	Limitation: large stones droughty
Piledriver----- (40%)	Moderate: seepage	Severe: piping	Moderate: deep to water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
363:							
Jarvis (45%)---	Severe: seepage	Severe: seepage piping	Severe: no water	Limitation: flooding cutbanks cave deep to water	Limitation: erodes easily	Limitation: erodes easily	Limitation: erodes easily
Salchaket (35%)	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily

Table 9--WATER MANAGEMENT--Continued

Map symbol and soil name (% of map unit)	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
411B:							
Minto (60%)----	Moderate: seepage	Severe: piping	Severe: no water	Limitation: slope deep to water	Limitation: slope soil blowing subsides	Limitation: erodes easily soil blowing subsides	Limitation: erodes easily subsides
Chatanika (30%)	Severe: permafrost	Severe: piping permafrost	Severe: no water permafrost	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
411C:							
Minto (60%)----	Severe: slope	Severe: piping	Severe: no water	Limitation: slope deep to water	Limitation: slope soil blowing subsides	Limitation: erodes easily slope soil blowing subsides	Limitation: erodes easily slope subsides
Chatanika (30%)	Severe: permafrost	Severe: piping permafrost	Severe: no water permafrost	Limitation: frost action permafrost subsides	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost	Limitation: erodes easily wetness permafrost
421C:							
Fairbanks (45%)	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
Steese (45%)---	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
421D:							
Fairbanks (45%)	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily slope soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
Steese (45%)---	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
452:							
Gilmore (70%)--	Severe: seepage slope depth to rock	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
Steese (30%)---	Severe: slope	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: slope soil blowing depth to rock	Limitation: erodes easily slope depth to rock	Limitation: erodes easily slope depth to rock
611:							
Piledriver----- (50%)	Moderate: seepage	Severe: piping	Moderate: deep to water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily

Table 9--WATER MANAGEMENT--Continued

Map symbol and soil name (% of map unit)	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
611: (cont'd)							
Eielson (40%)--	Moderate: seepage	Severe: piping	Moderate: deep to water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
CL:							
Typic---------- Cryorthents (80%)	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
Gv:							
Gravel pits---- (100%)	---	---	---	---	---	---	---
Lf:							
Dump areas----- (100%)	---	---	---	---	---	---	---
Rv:							
Riverwash----- (100%)	---	---	---	---	---	---	---
UC:							
Typic---------- Cryorthents (45%)	Severe: seepage	Severe: piping	Severe: no water	Limitation: deep to water	Limitation: erodes easily soil blowing	Limitation: erodes easily soil blowing	Limitation: erodes easily
Urban land----- (45%)	---	---	---	---	---	---	---
W:							
Water (100%)---	---	---	---	---	---	---	---
WAH:							
Typic---------- Cryaquents (30%)	Moderate: seepage	Severe: piping wetness ponding	Slight	Limitation: frost action	Limitation: wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
Histic--------- Cryaquepts (25%)	Moderate: seepage	Severe: piping wetness	Moderate: slow refill	Limitation: frost action subsides	Limitation: wetness	Limitation: erodes easily wetness	Limitation: erodes easily wetness
Terric--------- Cryofibrists (20%)	Slight	Severe: excess humus ponding	Slight	Limitation: frost action subsides ponding	Limitation: ponding	Limitation: ponding	Limitation: wetness

Table 10--ENGINEERING INDEX PROPERTIES

Map symbol and soil name (% of map unit)	Depth	USDA texture	Classification		Rock Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
9:												
Histels, Terric--	0-8	Peat	PT	A-8	---	0	0	0	---	---	---	NP
(90%)	8-25	Mucky peat	PT	A-8	---	0	0	0	0	0	---	NP
	25-29	Permanently frozen mucky peat	PT	A-8	---	0	0	0	0	0	---	NP
	29-39	Permanently frozen very fine sandy loam, permanently frozen silt loam	OL, ML	A-4, A-5	---	0	100	100	95-100	75-90	30-50	NP-10
20:												
Mosquito (87%)---	0-9	Peat, mucky peat	PT	A-8	0	0	0	0	---	---	---	---
	9-20	Very fine sandy loam, silt loam, stratified silt loam to loamy fine sand	ML, OL	A-4	0	0	100	100	80-100	70-90	30-40	NP-10
	20-66	Permanently frozen silt loam, stratified permanently frozen silt loam to permanently frozen loamy fine sand	ML	A-4	0	---	100	100	80-100	70-90	30-40	NP-10
21A:												
Goldstream (80%)-	0-9	Peat, mucky peat	PT	A-8	---	0	0	0	---	---	---	---
	9-12	Mucky silt loam	ML, OL	A-4, A-5	---	0	100	100	95-100	75-90	30-50	NP-10
	12-20	Silt loam	ML	A-4	---	0	95-100	95-100	85-100	75-95	25-35	NP-10
	20-60	Permanently frozen silt loam	ML	A-4	---	---	0	0	---	---	---	---
Chatanika (15%)--	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-6	Mucky silt loam	ML, OL	A-4	---	---	100	100	50-100	50-100	70-100	NP-15
	6-22	Silt loam	ML	A-4	---	---	100	100	50-100	50-100	25-35	NP-5
	22-60	Permanently frozen silt loam	ML	A-4	---	---	100	100	50-100	50-100	---	---
21B:												
Goldstream (85%)-	0-9	Peat, mucky peat	PT	A-8	---	0	0	0	---	---	---	---
	9-12	Mucky silt loam	ML, OL	A-4, A-5	---	0	100	100	95-100	75-90	30-50	NP-10
	12-20	Silt loam	ML	A-4	---	0	95-100	95-100	85-100	75-95	25-35	NP-10
	20-60	Permanently frozen silt loam	ML	A-4	---	---	0	0	---	---	---	---
Chatanika (15%)--	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-6	Mucky silt loam	ML, OL	A-4	---	---	100	100	50-100	50-100	70-100	NP-15
	6-22	Silt loam	ML	A-4	---	---	100	100	50-100	50-100	25-35	NP-5
	22-60	Permanently frozen silt loam	ML	A-4	---	---	100	100	50-100	50-100	---	---
22:												
Tanacross (85%)--	0-10	Peat	PT	A-8	0	0	0	0	---	---	---	---
	10-12	Mucky silt loam	ML, OL	A-4	0	0	100	100	80-100	70-90	30-40	NP-10
	12-16	Stratified fine sandy loam to silt loam	ML	A-4	0	0	100	100	50-100	15-100	0-40	NP-10
	16-72	Stratified permanently frozen fine sandy loam to permanently frozen silt loam	ML	A-4	---	---	0	0	---	---	---	---
25:												
Tanana (85%)-----	0-5	Peat	PT	A-8	---	---	---	---	---	---	---	---
	5-8	Silt loam, mucky silt loam	ML, OL	A-4	0	0	100	100	95-100	75-90	30-40	NP-10
	8-28	Silt loam, stratified silt loam to loamy fine sand	ML	A-4	0	0	100	100	80-100	70-90	30-40	NP-10
	28-72	Permanently frozen silt loam, stratified permanently frozen silt loam to permanently frozen loamy fine sand	ML	A-4	0	0	100	100	80-100	70-90	---	---
31:												
Eielson (60%)----	0-3	Peat	PT	A-8	0	0	---	---	---	---	---	---
	3-6	Very fine sandy loam	ML	A-4	0	0	100	100	90-100	65-75	25-30	NP-5
	6-71	Stratified silt loam to fine sand, very fine sandy loam	SM, ML	A-4	0	0	100	95-100	85-95	40-65	25-30	NP-5
	71-77	Very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	0	15-35	50-70	30-55	20-30	5-10	---	NP

Table 10--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name (% of map unit)	Depth	USDA texture	Classification		Rock Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
31: (cont'd)												
Piledriver (30%)-	0-2	Mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-4	Stratified fine sand to silt loam, very fine sandy loam	ML	A-4	---	0	100	100	50-100	0-100	25-30	NP-5
	4-30	Stratified sand to fine sand to very fine sandy loam	ML, SM	A-4, A-3	---	0-5	50-100	25-100	0-100	0-55	20-25	NP-5
	30-72	Sand, very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	---	0-15	50-100	25-100	0-100	0-55	0-0	NP
32:												
Salchaket (90%)--	0-3	Very fine sandy loam	ML	A-4	0	0	100	100	90-100	65-75	25-30	NP-5
	3-63	Stratified silt loam to fine sand	ML, SM	A-4	0	0	100	95-100	85-95	40-65	25-30	NP-5
	63-72	Very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	0	15-35	50-70	30-55	20-30	5-10	---	NP
35:												
North Pole (70%)-	0-3	Peat	PT	A-8	0	0	0	0	---	---	---	---
	3-6	Muck	PT	A-8	0	0	0	0	---	---	---	---
	6-22	Stratified fine sand to silt loam	SM, ML	A-4	0	0	100	100	80-100	40-80	0-30	NP-10
	22-72	Gravelly coarse sand	GP, SP	A-1	0	0	70-100	30-100	0-40	0-10	0-0	NP
Mosquito (15%)---	0-9	Peat, mucky peat	PT	A-8	0	0	0	0	---	---	---	---
	9-20	Very fine sandy loam, silt loam, stratified silt loam to loamy fine sand	ML, OL	A-4	0	0	100	100	80-100	70-90	30-40	NP-10
	20-66	Permanently frozen silt loam, stratified permanently frozen silt loam to permanently frozen loamy fine sand	ML	A-4	0	---	100	100	80-100	70-90	30-40	NP-10
36:												
Jarvis (95%)-----	0-2	Mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-6	Stratified fine sand to silt loam, very fine sandy loam	ML	A-4	---	0	100	100	50-100	0-100	25-30	NP-5
	6-24	Stratified sand to fine sand to very fine sandy loam	ML, SM	A-4, A-3	---	0-5	50-100	25-100	0-100	0-55	20-25	NP-5
	24-51	Sand, very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	---	0-15	50-100	25-100	0-100	0-55	0-0	NP
37:												
Chena (90%)------	0-2	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-7	Stratified fine sand to fine sandy loam to very fine sandy loam, fine sandy loam, fine sand	ML	A-4	---	0-15	90-100	90-100	70-90	50-70	---	NP
	7-60	Coarse sand, sand, very gravelly sand, very cobbly sand	GP, SP	A-1	---	30-40	40-55	35-50	15-35	0-5	---	NP
40A:												
Chatanika (90%)--	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-6	Mucky silt loam	ML, OL	A-4	---	---	100	100	50-100	50-100	70-100	NP-15
	6-22	Silt loam	ML	A-4	---	---	100	100	50-100	50-100	25-35	NP-5
	22-60	Permanently frozen silt loam	ML	A-4	---	---	100	100	50-100	50-100	---	---
40B:												
Chatanika (90%)--	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-6	Mucky silt loam	ML, OL	A-4	---	---	100	100	50-100	50-100	70-100	NP-15
	6-22	Silt loam	ML	A-4	---	---	100	100	50-100	50-100	25-35	NP-5
	22-60	Permanently frozen silt loam	ML	A-4	---	---	100	100	50-100	50-100	---	---

Table 10--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name (% of map unit)	Depth	USDA texture	Classification		Rock Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
40D:												
Chatanika (90%)--	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-6	Mucky silt loam	ML, OL	A-4	---	---	100	100	50-100	50-100	70-100	NP-15
	6-22	Silt loam	ML	A-4	---	---	100	100	50-100	50-100	25-35	NP-5
	22-60	Permanently frozen silt loam	ML	A-4	---	---	100	100	50-100	50-100	---	---
41A:												
Minto (85%)------	0-5	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	5-9	Silt loam	ML	A-4	---	0	100	100	90-100	85-100	25-40	NP-10
	9-16	Silt loam, silt	ML	A-4	---	0	100	100	90-100	85-100	15-25	NP-5
	16-71	Silt loam, silt	ML	A-4	---	0	100	100	95-100	85-100	15-25	NP-5
41B:												
Minto (85%)------	0-2	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-9	Silt loam	ML	A-4	---	0	100	100	90-100	85-100	25-40	NP-10
	9-16	Silt loam, silt	ML	A-4	---	0	100	100	90-100	85-100	15-25	NP-5
	16-71	Silt loam, silt	ML	A-4	---	0	100	100	95-100	85-100	15-25	NP-5
41C:												
Minto (85%)------	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-9	Silt loam	ML	A-4	---	0	100	100	90-100	85-100	25-40	NP-10
	9-16	Silt loam, silt	ML	A-4	---	0	100	100	90-100	85-100	15-25	NP-5
	16-71	Silt loam, silt	ML	A-4	---	0	100	100	95-100	85-100	15-25	NP-5
41D:												
Minto (85%)------	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-9	Silt loam	ML	A-4	---	0	100	100	90-100	85-100	25-40	NP-10
	9-16	Silt loam, silt	ML	A-4	---	0	100	100	90-100	85-100	15-25	NP-5
	16-71	Silt loam, silt	ML	A-4	---	0	100	100	95-100	85-100	15-25	NP-5
42B:												
Fairbanks (85%)--	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-30	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	30-72	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
42C:												
Fairbanks (90%)--	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-30	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	30-72	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
42CG:												
Fairbanks--------	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
strongly	3-30	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
sloping (75%)	30-72	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
Fairbanks steep--	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
(25%)	3-30	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	30-72	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
42D:												
Fairbanks (85%)--	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-30	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	30-72	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
42G:												
Fairbanks (90%)--	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-30	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	30-72	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10

Table 10--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name (% of map unit)	Depth	USDA texture	Classification		Rock Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
44D:												
Steese (85%)-----	0-2	Peat	PT	A-8	---	---	---	---	---	---	---	---
	2-5	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	5-27	Silt, silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	27-33	Very channery silt loam, extremely channery silt loam	GM	A-2, A-4	---	30-40	55-65	50-60	35-50	25-40	---	NP
	33-40	Weathered bedrock			---	---	0	0	---	---	---	---
45D:												
Gilmore (85%)----	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-6	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	6-17	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
	17-24	Very channery silt loam, extremely channery silt loam	GM	A-2, A-4	---	30-40	55-65	50-60	35-50	25-40	---	NP
	24-28	Weathered bedrock			---	---	0	0	---	---	---	---
Steese (15%)-----	0-2	Peat	PT	A-8	---	---	---	---	---	---	---	---
	2-5	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	5-27	Silt, silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	27-33	Very channery silt loam, extremely channery silt loam	GM	A-2, A-4	---	30-40	55-65	50-60	35-50	25-40	---	NP
	33-40	Weathered bedrock			---	---	0	0	---	---	---	---
45E:												
Gilmore (90%)----	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-6	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	6-17	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
	17-24	Very channery silt loam, extremely channery silt loam	GM	A-2, A-4	---	30-40	55-65	50-60	35-50	25-40	---	NP
	24-28	Weathered bedrock			---	---	0	0	---	---	---	---
51B:												
Saulich (90%)----	0-9	Peat, mucky peat	PT	A-8	---	0	0	0	---	---	---	---
	9-21	Silt loam, mucky silt loam	OL, ML	A-4	---	0	95-100	95-100	90-100	65-75	30-40	NP-10
	21-72	Permanently frozen silt loam	ML	A-4	---	0	95-100	95-100	90-100	65-75	30-40	NP-10
51C:												
Saulich (90%)----	0-9	Peat, mucky peat	PT	A-8	---	0	0	0	---	---	---	---
	9-21	Silt loam, mucky silt loam	OL, ML	A-4	---	0	95-100	95-100	90-100	65-75	30-40	NP-10
	21-72	Permanently frozen silt loam	ML	A-4	---	0	95-100	95-100	90-100	65-75	30-40	NP-10
61:												
Piledriver (90%)-	0-2	Mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-4	Stratified fine sand to silt loam, very fine sandy loam	ML	A-4	---	0	100	100	50-100	0-100	25-30	NP-5
	4-30	Stratified sand to fine sand to very fine sandy loam	ML, SM	A-4, A-3	---	0-5	50-100	25-100	0-100	0-55	20-25	NP-5
	30-72	Sand, very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	---	0-15	50-100	25-100	0-100	0-55	0-0	NP
62:												
Peede (70%)------	0-5	Mucky peat, muck	PT	A-8	---	---	0	0	---	---	---	---
	5-47	Silt loam	ML	A-4	---	---	100	100	85-100	50-90	20-35	NP-10
	47-55	Sand, fine sand	SP, SM	A-1	---	---	95-100	95-100	70-90	45-65	---	---
	55-75	Very gravelly extremely gravelly sand	GM, GC	A-1	0	0	15-100	10-50	0-45	0-20	---	---

Table 10--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name (% of map unit)	Depth	USDA texture	Classification		Rock Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
62: (cont'd)												
Mosquito (25%)---	0-9	Peat, mucky peat	PT	A-8	0	0	0	0	---	---	---	---
	9-20	Very fine sandy loam, silt loam, stratified silt loam to loamy fine sand	ML, OL	A-4	0	0	100	100	80-100	70-90	30-40	NP-10
	20-66	Permanently frozen silt loam, stratified permanently frozen silt loam to permanently frozen loamy fine sand	ML	A-4	0	---	100	100	80-100	70-90	30-40	NP-10
64:												
Eielson (50%)----	0-3	Peat	PT	A-8	0	0	---	---	---	---	---	---
	3-6	Very fine sandy loam	ML	A-4	0	0	100	100	90-100	65-75	25-30	NP-5
	6-71	Stratified silt loam to fine sand, very fine sandy loam	SM, ML	A-4	0	0	100	95-100	85-95	40-65	25-30	NP-5
	71-77	Very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	0	15-35	50-70	30-55	20-30	5-10	---	NP
Tanana (40%)-----	0-5	Peat	PT	A-8	---	---	---	---	---	---	---	---
	5-8	Silt loam, mucky silt loam	ML, OL	A-4	0	0	100	100	95-100	75-90	30-40	NP-10
	8-28	Silt loam, stratified silt loam to loamy fine sand	ML	A-4	0	0	100	100	80-100	70-90	30-40	NP-10
	28-72	Permanently frozen silt loam, stratified permanently frozen silt loam to permanently frozen loamy fine sand	ML	A-4	0	0	100	100	80-100	70-90	---	---
211:												
Chatanika (60%)--	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-6	Mucky silt loam	ML, OL	A-4	---	---	100	100	50-100	50-100	70-100	NP-15
	6-22	Silt loam	ML	A-4	---	---	100	100	50-100	50-100	25-35	NP-5
	22-60	Permanently frozen silt loam	ML	A-4	---	---	100	100	50-100	50-100	---	---
Goldstream (20%)-	0-9	Peat, mucky peat	PT	A-8	---	0	0	0	---	---	---	---
	9-12	Mucky silt loam	ML, OL	A-4, A-5	---	0	100	100	95-100	75-90	30-50	NP-10
	12-20	Silt loam	ML	A-4	---	0	95-100	95-100	85-100	75-95	25-35	NP-10
	20-60	Permanently frozen silt loam	ML	A-4	---	---	0	0	---	---	---	---
212:												
Goldstream (50%)-	0-9	Peat, mucky peat	PT	A-8	---	0	0	0	---	---	---	---
	9-12	Mucky silt loam	ML, OL	A-4, A-5	---	0	100	100	95-100	75-90	30-50	NP-10
	12-20	Silt loam	ML	A-4	---	0	95-100	95-100	85-100	75-95	25-35	NP-10
	20-60	Permanently frozen silt loam	ML	A-4	---	---	0	0	---	---	---	---
Bolio (45%)------	0-5	Peat	PT	A-8	0	0	---	---	---	---	---	---
	5-12	Mucky peat	PT	A-8	0	0	---	---	---	---	---	---
	12-60	Permanently frozen mucky peat	PT	A-8	0	0	---	---	---	---	---	---
251:												
Tanana (70%)-----	0-6	Peat	PT	A-8	---	---	---	---	---	---	---	---
	6-8	Silt loam, mucky silt loam	ML, OL	A-4	0	0	100	100	95-100	75-90	30-40	NP-10
	8-16	Silt loam, stratified silt loam to loamy fine sand	ML	A-4	0	0	100	100	80-100	70-90	30-40	NP-10
	16-72	Permanently frozen silt loam, stratified permanently frozen silt loam to permanently frozen loamy fine sand	ML	A-4	0	0	100	100	80-100	70-90	---	---
Mosquito (25%)---	0-10	Peat, mucky peat	PT	A-8	0	0	0	0	---	---	---	---
	10-20	Very fine sandy loam, silt loam, stratified silt loam to loamy fine sand	ML, OL	A-4	0	0	100	100	80-100	70-90	30-40	NP-10
	20-66	Permanently frozen silt loam, stratified permanently frozen silt loam to permanently frozen loamy fine sand	ML	A-4	0	---	100	100	80-100	70-90	30-40	NP-10

Table 10--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name (% of map unit)	Depth	USDA texture	Classification		Rock Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
361:												
Jarvis (65%)----	0-2	Mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-6	Stratified fine sand to silt loam, very fine sandy loam	ML	A-4	---	0	100	100	50-100	0-100	25-30	NP-5
	6-24	Stratified sand to fine sand to very fine sandy loam	ML, SM	A-4, A-3	---	0-5	50-100	25-100	0-100	0-55	20-25	NP-5
	24-51	Sand, very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	---	0-15	50-100	25-100	0-100	0-55	0-0	NP
Chena (30%)-----	0-2	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-7	Stratified fine sand to fine sandy loam to very fine sandy loam, fine sandy loam, fine sand	ML, SC-SM	A-4, A-3	---	0-15	90-100	90-100	70-90	50-70	---	NP
	7-60	Coarse sand, sand, very gravelly sand, very cobbly sand	GP, SP	A-1	---	30-40	40-55	35-50	15-35	0-5	---	NP
362:												
Fubar (40%)-----	0-2	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-4	Stratified fine sand to silt loam, very fine sandy loam	ML	A-3, A-4	0	0-10	95-100	90-100	50-100	0-100	25-30	NP-5
	4-60	Very gravelly extremely gravelly coarse sand, sand, fine sand	GP, GP-GM, SP, SP-SM	A-1, A-3	0	15-45	50-75	30-55	15-35	0-10	---	NP
Piledriver (40%)-	0-2	Mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-4	Stratified fine sand to silt loam, very fine sandy loam	ML	A-4	---	0	100	100	50-100	0-100	25-30	NP-5
	4-30	Stratified sand to fine sand to very fine sandy loam	ML, SM	A-4, A-3	---	0-5	50-100	25-100	0-100	0-55	20-25	NP-5
	30-72	Sand, very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	---	0-15	50-100	25-100	0-100	0-55	0-0	NP
363:												
Jarvis (45%)----	0-2	Mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-6	Stratified fine sand to silt loam, very fine sandy loam	ML	A-4	---	0	100	100	50-100	0-100	25-30	NP-5
	6-24	Stratified sand to fine sand to very fine sandy loam	ML, SM	A-4, A-3	---	0-5	50-100	25-100	0-100	0-55	20-25	NP-5
	24-51	Sand, very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	---	0-15	50-100	25-100	0-100	0-55	0-0	NP
Salchaket (35%)-	0-3	Very fine sandy loam	ML	A-4	0	0	100	100	90-100	65-75	25-30	NP-5
	3-63	Stratified silt loam to fine sand	ML, SM	A-4	0	0	100	95-100	85-95	40-65	25-30	NP-5
	63-72	Very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	0	15-35	50-70	30-55	20-30	5-10	---	NP
411B:												
Minto (60%)-----	0-5	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	5-9	Silt loam	ML	A-4	---	0	100	100	90-100	85-100	25-40	NP-10
	9-16	Silt loam, silt	ML	A-4	---	0	100	100	90-100	85-100	15-25	NP-5
	16-71	Silt loam, silt	ML	A-4	---	0	100	100	95-100	85-100	15-25	NP-5
Chatanika (30%)--	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-6	Mucky silt loam	ML, OL		---	---	100	100	50-100	50-100	70-100	NP-15
	6-22	Silt loam	ML	A-4	---	---	100	100	50-100	50-100	25-35	NP-5
	22-60	Permanently frozen silt loam	ML	A-4	---	---	100	100	50-100	50-100	---	---

Table 10--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name (% of map unit)	Depth	USDA texture	Classification		Rock Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
411C:												
Minto (60%)------	0-5	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	5-9	Silt loam	ML	A-4	---	0	100	100	90-100	85-100	25-40	NP-10
	9-16	Silt loam, silt	ML	A-4	---	0	100	100	90-100	85-100	15-25	NP-5
	16-71	Silt loam, silt	ML	A-4	---	0	100	100	95-100	85-100	15-25	NP-5
Chatanika (30%)--	0-4	Peat, mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	4-6	Mucky silt loam	ML, OL		---	---	100	100	50-100	50-100	70-100	NP-15
	6-22	Silt loam	ML	A-4	---	---	100	100	50-100	50-100	25-35	NP-5
	22-60	Permanently frozen silt loam	ML	A-4	---	---	100	100	50-100	50-100	---	---
421C:												
Fairbanks (45%)--	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-30	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	30-72	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
Steese (45%)-----	0-2	Peat	PT	A-8	---	---	---	---	---	---	---	---
	2-5	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	5-27	Silt, silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	27-33	Very channery silt loam, extremely channery silt loam	GM	A-2, A-4	---	30-40	55-65	50-60	35-50	25-40	---	NP
	33-40	Weathered bedrock			---	---	0	0	---	---	---	---
421D:												
Fairbanks (45%)--	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-30	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	30-72	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
Steese (45%)-----	0-2	Peat	PT	A-8	---	---	---	---	---	---	---	---
	2-5	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	5-27	Silt, silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	27-33	Very channery silt loam, extremely channery silt loam	GM	A-2, A-4	---	30-40	55-65	50-60	35-50	25-40	---	NP
	33-40	Weathered bedrock			---	---	0	0	---	---	---	---
452:												
Gilmore (70%)----	0-3	Peat	PT	A-8	---	---	---	---	---	---	---	---
	3-6	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	30-40	NP-10
	6-17	Silt loam, silt	ML	A-4	---	0	100	100	85-95	75-85	25-35	NP-10
	17-24	Very channery silt loam, extremely channery silt loam	GM	A-2, A-4	---	30-40	55-65	50-60	35-50	25-40	---	NP
	24-28	Weathered bedrock			---	---	0	0	---	---	---	---
Steese (30%)-----	0-2	Peat	PT	A-8	---	---	---	---	---	---	---	---
	2-5	Silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	5-27	Silt, silt loam	ML	A-4	---	0	100	100	90-100	80-90	25-35	NP-10
	27-33	Very channery silt loam, extremely channery silt loam	GM	A-2, A-4	---	30-40	55-65	50-60	35-50	25-40	---	NP
	33-40	Weathered bedrock			---	---	0	0	---	---	---	---
611:												
Piledriver (50%)-	0-2	Mucky peat	PT	A-8	---	---	---	---	---	---	---	---
	2-4	Stratified fine sand to silt loam, very fine sandy loam	ML	A-4	---	0	100	100	50-100	0-100	25-30	NP-5
	4-30	Stratified sand to fine sand to very fine sandy loam	ML, SM	A-4, A-3	---	0-5	50-100	25-100	0-100	0-55	20-25	NP-5
	30-72	Sand, very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	---	0-15	50-100	25-100	0-100	0-55	0-0	NP

Table 10--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name (% of map unit)	Depth	USDA texture	Classification		Rock Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
611: (cont'd)												
Eielson (40%)----	0-3	Peat	PT	A-8	0	0	---	---	---	---	---	---
	3-6	Very fine sandy loam	ML	A-4	0	0	100	100	90-100	65-75	25-30	NP-5
	6-71	Stratified silt loam to fine sand, very fine sandy loam	SM, ML	A-4	0	0	100	95-100	85-95	40-65	25-30	NP-5
	71-77	Very gravelly sand, extremely cobbly sand	GP-GM, SP-SM	A-1	0	15-35	50-70	30-55	20-30	5-10	---	NP
CL:												
Typic Cryorthents (80%)	0-39	Stratified gravelly loamy sand to gravelly fine sandy loam to gravelly silt loam	GC-GM	A-2	---	---	70-100	50-75	5-60	5-60	0-15	NP-5
	39-67	Stratified fine sand to silt loam	SC-SM, ML	A-4, A-2	---	---	100	95-100	85-95	40-65	25-35	NP-10
	67-75	Very gravelly sand	SW-SM	A-1	---	---	100	25-100	0-100	0-55	---	---
Gv:												
Gravel pits------	---	---	---	---	---	---	---	---	---	---	---	---
Lf:												
Dump areas-------	---	---	---	---	---	---	---	---	---	---	---	---
Rv:												
Riverwash--------	---	---	---	---	---	---	---	---	---	---	---	---
UC:												
Typic Cryorthents (45%)	0-30	Stratified gravelly loamy sand to gravelly fine sandy loam to gravelly silt loam	GC-GM	A-2	---	---	70-100	50-75	5-60	5-60	0-15	NP-5
	30-67	Stratified fine sand to silt loam	SC-SM, ML	A-4, A-2	---	---	100	95-100	85-95	40-65	25-35	NP-10
	67-75	Very gravelly sand	SW-SM	A-1	---	---	100	25-100	0-100	0-55	---	---
Urban land-------	---	---	---	---	---	---	---	---	---	---	---	---
W:												
Water------------	---	---	---	---	---	---	---	---	---	---	---	---
WAH:												
Typic Cryaquents- (30%)	0-4	Mucky peat, muck	PT	A-8	---	---	---	---	---	---	---	---
	4-72	Silt loam	ML, CL	A-5, A-4	---	---	0	100	85-100	75-95	25-40	NP-10
Histic Cryaquepts (25%)	0-13	Peat, mucky peat, muck	PT	A-8	---	---	---	---	---	---	---	---
	13-30	Silt loam, very fine sandy loam	ML	A-4	---	---	100	100	50-100	30-100	25-35	NP-10
	30-72	Very fine sand, silt loam	ML, SM	A-4	---	---	100	100	50-100	25-100	25-35	NP-10
Terric----------	0-12	Peat	PT	A-8	0	0	0	0	---	---	---	---
Cryofibrists	12-39	Muck	PT	A-8	0	0	0	0	---	---	---	---
(20%)	39-66	Very fine sandy loam, silt loam, silty clay loam	CL-ML	A-5	0	0	100	100	80-100	80-100	30-45	NP-30

Table 11--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer.)

Map symbol and soil name (% of map unit)	Depth	Clay	Moist bulk density	Ksat	Available water capacity	Soil reaction	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									K	Kf	T		
	In	Pct	g/cc	um/sec	In/in	pH	Pct	Pct					
9:													
Histels, Terric (90%)---	0-8	0-0	0.05-0.10	42.00-141.0	0.10-0.20	3.6-4.5	---	85-95	.05	.05	1	8	0
	8-25	0-0	0.07-0.18	4.00-14.00	0.35-0.55	3.6-5.0	---	75-90	.05	.05			
	25-29	0-0	0.07-0.18	0.00-0.01	---	3.6-5.0	---	75-90	.05	.05			
	29-39	0-10	1.00-1.20	0.00-0.01	---	5.1-6.0	---	5.0-10	---	---			
20:													
Mosquito (87%)----------	0-9	---	0.05-0.18	4.00-141.0	0.05-0.50	5.1-6.1	0.0-2.9	75-90	.05	.05	1	8	0
	9-20	0-10	0.80-1.40	4.23-14.11	0.24-0.28	5.6-6.6	0.0-2.9	5.0-20	.37	.37			
	20-66	0-10	---	0.00-0.01	---	5.6-6.6	---	---	---	---			
21A:													
Goldstream (80%)--------	0-9	0-2	0.08-0.12	14.11-42.34	0.25-0.30	3.6-4.5	0.0-2.9	85-95	.05	.05	2	8	0
	9-12	5-10	1.00-1.20	4.23-14.11	0.20-0.22	4.5-5.5	0.0-2.9	---	.37	.37			
	12-20	5-10	1.00-1.20	4.23-14.11	0.20-0.22	4.5-5.5	0.0-2.9	---	.55	.55			
	20-60	---	---	---	---	4.5-5.5	---	---	---	---			
Chatanika (15%)---------	0-4	---	0.05-0.18	4.00-141.0	0.05-0.55	4.5-6.1	---	75-95	.05	.05	3	2	134
	4-6	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-5.5	---	7.0-12	.37	.37			
	6-22	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-6.1	---	1.0-5.0	.43	.43			
	22-60	---	1.20-1.40	0.00-0.10	0.00-0.00	5.6-6.5	---	1.0-5.0	---	---			
21B:													
Goldstream (85%)--------	0-9	0-2	0.08-0.12	14.11-42.34	0.25-0.30	3.6-4.5	0.0-2.9	85-95	.05	.05	2	8	0
	9-12	5-10	1.00-1.20	4.23-14.11	0.20-0.22	4.5-5.5	0.0-2.9	---	.37	.37			
	12-20	5-10	1.00-1.20	4.23-14.11	0.20-0.22	4.5-5.5	0.0-2.9	---	.55	.55			
	20-60	---	---	---	---	4.5-5.5	---	---	---	---			
Chatanika (15%)---------	0-4	---	0.05-0.18	4.00-141.0	0.05-0.55	4.5-6.1	---	75-95	.05	.05	3	2	134
	4-6	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-5.5	---	7.0-12	.37	.37			
	6-22	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-6.1	---	1.0-5.0	.43	.43			
	22-60	---	1.20-1.40	0.00-0.10	0.00-0.00	5.6-6.5	---	1.0-5.0	---	---			
22:													
Tanacross (85%)---------	0-10	0-3	0.05-0.10	42.00-141.0	0.05-0.35	3.5-5.0	0.0-2.9	85-95	.05	.05	1	8	0
	10-12	0-10	0.80-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	5.0-10	.37	.37			
	12-16	0-10	1.20-1.40	4.23-42.00	0.17-0.22	5.1-6.0	0.0-2.9	0.0-1.0	.43	.43			
	16-72	---	1.20-1.40	0.00-0.01	---	---	---	---	---	---			
25:													
Tanana (85%)------------	0-5	---	---	42.00-141.0	0.05-0.35	3.5-5.0	---	85-95	---	---	2	8	0
	5-8	5-10	1.10-1.20	4.23-14.11	0.20-0.23	5.1-6.0	0.0-2.9	2.0-6.0	.37	.37			
	8-28	5-10	1.10-1.20	4.23-14.11	0.20-0.23	5.6-7.3	0.0-2.9	0.0-2.0	.43	.43			
	28-72	5-10	1.10-1.20	4.23-14.11	---	5.6-7.3	---	0.0-1.0	---	---			
31:													
Eielson (60%)-----------	0-3	---	---	42.00-141.0	0.05-0.35	5.1-7.1	---	85-95	---	---	3	2	134
	3-6	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-7.1	0.0-2.9	3.0-6.0	.37	.37			
	6-71	5-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.6	0.0-2.9	---	.43	.43			
	71-77	0-5	1.50-1.60	42.34-141.1	0.02-0.04	6.1-7.6	0.0-2.9	---	.05	.24			
Piledriver (30%)--------	0-2	1-3	0.07-0.18	42.00-141.0	0.05-0.35	5.6-6.6	---	85-95	.05	.05	2	2	134
	2-4	5-10	1.10-1.20	4.23-14.11	0.19-0.22	5.1-6.5	0.0-2.9	3.0-6.0	.37	.37			
	4-30	0-10	1.10-1.20	4.23-14.11	0.15-0.18	5.6-7.3	0.0-2.9	---	.32	.32			
	30-72	0-5	1.60-1.70	42.34-141.1	0.03-0.06	5.6-7.3	0.0-2.9	---	.05	.28			

Table 11--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name (% of map unit)	Depth	Clay	Moist bulk density	Ksat	Available water capacity	Soil reaction	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									K	Kf	T		
	In	Pct	g/cc	um/sec	In/in	pH	Pct	Pct					
32:													
Salchaket (90%)---------	0-3	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	3.0-6.0	.37	.37	3	2	134
	3-63	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.5	0.0-2.9	---	.43	.43			
	63-72	0-5	1.50-1.60	42.34-141.1	0.02-0.04	6.1-7.3	0.0-2.9	---	.05	.24			
35:													
North Pole (70%)--------	0-3	---	0.05-0.18	4.23-14.11	0.25-0.30	6.1-7.3	0.0-2.9	20-80	.05	.05	5	8	0
	3-6	---	0.05-0.18	4.23-14.11	0.25-0.30	6.1-7.3	0.0-2.9	20-80	.05	.05			
	6-22	0-10	1.20-1.60	4.23-14.11	0.15-0.22	6.1-7.3	0.0-2.9	1.0-5.0	.43	.43			
	22-72	0-3	1.40-1.70	42.00-141.0	0.03-0.05	6.1-7.3	---	1.0-5.0	.05	---			
Mosquito (15%)----------	0-9	---	0.05-0.18	4.00-141.0	0.05-0.50	5.1-6.1	0.0-2.9	75-90	.05	.05	1	8	0
	9-20	0-10	0.80-1.40	4.23-14.11	0.24-0.28	5.6-6.6	0.0-2.9	5.0-20	.37	.37			
	20-66	0-10	---	0.00-0.01	---	5.6-6.6	---	---	---	---			
36:													
Jarvis (95%)------------	0-2	1-3	0.07-0.18	0.01-0.42	0.35-0.50	5.6-6.6	---	75-90	.05	.05	2	2	134
	2-6	5-10	1.10-1.20	4.23-14.11	0.19-0.22	5.1-6.5	0.0-2.9	3.0-6.0	.37	.37			
	6-24	0-10	1.10-1.20	4.23-14.11	0.15-0.18	5.6-7.3	0.0-2.9	---	.32	.32			
	24-51	0-5	1.60-1.70	42.34-141.1	0.03-0.06	5.6-7.3	0.0-2.9	---	.05	.28			
37:													
Chena (90%)-------------	0-2	---	0.05-0.18	4.00-141.0	0.05-0.50	5.1-6.0	---	75-95	.05	.05	1	2	134
	2-7	0-5	1.10-1.20	4.23-42.34	0.16-0.18	5.6-6.5	0.0-2.9	---	.28	.32			
	7-60	0-5	1.40-1.50	42.34-141.1	0.03-0.05	5.6-6.5	0.0-2.9	---	.10	.55			
40A:													
Chatanika (90%)---------	0-4	---	0.05-0.18	4.00-141.0	0.05-0.55	4.5-6.1	---	75-95	.05	.05	3	2	134
	4-6	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-5.5	---	7.0-12	.37	.37			
	6-22	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-6.1	---	1.0-5.0	.43	.43			
	22-60	---	1.20-1.40	0.00-0.10	0.00-0.00	5.6-6.5	---	1.0-5.0	---	---			
40B:													
Chatanika (90%)---------	0-4	---	0.05-0.18	4.00-141.0	0.05-0.55	4.5-6.1	---	75-95	.05	.05	3	2	134
	4-6	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-5.5	---	7.0-12	.37	.37			
	6-22	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-6.1	---	1.0-5.0	.43	.43			
	22-60	---	1.20-1.40	0.00-0.10	0.00-0.00	5.6-6.5	---	1.0-5.0	---	---			
40D:													
Chatanika (90%)---------	0-4	---	0.05-0.18	4.00-141.0	0.05-0.55	4.5-6.1	---	75-95	.05	.05	3	2	134
	4-6	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-5.5	---	7.0-12	.37	.37			
	6-22	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-6.1	---	1.0-5.0	.43	.43			
	22-60	---	1.20-1.40	0.00-0.10	0.00-0.00	5.6-6.5	---	1.0-5.0	---	---			
41A:													
Minto (85%)-------------	0-5	0-5	0.05-0.18	4.00-141.0	0.05-0.50	4.5-5.5	---	75-95	.05	.05	5	2	134
	5-9	0-10	1.10-1.20	4.23-14.11	0.20-0.24	4.5-5.0	0.0-2.9	2.0-4.0	.37	.37			
	9-16	0-10	1.10-1.20	4.23-14.11	0.21-0.23	5.1-5.5	0.0-2.9	---	.43	.43			
	16-71	0-10	1.10-1.20	4.23-14.11	0.21-0.23	6.1-6.5	0.0-2.9	---	.43	.43			
41B:													
Minto (85%)-------------	0-2	0-5	0.05-0.18	4.00-141.0	0.05-0.50	4.5-5.5	---	75-95	.05	.05	5	2	134
	2-9	0-10	1.10-1.20	4.23-14.11	0.20-0.24	4.5-5.0	0.0-2.9	2.0-4.0	.37	.37			
	9-16	0-10	1.10-1.20	4.23-14.11	0.21-0.23	5.1-5.5	0.0-2.9	---	.43	.43			
	16-71	0-10	1.10-1.20	4.23-14.11	0.21-0.23	6.1-6.5	0.0-2.9	---	.43	.43			

Table 11--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name (% of map unit)	Depth	Clay	Moist bulk density	Ksat	Available water capacity	Soil reaction	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									K	Kf	T		
	In	Pct	g/cc	um/sec	In/in	pH	Pct	Pct					
41C:													
Minto (85%)----------	0-4	0-5	0.05-0.18	4.00-141.0	0.05-0.50	4.5-5.5	---	75-95	.05	.05	5	2	134
	4-9	0-10	1.10-1.20	4.23-14.11	0.20-0.24	4.5-5.0	0.0-2.9	2.0-4.0	.37	.37			
	9-16	0-10	1.10-1.20	4.23-14.11	0.21-0.23	5.1-5.5	0.0-2.9	---	.43	.43			
	16-71	0-10	1.10-1.20	4.23-14.11	0.21-0.23	6.1-6.5	0.0-2.9	---	.43	.43			
41D:													
Minto (85%)----------	0-4	0-5	0.05-0.18	4.00-141.0	0.05-0.50	4.5-5.5	---	75-95	.05	.05	5	2	134
	4-9	0-10	1.10-1.20	4.23-14.11	0.20-0.24	4.5-5.0	0.0-2.9	2.0-4.0	.37	.37			
	9-16	0-10	1.10-1.20	4.23-14.11	0.21-0.23	5.1-5.5	0.0-2.9	---	.43	.43			
	16-71	0-10	1.10-1.20	4.23-14.11	0.21-0.23	6.1-6.5	0.0-2.9	---	.43	.43			
42B:													
Fairbanks (85%)---------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.6-6.0	---	85-95	---	---	5	2	134
	3-30	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-6.0	.37	.37			
	30-72	0-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.3	0.0-2.9	---	.43	.43			
42C:													
Fairbanks (90%)---------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.6-6.0	---	85-95	---	---	5	2	134
	3-30	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-6.0	.37	.37			
	30-72	0-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.3	0.0-2.9	---	.43	.43			
42CG:													
Fairbanks strongly------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.6-6.0	---	85-95	---	---	5	2	134
sloping (75%)	3-30	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-6.0	.37	.37			
	30-72	0-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.3	0.0-2.9	---	.43	.43			
Fairbanks steep (25%)---	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.6-6.0	---	85-95	---	---	5	2	134
	3-30	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-6.0	.37	.37			
	30-72	0-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.3	0.0-2.9	---	.43	.43			
42D:													
Fairbanks (85%)---------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.6-6.0	---	85-95	---	---	5	2	134
	3-30	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-6.0	.37	.37			
	30-72	0-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.3	0.0-2.9	---	.43	.43			
42G:													
Fairbanks (90%)---------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.6-6.0	---	85-95	---	---	5	2	134
	3-30	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-6.0	.37	.37			
	30-72	0-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.3	0.0-2.9	---	.43	.43			
44D:													
Steese (85%)----------	0-2	---	0.05-0.10	42.00-141.0	0.05-0.35	5.1-6.0	---	85-95	---	---	2	2	134
	2-5	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	2.0-6.0	.37	.37			
	5-27	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	---	.43	.43			
	27-33	0-5	1.40-1.50	14.11-42.34	0.05-0.10	6.1-6.5	0.0-2.9	---	.15	.55			
	33-40	---	---	---	---	---	---	---	---	---			
45D:													
Gilmore (85%)----------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.1-6.0	---	85-95	---	---	1	2	134
	3-6	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-8.0	.37	.37			
	6-17	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	---	.43	.43			
	17-24	0-5	1.40-1.50	14.11-42.34	0.05-0.10	6.1-6.5	0.0-2.9	---	.15	.55			
	24-28	---	---	---	---	---	---	---	---	---			

Table 11--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name (% of map unit)	Depth	Clay	Moist bulk density	Ksat	Available water capacity	Soil reaction	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									K	Kf	T		
	In	Pct	g/cc	um/sec	In/in	pH	Pct	Pct					
45D: (cont'd)													
Steese (15%)----------	0-2	---	0.05-0.10	42.00-141.0	0.05-0.35	5.1-6.0	---	85-95	---	---	2	2	134
	2-5	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	2.0-6.0	.37	.37			
	5-27	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	---	.43	.43			
	27-33	0-5	1.40-1.50	14.11-42.34	0.05-0.10	6.1-6.5	0.0-2.9	---	.15	.55			
	33-40	---	---	---	---	---	---	---	---	---			
45E:													
Gilmore (90%)----------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.1-6.0	---	85-95	---	---	1	2	134
	3-6	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-8.0	.37	.37			
	6-17	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	---	.43	.43			
	17-24	0-5	1.40-1.50	14.11-42.34	0.05-0.10	6.1-6.5	0.0-2.9	---	.15	.55			
	24-28	---	---	---	---	---	---	---	---	---			
51B:													
Saulich (90%)----------	0-9	0-3	0.07-0.18	14.11-42.34	0.30-0.35	4.5-5.5	0.0-2.9	80-90	.05	.05	2	8	0
	9-21	0-5	1.10-1.20	4.23-14.11	0.23-0.25	5.1-6.6	0.0-2.9	---	.37	.37			
	21-72	0-5	1.10-1.20	4.23-14.11	0.21-0.23	6.1-7.3	0.0-2.9	---	.43	.43			
51C:													
Saulich (90%)----------	0-9	0-3	0.07-0.18	14.11-42.34	0.30-0.35	4.5-5.5	0.0-2.9	80-90	.05	.05	2	8	0
	9-21	0-5	1.10-1.20	4.23-14.11	0.23-0.25	5.1-6.6	0.0-2.9	---	.37	.37			
	21-72	0-5	1.10-1.20	4.23-14.11	0.21-0.23	6.1-7.3	0.0-2.9	---	.43	.43			
61:													
Piledriver (90%)--------	0-2	1-3	0.07-0.18	42.00-141.0	0.05-0.35	5.6-6.6	---	85-95	.05	.05	2	2	134
	2-4	5-10	1.10-1.20	4.23-14.11	0.19-0.22	5.1-6.5	0.0-2.9	3.0-6.0	.37	.37			
	4-30	0-10	1.10-1.20	4.23-14.11	0.15-0.18	5.6-7.3	0.0-2.9	---	.32	.32			
	30-72	0-5	1.60-1.70	42.34-141.1	0.03-0.06	5.6-7.3	0.0-2.9	---	.05	.28			
62:													
Peede (70%)-------------	0-5	0-3	0.07-0.30	0.01-14.00	0.35-0.55	6.1-7.3	---	60-90	---	---	3	2	134
	5-47	3-10	1.10-1.20	4.00-14.00	0.20-0.25	6.1-7.3	---	1.0-5.0	.37	.37			
	47-55	0-5	1.10-1.20	4.00-14.00	0.16-0.18	6.1-7.3	---	3.0-7.0	.28	.28			
	55-75	0-3	1.40-1.70	42.00-141.0	0.03-0.04	6.1-7.3	---	1.0-3.0	---	---			
Mosquito (25%)----------	0-9	---	0.05-0.18	4.00-141.0	0.05-0.50	5.1-6.1	0.0-2.9	75-90	.05	.05	1	8	0
	9-20	0-10	0.80-1.40	4.23-14.11	0.24-0.28	5.6-6.6	0.0-2.9	5.0-20	.37	.37			
	20-66	0-10	---	0.00-0.01	---	5.6-6.6	---	---	---	---			
64:													
Eielson (50%)-----------	0-3	---	---	42.00-141.0	0.05-0.35	5.1-7.1	---	85-95	---	---	3	2	134
	3-6	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-7.1	0.0-2.9	3.0-6.0	.37	.37			
	6-71	5-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.6	0.0-2.9	---	.43	.43			
	71-77	0-5	1.50-1.60	42.34-141.1	0.02-0.04	6.1-7.6	0.0-2.9	---	.05	.24			
Tanana (40%)------------	0-5	---	---	42.00-141.0	0.05-0.35	3.5-5.0	---	85-95	---	---	2	8	0
	5-8	5-10	1.10-1.20	4.23-14.11	0.20-0.23	5.1-6.0	0.0-2.9	2.0-6.0	.37	.37			
	8-28	5-10	1.10-1.20	4.23-14.11	0.20-0.23	5.6-7.3	0.0-2.9	0.0-2.0	.43	.43			
	28-72	5-10	1.10-1.20	4.23-14.11	---	5.6-7.3	---	0.0-1.0	---	---			
211:													
Chatanika (60%)---------	0-4	---	0.05-0.18	4.00-141.0	0.05-0.55	4.5-6.1	---	75-95	.05	.05	3	2	134
	4-6	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-5.5	---	7.0-12	.37	.37			
	6-22	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-6.1	---	1.0-5.0	.43	.43			
	22-60	---	1.20-1.40	0.00-0.10	0.00-0.00	5.6-6.5	---	1.0-5.0	---	---			

Table 11--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name (% of map unit)	Depth	Clay	Moist bulk density	Ksat	Available water capacity	Soil reaction	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									K	Kf	T		
	In	Pct	g/cc	um/sec	In/in	pH	Pct	Pct					
211: (cont'd)													
Goldstream (20%)--------	0-9	0-2	0.08-0.12	14.11-42.34	0.25-0.30	3.6-4.5	0.0-2.9	85-95	.05	.05	2	8	0
	9-12	5-10	1.00-1.20	4.23-14.11	0.20-0.22	4.5-5.5	0.0-2.9	---	.37	.37			
	12-20	5-10	1.00-1.20	4.23-14.11	0.20-0.22	4.5-5.5	0.0-2.9	---	.55	.55			
	20-60	---	---	---	---	4.5-5.5	---	---	---	---			
212:													
Goldstream (50%)--------	0-9	0-2	0.08-0.12	14.11-42.34	0.25-0.30	3.6-4.5	0.0-2.9	85-95	.05	.05	2	8	0
	9-12	5-10	1.00-1.20	4.23-14.11	0.20-0.22	4.5-5.5	0.0-2.9	---	.37	.37			
	12-20	5-10	1.00-1.20	4.23-14.11	0.20-0.22	4.5-5.5	0.0-2.9	---	.55	.55			
	20-60	---	---	---	---	4.5-5.5	---	---	---	---			
Bolio (45%)-------------	0-5	---	0.05-0.10	42.00-141.0	0.05-0.35	3.6-5.5	---	85-95	.05	.05	1	8	0
	5-12	---	0.07-0.18	4.00-14.00	0.35-0.50	3.6-6.0	---	75-90	.05	.05			
	12-60	---	0.07-0.18	0.00-0.01	---	3.6-6.0	---	75-90	---	---			
251:													
Tanana (70%)------------	0-6	---	---	42.00-141.0	0.05-0.35	3.5-5.0	---	85-95	---	---	2	8	0
	6-8	5-10	1.10-1.20	4.23-14.11	0.20-0.23	5.1-6.0	0.0-2.9	2.0-6.0	.37	.37			
	8-16	5-10	1.10-1.20	4.23-14.11	0.20-0.23	5.6-7.3	0.0-2.9	0.0-2.0	.43	.43			
	16-72	5-10	1.10-1.20	4.23-14.11	---	5.6-7.3	---	0.0-1.0	---	---			
Mosquito (25%)----------	0-10	---	0.05-0.18	4.00-141.0	0.05-0.50	5.1-6.1	0.0-2.9	75-90	.05	.05	1	8	0
	10-20	0-10	0.80-1.40	4.23-14.11	0.24-0.28	5.6-6.6	0.0-2.9	5.0-20	.37	.37			
	20-66	0-10	---	0.00-0.01	---	5.6-6.6	---	---	---	---			
361:													
Jarvis (65%)------------	0-2	1-3	0.07-0.18	0.01-0.42	0.35-0.50	5.6-6.6	---	75-90	.05	.05	2	2	134
	2-6	5-10	1.10-1.20	4.23-14.11	0.19-0.22	5.1-6.5	0.0-2.9	3.0-6.0	.37	.37			
	6-24	0-10	1.10-1.20	4.23-14.11	0.15-0.18	5.6-7.3	0.0-2.9	---	.32	.32			
	24-51	0-5	1.60-1.70	42.34-141.1	0.03-0.06	5.6-7.3	0.0-2.9	---	.05	.28			
Chena (30%)-------------	0-2	---	0.05-0.18	4.00-141.0	0.05-0.50	5.1-6.0	---	75-95	.05	.05	1	2	134
	2-7	0-5	1.10-1.20	4.23-42.34	0.16-0.18	5.6-6.5	0.0-2.9	---	.28	.32			
	7-60	0-5	1.40-1.50	42.34-141.1	0.03-0.05	5.6-6.5	0.0-2.9	---	.10	.55			
362:													
Fubar (40%)-------------	0-2	0-5	0.05-0.18	4.00-141.0	0.05-0.50	5.1-6.1	---	75-95	.05	.05	5	2	134
	2-4	5-10	1.20-1.30	4.23-14.11	0.20-0.22	5.6-6.5	0.0-2.9	2.0-4.0	.32	.32			
	4-60	0-5	1.50-1.60	42.34-141.1	0.04-0.06	5.6-7.3	0.0-2.9	0.0-1.0	.05	.24			
Piledriver (40%)--------	0-2	1-3	0.07-0.18	42.00-141.0	0.05-0.35	5.6-6.6	---	85-95	.05	.05	2	2	134
	2-4	5-10	1.10-1.20	4.23-14.11	0.19-0.22	5.1-6.5	0.0-2.9	3.0-6.0	.37	.37			
	4-30	0-10	1.10-1.20	4.23-14.11	0.15-0.18	5.6-7.3	0.0-2.9	---	.32	.32			
	30-72	0-5	1.60-1.70	42.34-141.1	0.03-0.06	5.6-7.3	0.0-2.9	---	.05	.28			
363:													
Jarvis (45%)------------	0-2	1-3	0.07-0.18	0.01-0.42	0.35-0.50	5.6-6.6	---	75-90	.05	.05	2	2	134
	2-6	5-10	1.10-1.20	4.23-14.11	0.19-0.22	5.1-6.5	0.0-2.9	3.0-6.0	.37	.37			
	6-24	0-10	1.10-1.20	4.23-14.11	0.15-0.18	5.6-7.3	0.0-2.9	---	.32	.32			
	24-51	0-5	1.60-1.70	42.34-141.1	0.03-0.06	5.6-7.3	0.0-2.9	---	.05	.28			
Salchaket (35%)---------	0-3	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	3.0-6.0	.37	.37	3	2	134
	3-63	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.5	0.0-2.9	---	.43	.43			
	63-72	0-5	1.50-1.60	42.34-141.1	0.02-0.04	6.1-7.3	0.0-2.9	---	.05	.24			

Table 11--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name (% of map unit)	Depth	Clay	Moist bulk density	Ksat	Available water capacity	Soil reaction	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									K	Kf	T		
	In	Pct	g/cc	um/sec	In/in	pH	Pct	Pct					
411B:													
Minto (60%)----------	0-5	0-5	0.05-0.18	4.00-141.0	0.05-0.50	4.5-5.5	---	75-95	.05	.05	5	2	134
	5-9	0-10	1.10-1.20	4.23-14.11	0.20-0.24	4.5-5.0	0.0-2.9	2.0-4.0	.37	.37			
	9-16	0-10	1.10-1.20	4.23-14.11	0.21-0.23	5.1-5.5	0.0-2.9	---	.43	.43			
	16-71	0-10	1.10-1.20	4.23-14.11	0.21-0.23	6.1-6.5	0.0-2.9	---	.43	.43			
Chatanika (30%)---------	0-4	---	0.05-0.18	4.00-141.0	0.05-0.55	4.5-6.1	---	75-95	.05	.05	3	2	134
	4-6	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-5.5	---	7.0-12	.37	.37			
	6-22	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-6.1	---	1.0-5.0	.43	.43			
	22-60	---	1.20-1.40	0.00-0.10	0.00-0.00	5.6-6.5	---	1.0-5.0	---	---			
411C:													
Minto (60%)----------	0-5	0-5	0.05-0.18	4.00-141.0	0.05-0.50	4.5-5.5	---	75-95	.05	.05	5	2	134
	5-9	0-10	1.10-1.20	4.23-14.11	0.20-0.24	4.5-5.0	0.0-2.9	2.0-4.0	.37	.37			
	9-16	0-10	1.10-1.20	4.23-14.11	0.21-0.23	5.1-5.5	0.0-2.9	---	.43	.43			
	16-71	0-10	1.10-1.20	4.23-14.11	0.21-0.23	6.1-6.5	0.0-2.9	---	.43	.43			
Chatanika (30%)---------	0-4	---	0.05-0.18	4.00-141.0	0.05-0.55	4.5-6.1	---	75-95	.05	.05	3	2	134
	4-6	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-5.5	---	7.0-12	.37	.37			
	6-22	---	1.00-1.30	4.00-14.00	0.21-0.23	4.5-6.1	---	1.0-5.0	.43	.43			
	22-60	---	1.20-1.40	0.00-0.10	0.00-0.00	5.6-6.5	---	1.0-5.0	---	---			
421C:													
Fairbanks (45%)---------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.6-6.0	---	85-95	---	---	5	2	134
	3-30	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-6.0	.37	.37			
	30-72	0-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.3	0.0-2.9	---	.43	.43			
Steese (45%)------------	0-2	---	0.05-0.10	42.00-141.0	0.05-0.35	5.1-6.0	---	85-95	---	---	2	2	134
	2-5	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	2.0-6.0	.37	.37			
	5-27	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	---	.43	.43			
	27-33	0-5	1.40-1.50	14.11-42.34	0.05-0.10	6.1-6.5	0.0-2.9	---	.15	.55			
	33-40	---	---	---	---	---	---	---	---	---			
421D:													
Fairbanks (45%)---------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.6-6.0	---	85-95	---	---	5	2	134
	3-30	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-6.0	.37	.37			
	30-72	0-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.3	0.0-2.9	---	.43	.43			
Steese (45%)------------	0-2	---	0.05-0.10	42.00-141.0	0.05-0.35	5.1-6.0	---	85-95	---	---	2	2	134
	2-5	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	2.0-6.0	.37	.37			
	5-27	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	---	.43	.43			
	27-33	0-5	1.40-1.50	14.11-42.34	0.05-0.10	6.1-6.5	0.0-2.9	---	.15	.55			
	33-40	---	---	---	---	---	---	---	---	---			
452:													
Gilmore (70%)-----------	0-3	---	0.05-0.10	42.00-141.0	0.05-0.35	5.1-6.0	---	85-95	---	---	1	2	134
	3-6	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	2.0-8.0	.37	.37			
	6-17	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.6-6.0	0.0-2.9	---	.43	.43			
	17-24	0-5	1.40-1.50	14.11-42.34	0.05-0.10	6.1-6.5	0.0-2.9	---	.15	.55			
	24-28	---	---	---	---	---	---	---	---	---			
Steese (30%)------------	0-2	---	0.05-0.10	42.00-141.0	0.05-0.35	5.1-6.0	---	85-95	---	---	2	2	134
	2-5	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	2.0-6.0	.37	.37			
	5-27	0-5	1.10-1.20	4.23-14.11	0.20-0.22	5.1-6.0	0.0-2.9	---	.43	.43			
	27-33	0-5	1.40-1.50	14.11-42.34	0.05-0.10	6.1-6.5	0.0-2.9	---	.15	.55			
	33-40	---	---	---	---	---	---	---	---	---			

Table 11--PHYSICAL AND CHEMICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name (% of map unit)	Depth	Clay	Moist bulk density	Ksat	Available water capacity	Soil reaction	Shrink-swell potential	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
									K	Kf	T		
	In	Pct	g/cc	um/sec	In/in	pH	Pct	Pct					
611:													
Piledriver (50%)--------	0-2	1-3	0.07-0.18	42.00-141.0	0.05-0.35	5.6-6.6	---	85-95	.05	.05	2	2	134
	2-4	5-10	1.10-1.20	4.23-14.11	0.19-0.22	5.1-6.5	0.0-2.9	3.0-6.0	.37	.37			
	4-30	0-10	1.10-1.20	4.23-14.11	0.15-0.18	5.6-7.3	0.0-2.9	---	.32	.32			
	30-72	0-5	1.60-1.70	42.34-141.1	0.03-0.06	5.6-7.3	0.0-2.9	---	.05	.28			
Eielson (40%)-----------	0-3	---	---	42.00-141.0	0.05-0.35	5.1-7.1	---	85-95	---	---	3	2	134
	3-6	5-10	1.10-1.20	4.23-14.11	0.20-0.22	5.6-7.1	0.0-2.9	3.0-6.0	.37	.37			
	6-71	5-10	1.10-1.20	4.23-14.11	0.20-0.22	6.1-7.6	0.0-2.9	---	.43	.43			
	71-77	0-5	1.50-1.60	42.34-141.1	0.02-0.04	6.1-7.6	0.0-2.9	---	.05	.24			
CL:													
Typic Cryorthents (80%)-	0-39	3-7	1.30-1.60	0.42-1.40	0.12-0.15	6.6-7.3	---	3.0-10	.24	.37	2	2	134
	39-67	1-5	1.10-1.30	4.00-42.00	0.06-0.22	6.6-7.8	---	1.0-3.0	---	---			
	67-75	0-30	1.30-1.50	14.00-141.0	0.05-0.06	6.6-7.8	---	1.0-3.0	---	---			
Gv:													
Gravel pits (100%)------	---	---	---	---	---	---	---	---	---	---	-	---	---
Lf:													
Dump areas (100%)-------	---	---	---	---	---	---	---	---	---	---	-	---	---
Rv:													
Riverwash (100%)-------	---	---	---	---	---	---	---	---	---	---	-	---	---
UC:													
Typic Cryorthents (45%)-	0-30	3-7	1.30-1.60	0.42-1.40	0.12-0.15	6.6-7.3	---	3.0-10	.24	.37	2	2	134
	30-67	1-5	1.10-1.30	4.00-42.00	0.06-0.22	6.6-7.8	---	1.0-3.0	---	---			
	67-75	0-30	1.30-1.50	14.00-141.0	0.05-0.06	6.6-7.8	---	1.0-3.0	---	---			
Urban land (45%)--------	---	---	---	---	---	---	---	---	---	---	-	---	---
W:													
Water (100%)------------	---	---	---	---	---	---	---	---	---	---	-	---	---
WAH:													
Typic Cryaquents (30%)--	0-4	0-5	0.07-0.30	0.01-14.00	0.35-0.55	5.6-7.3	---	60-90	.05	.05	5	8	---
	4-72	0-35	1.10-1.30	1.40-14.00	0.20-0.22	6.1-7.3	---	1.0-5.0	.37	.37			
Histic Cryaquepts (25%)-	0-13	---	0.07-0.30	0.01-14.00	0.35-0.55	4.5-5.6	---	60-90	.05	.05	5	8	0
	13-30	---	1.10-1.30	4.00-14.00	0.21-0.23	5.1-6.0	---	3.0-7.0	.37	.37			
	30-72	---	1.20-1.40	4.00-14.00	0.18-0.23	5.5-6.1	---	1.0-5.0	.43	.43			
Terric Cryofibrists-----	0-12	---	0.05-0.10	42.00-141.0	0.10-0.20	5.0-6.0	0.0-2.9	85-95	.05	.05	1	8	0
(20%)	12-39	---	0.20-0.30	0.01-0.42	0.40-0.55	5.6-6.6	---	60-85	---	---			
	39-66	27-40	1.30-1.45	1.43-4.20	---	5.6-6.6	---	5.0-10	---	---			

Table 12--SOIL MOISTURE STATUS BY DEPTH

(Depths of layers are in feet.)

Map symbol and soil name (% of map unit)	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
9: Histels, Terric (90%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	---	---	---
20: Mosquito (87%)-	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	---	---	---
21A: Goldstream----- (80%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.5-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	---	---	---
Chatanika (15%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	---	---	---
21B: Goldstream----- (85%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.5-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	---	---	---
Chatanika (15%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	---	---	---
22: Tanacross (85%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.5-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	---	---	---
25: Tanana (85%)---	D	---	---	---	0.5-6.0: Wet	0.5-6.0: Wet	0.5-6.0: Wet	1.3-6.0: Wet	1.3-6.0: Wet	1.3-6.0: Wet	---	---	---
31: Eielson (60%)--	B	---	---	---	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	---	---	---
Piledriver----- (30%)	B	---	---	---	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	---	---	---
32: Salchaket (90%)	B	---	---	---	0.3-1.6: Wet	0.7-1.6: Wet	---	---	---	---	---	---	---
35: North Pole----- (70%)	C	---	---	---	0.5-6.0: Wet	0.5-6.0: Wet	0.5-6.0: Wet	3.3-6.0: Wet	3.3-6.0: Wet	3.3-6.0: Wet	---	---	---
Mosquito (15%)-	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	---	---	---
36: Jarvis (95%)---	B	---	---	---	---	---	---	---	---	---	---	---	---
37: Chena (90%)----	A	---	---	---	---	---	---	---	---	---	---	---	---
40A: Chatanika (90%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	---	---	---

Table 12--SOIL MOISTURE STATUS BY DEPTH--Continued

Map symbol and soil name (% of map unit)	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
40B: Chatanika (90%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	---	---	---
40D: Chatanika (90%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	---	---	---
41A: Minto (85%)----	B	---	---	---	0.3-1.6: Wet	0.7-1.6: Wet	---	---	---	---	---	---	---
41B: Minto (85%)----	B	---	---	---	0.3-1.6: Wet	0.7-1.6: Wet	---	---	---	---	---	---	---
41C: Minto (85%)----	B	---	---	---	0.3-1.6: Wet	0.7-1.6: Wet	---	---	---	---	---	---	---
41D: Minto (85%)----	B	---	---	---	0.3-1.6: Wet	0.7-1.6: Wet	---	---	---	---	---	---	---
42B: Fairbanks (85%)	B	---	---	---	---	---	---	---	---	---	---	---	---
42C: Fairbanks (90%)	B	---	---	---	---	---	---	---	---	---	---	---	---
42CG: Fairbanks------ strongly sloping (75%)	B	---	---	---	---	---	---	---	---	---	---	---	---
Fairbanks steep (25%)	B	---	---	---	---	---	---	---	---	---	---	---	---
42D: Fairbanks (85%)	B	---	---	---	---	---	---	---	---	---	---	---	---
42G: Fairbanks (90%)	B	---	---	---	---	---	---	---	---	---	---	---	---
44D: Steese (85%)---	B	---	---	---	---	---	---	---	---	---	---	---	---
45D: Gilmore (85%)--	B	---	---	---	---	---	---	---	---	---	---	---	---
Steese (15%)---	B	---	---	---	---	---	---	---	---	---	---	---	---
45E: Gilmore (90%)--	B	---	---	---	---	---	---	---	---	---	---	---	---
51B: Saulich (90%)--	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	---	---	---
51C: Saulich (90%)--	D	---	---	---	---	---	---	---	---	---	---	---	---

Table 12--SOIL MOISTURE STATUS BY DEPTH--Continued

Map symbol and soil name (% of map unit)	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
61:													
Piledriver----- (90%)	B	---	---	---	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	---	---	---
62:													
Peede (70%)----	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	---	---	---
Mosquito (25%)-	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	---	---	---
64:													
Eielson (50%)--	B	---	---	---	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	---	---	---
Tanana (40%)---	D	---	---	---	0.5-6.0: Wet	0.5-6.0: Wet	0.5-6.0: Wet	1.3-6.0: Wet	1.3-6.0: Wet	1.3-6.0: Wet	---	---	---
211:													
Chatanika (60%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	---	---	---
Goldstream----- (20%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.5-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	---	---	---
212:													
Goldstream----- (50%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.5-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	1.0-6.0: Wet	---	---	---
Bolio (45%)----	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.4-6.0: Wet	0.4-6.0: Wet	0.4-6.0: Wet	---	---	---
251:													
Tanana (70%)---	D	---	---	---	0.5-6.0: Wet	0.5-6.0: Wet	0.5-6.0: Wet	1.3-6.0: Wet	1.3-6.0: Wet	1.3-6.0: Wet	---	---	---
Mosquito (25%)-	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	---	---	---
361:													
Jarvis (65%)---	B	---	---	---	---	---	---	---	---	---	---	---	---
Chena (30%)----	A	---	---	---	---	---	---	---	---	---	---	---	---
362:													
Fubar (40%)----	A	---	---	---	---	---	4.5-6.0: Wet	4.5-6.0: Wet	4.5-6.0: Wet	---	---	---	---
Piledriver----- (40%)	B	---	---	---	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	---	---	---
363:													
Jarvis (45%)---	B	---	---	---	---	---	---	---	---	---	---	---	---
Salchaket (35%)	B	---	---	---	0.3-1.6: Wet	0.7-1.6: Wet	---	---	---	---	---	---	---
411B:													
Minto (60%)----	B	---	---	---	0.3-1.6: Wet	0.7-1.6: Wet	---	---	---	---	---	---	---

Table 12--SOIL MOISTURE STATUS BY DEPTH--Continued

Map symbol and soil name (% of map unit)	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
411B: (cont'd)													
Chatanika (30%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	---	---	---
411C:													
Minto (60%)----	B	---	---	---	0.3-1.6: Wet	0.7-1.6: Wet	---	---	---	---	---	---	---
Chatanika (30%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	1.6-6.0: Wet	---	---	---
421C:													
Fairbanks (45%)	B	---	---	---	---	---	---	---	---	---	---	---	---
Steese (45%)---	B	---	---	---	---	---	---	---	---	---	---	---	---
421D:													
Fairbanks (45%)	B	---	---	---	---	---	---	---	---	---	---	---	---
Steese (45%)---	B	---	---	---	---	---	---	---	---	---	---	---	---
452:													
Gilmore (70%)--	B	---	---	---	---	---	---	---	---	---	---	---	---
Steese (30%)---	B	---	---	---	---	---	---	---	---	---	---	---	---
611:													
Piledriver----- (50%)	B	---	---	---	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	---	---	---
Eielson (40%)--	B	---	---	---	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	3.9-6.0: Wet	---	---	---
CL:													
Typic Cryorthents--- (80%)	B	---	---	---	---	---	---	---	---	---	---	---	---
Gv:													
Gravel pits---- (100%)	---	---	---	---	---	---	---	---	---	---	---	---	---
Lf:													
Dump areas----- (100%)	---	---	---	---	---	---	---	---	---	---	---	---	---
Rv:													
Riverwash------ (100%)	---	---	---	---	---	---	---	---	---	---	---	---	---
UC:													
Typic Cryorthents--- 45%)	B	---	---	---	---	---	---	---	---	---	---	---	---
Urban land----- (45%)	---	---	---	---	---	---	---	---	---	---	---	---	---
W:													
Water (100%)---	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 12--SOIL MOISTURE STATUS BY DEPTH--Continued

Map symbol and soil name (% of map unit)	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
WAH:													
Typic Cryaquents---- (30%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	0.7-6.0: Wet	---	---	---
Histic Cryaquepts---- (25%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.7-6.0: Wet	1.3-6.0: Wet	1.3-6.0: Wet	1.3-6.0: Wet	---	---	---
Terric Cryofibrists-- (20%)	D	---	---	---	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	0.0-6.0: Wet	---	---	---

Table 13--FLOODING FREQUENCY AND DURATION

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
9:												
Histels, Terric---- (90%)	None	None	None	None	None	None	None	None	None	None	None	None
20:												
Mosquito (87%)-----	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
21A:												
Goldstream (80%)---	None	None	None	None	None	None	None	None	None	None	None	None
Chatanika (15%)----	None	None	None	None	None	None	None	None	None	None	None	None
21B:												
Goldstream (85%)---	None	None	None	None	None	None	None	None	None	None	None	None
Chatanika (15%)----	None	None	None	None	None	None	None	None	None	None	None	None
22:												
Tanacross (85%)----	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
25:												
Tanana (85%)-------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
31:												
Eielson (60%)------	None	None	None	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	None	None	None
Piledriver (30%)---	None	None	None	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	None	None	None
32:												
Salchaket (90%)----	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
35:												
North Pole (70%)---	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
Mosquito (15%)-----	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
36:												
Jarvis (95%)-------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
37:												
Chena (90%)--------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
40A:												
Chatanika (90%)----	None	None	None	None	None	None	None	None	None	None	None	None
40B:												
Chatanika (90%)----	None	None	None	None	None	None	None	None	None	None	None	None
40D:												
Chatanika (90%)----	None	None	None	None	None	None	None	None	None	None	None	None
41A:												
Minto (85%)--------	None	None	None	None	None	None	None	None	None	None	None	None
41B:												
Minto (85%)--------	None	None	None	None	None	None	None	None	None	None	None	None
41C:												
Minto (85%)--------	None	None	None	None	None	None	None	None	None	None	None	None

Table 13--FLOODING FREQUENCY AND DURATION--Continued

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
41D:												
Minto (85%)	None	None	None	None	None	None	None	None	None	None	None	None
42B:												
Fairbanks (85%)	None	None	None	None	None	None	None	None	None	None	None	None
42C:												
Fairbanks (90%)	None	None	None	None	None	None	None	None	None	None	None	None
42CG:												
Fairbanks strongly-sloping (75%)	None	None	None	None	None	None	None	None	None	None	None	None
Fairbanks steep (25%)	None	None	None	None	None	None	None	None	None	None	None	None
42D:												
Fairbanks (85%)	None	None	None	None	None	None	None	None	None	None	None	None
42G:												
Fairbanks (90%)	None	None	None	None	None	None	None	None	None	None	None	None
44D:												
Steese (85%)	None	None	None	None	None	None	None	None	None	None	None	None
45D:												
Gilmore (85%)	None	None	None	None	None	None	None	None	None	None	None	None
Steese (15%)	None	None	None	None	None	None	None	None	None	None	None	None
45E:												
Gilmore (90%)	None	None	None	None	None	None	None	None	None	None	None	None
51B:												
Saulich (90%)	None	None	None	None	None	None	None	None	None	None	None	None
51C:												
Saulich (90%)	None	None	None	None	None	None	None	None	None	None	None	None
61:												
Piledriver (90%)	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
62:												
Peede (70%)	None	None	None	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	None	None	None
Mosquito (25%)	None	None	None	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	None	None	None
64:												
Eielson (50%)	None	None	None	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	None	None	None
Tanana (40%)	None	None	None	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	None	None	None
211:												
Chatanika (60%)	None	None	None	None	None	None	None	None	None	None	None	None
Goldstream (20%)	None	None	None	None	None	None	None	None	None	None	None	None

Table 13--FLOODING FREQUENCY AND DURATION--Continued

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
212:												
Goldstream (50%)---	None	None	None	None	None	None	None	None	None	None	None	None
Bolio (45%)--------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
251:												
Tanana (70%)-------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
Mosquito (25%)-----	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
361:												
Jarvis (65%)-------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
Chena (30%)--------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
362:												
Fubar (40%)--------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
Piledriver (40%)---	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
363:												
Jarvis (45%)-------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
Salchaket (35%)----	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
411B:												
Minto (60%)--------	None	None	None	None	None	None	None	None	None	None	None	None
Chatanika (30%)----	None	None	None	None	None	None	None	None	None	None	None	None
411C:												
Minto (60%)--------	None	None	None	None	None	None	None	None	None	None	None	None
Chatanika (30%)----	None	None	None	None	None	None	None	None	None	None	None	None
421C:												
Fairbanks (45%)----	None	None	None	None	None	None	None	None	None	None	None	None
Steese (45%)-------	None	None	None	None	None	None	None	None	None	None	None	None
421D:												
Fairbanks (45%)----	None	None	None	None	None	None	None	None	None	None	None	None
Steese (45%)-------	None	None	None	None	None	None	None	None	None	None	None	None
452:												
Gilmore (70%)------	None	None	None	None	None	None	None	None	None	None	None	None
Steese (30%)-------	None	None	None	None	None	None	None	None	None	None	None	None
611:												
Piledriver (50%)---	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
Eielson (40%)------	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
CL:												
Typic Cryorthents-- (80%)	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
Gv:												
Gravel pits (100%)-	None	None	None	None	None	None	None	None	None	None	None	None

Table 13--FLOODING FREQUENCY AND DURATION--Continued

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
Lf:												
Dump areas (100%)	---	---	---	---	---	---	---	---	---	---	---	---
Rv:												
Riverwash (100%)	None	None	None	Frequent	Frequent	Frequent	Frequent	Frequent	Frequent	None	None	None
UC:												
Typic Cryorthents (45%)	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
Urban land (45%)	None	None	None	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	Rare-Brief	None	None	None
W:												
Water (100%)	---	---	---	---	---	---	---	---	---	---	---	---
WAH:												
Typic Cryaquents (30%)	None	None	None	None	None	None	None	None	None	None	None	None
Histic Cryaquepts (25%)	None	None	None	None	None	None	None	None	None	None	None	None
Terric Cryofibrists (20%)	None	None	None	None	None	None	None	None	None	None	None	None

Table 14--PONDING FREQUENCY, DURATION, AND DEPTH

(Depths of ponding are in feet.)

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
9:												
Histels, Terric (90%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
20:												
Mosquito (87%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
21A:												
Goldstream (80%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
Chatanika (15%)	None	None	None	None	None	None	None	None	None	None	None	None
21B:												
Goldstream (85%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
Chatanika (15%)	None	None	None	None	None	None	None	None	None	None	None	None
22:												
Tanacross (85%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	---	---	---
25:												
Tanana (85%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	---	---	---
31:												
Eielson (60%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---
Piledriver (30%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---
32:												
Salchaket (90%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---

Table 14--PONDING FREQUENCY, DURATION, AND DEPTH--Continued

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
35:												
North Pole (70%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	---	---	---
Mosquito (15%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
36:												
Jarvis (95%)	---	---	---	Occasional Long Depth: 0.0-0.3	None	None	None	None	None	---	---	---
37:												
Chena (90%)	None	None	None	None	None	None	None	None	None	None	None	None
40A:												
Chatanika (90%)	None	None	None	None	None	None	None	None	None	None	None	None
40B:												
Chatanika (90%)	None	None	None	None	None	None	None	None	None	None	None	None
40D:												
Chatanika (90%)	None	None	None	None	None	None	None	None	None	None	None	None
41A:												
Minto (85%)	None	None	None	None	None	None	None	None	None	None	None	None
41B:												
Minto (85%)	None	None	None	None	None	None	None	None	None	None	None	None
41C:												
Minto (85%)	None	None	None	None	None	None	None	None	None	None	None	None
41D:												
Minto (85%)	None	None	None	None	None	None	None	None	None	None	None	None
42B:												
Fairbanks (85%)	None	None	None	None	None	None	None	None	None	None	None	None
42C:												
Fairbanks (90%)	None	None	None	None	None	None	None	None	None	None	None	None
42CG:												
Fairbanks strongly-sloping (75%)	None	None	None	None	None	None	None	None	None	None	None	None
Fairbanks steep (25%)	None	None	None	None	None	None	None	None	None	None	None	None
42D:												
Fairbanks (85%)	None	None	None	None	None	None	None	None	None	None	None	None
42G:												
Fairbanks (90%)	None	None	None	None	None	None	None	None	None	None	None	None
44D:												
Steese (85%)	None	None	None	None	None	None	None	None	None	None	None	None

Table 14--PONDING FREQUENCY, DURATION, AND DEPTH--Continued

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
45D:												
Gilmore (85%)------	None	None	None	None	None	None	None	None	None	None	None	None
Steese (15%)-------	None	None	None	None	None	None	None	None	None	None	None	None
45E:												
Gilmore (90%)------	None	None	None	None	None	None	None	None	None	None	None	None
51B:												
Saulich (90%)------	---	---	---	Frequent Long Depth: 0.0-0.3	Frequent Long Depth: 0.0-0.3	None	None	None	None	---	---	---
51C:												
Saulich (90%)------	---	---	---	Frequent Long Depth: 0.0-0.3	Frequent Long Depth: 0.0-0.3	None	None	None	None	---	---	---
61:												
Piledriver (90%)---	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---
62:												
Peede (70%)--------	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-1.0	---	---	---
Mosquito (25%)-----	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
64:												
Eielson (50%)------	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---
Tanana (40%)-------	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	---	---	---
211:												
Chatanika (60%)----	None	None	None	None	None	None	None	None	None	None	None	None
Goldstream (20%)---	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
212:												
Goldstream (50%)---	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---

Table 14--PONDING FREQUENCY, DURATION, AND DEPTH--Continued

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
212: (cont'd)												
Bolio (45%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
251:												
Tanana (70%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	---	---	---
Mosquito (25%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
361:												
Jarvis (65%)	---	---	---	Occasional Long Depth: 0.0-0.3	None	None	None	None	None	---	---	---
Chena (30%)	None	None	None	None	None	None	None	None	None	None	None	None
362:												
Fubar (40%)	None	None	None	None	None	None	None	None	None	None	None	None
Piledriver (40%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---
363:												
Jarvis (45%)	---	---	---	Occasional Long Depth: 0.0-0.3	None	None	None	None	None	---	---	---
Salchaket (35%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---
411B:												
Minto (60%)	None	None	None	None	None	None	None	None	None	None	None	None
Chatanika (30%)	None	None	None	None	None	None	None	None	None	None	None	None
411C:												
Minto (60%)	None	None	None	None	None	None	None	None	None	None	None	None
Chatanika (30%)	None	None	None	None	None	None	None	None	None	None	None	None
421C:												
Fairbanks (45%)	None	None	None	None	None	None	None	None	None	None	None	None
Steese (45%)	None	None	None	None	None	None	None	None	None	None	None	None
421D:												
Fairbanks (45%)	None	None	None	None	None	None	None	None	None	None	None	None

Table 14--PONDING FREQUENCY, DURATION, AND DEPTH--Continued

Map symbol and soil name (% of map unit)	January	February	March	April	May	June	July	August	September	October	November	December
421D: (cont'd)												
Steese (45%)-------	None	None	None	None	None	None	None	None	None	None	None	None
452:												
Gilmore (70%)------	None	None	None	None	None	None	None	None	None	None	None	None
Steese (30%)-------	None	None	None	None	None	None	None	None	None	None	None	None
611:												
Piledriver (50%)---	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---
Eielson (40%)------	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	None	---	---	---
CL:												
Typic Cryorthents-- (80%)	None	None	None	None	None	None	None	None	None	None	None	None
Gv:												
Gravel pits (100%)-	---	---	---	---	---	---	---	---	---	---	---	---
Lf:												
Dump areas (100%)--	---	---	---	---	---	---	---	---	---	---	---	---
Rv:												
Riverwash (100%)---	---	---	---	---	---	---	---	---	---	---	---	---
UC:												
Typic Cryorthents-- (45%)	None	None	None	None	None	None	None	None	None	None	None	None
Urban land (45%)---	---	---	---	---	---	---	---	---	---	---	---	---
W:												
Water (100%)-------	---	---	---	---	---	---	---	---	---	---	---	---
WAH:												
Typic Cryaquents--- (30%)	---	---	---	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	Frequent Long Depth: 0.0-0.5	None	None	None	---	---	---
Histic Cryaquepts-- (25%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	Occasional Long Depth: 0.0-0.7	---	---	---
Terric Cryofibrists (20%)	---	---	---	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	Frequent Long Depth: 0.0-1.0	---	---	---

Table 15--HYDRIC SOILS LIST

Map symbol and map unit name	Component (% of map unit)	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
9:							
Histels, Terric	Histels, Terric (90%)	Yes	Depression	1,3	No	No	Yes
	Goldstream (10%)	Yes	Valley floor	3,2B3	Yes	No	Yes
20:							
Mosquito peat	Mosquito (86%)	Yes	Alluvial flat	2B3	Yes	No	No
	Histels, Terric (12%)	Yes	Depression	1,3	No	No	Yes
	Soils without permafrost (2%)	Yes	Alluvial flat	2B3	Yes	No	No
21A:							
Goldstream peat, 0 to 3 percent slopes	Goldstream (80%)	Yes	Valley floor	2B3,3	Yes	No	Yes
	Chatanika (15%)	Yes	Valley side	2B3	Yes	No	No
	Histels, Terric (5%)	Yes	Depression	1,3	No	No	Yes
21B:							
Goldstream peat, 3 to 7 percent slopes	Goldstream (85%)	Yes	Valley floor	2B3,3	Yes	No	Yes
	Chatanika (15%)	Yes	Valley side	2B3	Yes	No	No
22:							
Tanacross peat	Tanacross (85%)	Yes	Alluvial flat	2B3	Yes	No	No
	Tanana (12%)	Yes	Terrace	2B3	Yes	No	No
	Jarvis (2%)	No	Floodplain	---	---	---	---
	Peede (1%)	Yes	Depression	2B3,3	Yes	No	Yes
25:							
Tanana very fine sandy loam	Tanana (85%)	Yes	Terrace	2B3	Yes	No	No
	Tanacross (10%)	Yes	Alluvial flat	2B3	Yes	No	No
	Salchaket (3%)	No	Floodplain	---	---	---	---
	Jarvis (2%)	No	Floodplain	---	---	---	---
31:							
Eielson-Piledriver complex, occasionally flooded	Eielson (60%)	No	Floodplain	---	---	---	---
	Piledriver (30%)	No	Floodplain	---	---	---	---
	Fubar (5%)	No	Floodplain	---	---	---	---
	Peede (3%)	Yes	Depression	3,2B3	Yes	No	Yes
	Salchaket (2%)	No	Floodplain	---	---	---	---
32:							
Salchaket very fine sandy loam	Salchaket (90%)	No	Floodplain	---	---	---	---
	Jarvis (10%)	No	Floodplain	---	---	---	---
	Eielson (0%)	No	Floodplain	---	---	---	---

Table 15--Hydric Soils List--Continued

Map symbol and map unit name	Component (% of map unit)	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
32: Salchaket very fine sandy loam (cont'd)	Peede (0%)	Yes	Depression	2B3,3	Yes	No	Yes
	Tanana (0%)	Yes	Terrace	2B3	Yes	No	No
	Chena (0%)	No	Stream terrace	---	---	---	---
35: North Pole very fine sandy loam	North Pole (70%)	Yes	Alluvial flat	2B3	Yes	No	No
	Mosquito (15%)	Yes	Alluvial flat	2B3	Yes	No	No
	Tanacross (10%)	Yes	Alluvial flat	2B3	Yes	No	No
	Tanana (5%)	Yes	Terrace	2B3	Yes	No	No
36: Jarvis fine sandy loam	Jarvis (95%)	No	Floodplain	---	---	---	---
	Fubar (5%)	No	Floodplain	---	---	---	---
	Piledriver (0%)	No	Floodplain	---	---	---	---
37: Chena very fine sandy loam	Chena (95%)	No	Stream terrace	---	---	---	---
	Jarvis (3%)	No	Floodplain	---	---	---	---
	Piledriver (2%)	No	Floodplain	---	---	---	---
40A: Chatanika silt loam, 0 to 3 percent slopes	Chatanika (90%)	Yes	Valley side	2B3	Yes	No	No
	Goldstream (5%)	Yes	Valley floor	2B3,3	Yes	No	Yes
	Minto (5%)	No	Hillside	---	---	---	---
40B: Chatanika silt loam, 3 to 7 percent slopes	Chatanika (90%)	Yes	Valley side	2B3	Yes	No	No
	Goldstream (5%)	Yes	Valley floor	2B3,3	Yes	No	Yes
	Minto (5%)	No	Hillside	---	---	---	---
40D: Chatanika silt loam, 12 to 20 percent slopes	Chatanika (90%)	Yes	Valley side	2B3	Yes	No	No
	Chatanika, 7-12 percent slopes (5%)	Yes	---	2B3	Yes	No	No
	Minto (5%)	No	Hillside	---	---	---	---
41A: Minto silt loam, 0 to 3 percent slopes	Minto (85%)	No	Hillside	---	---	---	---
	Chatanika (10%)	Yes	Valley side	2B3	Yes	No	No
	Goldstream (5%)	Yes	Valley floor	2B3,3	Yes	No	Yes

Table 15--Hydric Soils List--Continued

Map symbol and map unit name	Component (% of map unit)	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
41B:							
Minto silt loam, 3 to 7 percent slopes	Minto (85%)	No	Hillside	---	---	---	---
	Wet soils without permafrost (10%)	Yes	---	2B3	Yes	No	No
	Chatanika (5%)	Yes	Valley side	2B3	Yes	No	No
41C:							
Minto silt loam, 7 to 12 percent slopes	Minto (85%)	No	Hillside	---	---	---	---
	Fairbanks (10%)	No	Hill	---	---	---	---
	Chatanika (5%)	Yes	Valley side	2B3	Yes	No	No
41D:							
Minto silt loam, 12 to 20 percent slopes	Minto (85%)	No	Hillside	---	---	---	---
	Fairbanks (10%)	No	Hill	---	---	---	---
	Chatanika (5%)	Yes	Valley side	2B3	Yes	No	No
42B:							
Fairbanks silt loam, 3 to 7 percent slopes	Fairbanks (85%)	No	Hill	---	---	---	---
	Fairbanks, >7 percent slopes (10%)	No	Hill	---	---	---	---
	Fairbanks, <3 percent slopes (5%)	No	Hill	---	---	---	---
42C:							
Fairbanks silt loam, 7 to 12 percent slopes	Fairbanks (90%)	No	Hill	---	---	---	---
	Fairbanks, >12 percent slopes (10%)	No	Hill	---	---	---	---
42CG:							
Fairbanks silt loam, strongly sloping and steep	Fairbanks, strongly sloping (75%)	No	Hill	---	---	---	---
	Fairbanks, steep (25%)	No	Hill	---	---	---	---
42D:							
Fairbanks silt loam, 12 to 20 percent slopes	Fairbanks (85%)	No	Hill	---	---	---	---
	Fairbanks, >20 percent slopes (10%)	No	Hill	---	---	---	---
	Steese (5%)	No	Hill	---	---	---	---
42G:							
Fairbanks silt loam, more than 45 percent slopes	Fairbanks (90%)	No	Hill	---	---	---	---
	Fairbanks, 12-45 percent slopes (10%)	No	Hill	---	---	---	---

Table 15--Hydric Soils List--Continued

Map symbol and map unit name	Component (% of map unit)	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
44D:							
Steese silt loam, 12 to 20 percent slopes	Steese (85%)	No	Hill	---	---	---	---
	Fairbanks (5%)	No	Hill	---	---	---	---
	Steese, <12 percent slopes (5%)	No	Hill	---	---	---	---
	Steese, >20 percent slopes (5%)	No	---	---	---	---	---
45D:							
Gilmore silt loam, 12 to 20 percent slopes	Gilmore (85%)	No	Hill	---	---	---	---
	Steese (15%)	No	Hill	---	---	---	---
45E:							
Gilmore silt loam, 20 to 30 percent slopes	Gilmore (90%)	No	Hill	---	---	---	---
	Steese, 20-30 percent slopes (5%)	No	---	---	---	---	---
	Steese, <20 percent slopes (5%)	No	Hill	---	---	---	---
51B:							
Saulich peat, 3 to 7 percent slopes	Saulich (90%)	Yes	Valley side	2B3	Yes	No	No
	Chatanika (10%)	Yes	Valley side	2B3	Yes	No	No
51C:							
Saulich peat, 7 to 12 percent slopes	Saulich (90%)	Yes	Valley side	2B3	Yes	No	No
	Saulich, >12 percent slopes (10%)	Yes	Depression	2B3	Yes	No	No
61:							
Piledriver very fine sandy loam	Piledriver (90%)	No	Floodplain	---	---	---	---
	Chena (5%)	No	Stream terrace	---	---	---	---
	Eielson (5%)	No	Floodplain	---	---	---	---
62:							
Peede-Mosquito complex	Peede (70%)	Yes	Depression	3,2B3	Yes	No	Yes
	Mosquito (25%)	Yes	Alluvial flat	2B3	Yes	No	No
	Included areas (5%)	Yes	Alluvial flat	2B3	Yes	No	No
64:							
Eielson-Tanana complex	Eielson (50%)	No	Floodplain	---	---	---	---
	Tanana (35%)	Yes	Terrace	2B3	Yes	No	No
	Peede (10%)	Yes	Depression	3,2B3	Yes	No	Yes
	Tanacross (5%)	Yes	Alluvial flat	2B3	Yes	No	No

Table 15--Hydric Soils List--Continued

Map symbol and map unit name	Component (% of map unit)	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
211: Chatanika-Goldstream complex, 0 to 3 percent slopes	Chatanika (60%)	Yes	Valley side	2B3	Yes	No	No
	Goldstream (20%)	Yes	Valley floor	3,2B3	Yes	No	Yes
	Minto (10%)	No	Hillside	---	---	---	---
	Organic soils (5%)	Yes	Fen	1,3	No	No	Yes
	Wet soils without permafrost (5%)	Yes	Floodplain	2B3	Yes	No	No
212: Goldstream-Bolio complex, 0 to 3 percent slopes	Goldstream (50%)	Yes	Valley floor	3,2B3	Yes	No	Yes
	Bolio (45%)	Yes	Depression	1,3	No	No	Yes
	Terric Cryofibrists (5%)	Yes	Floodplain	1	No	No	No
251: Tanana-Mosquito complex	Tanana (70%)	Yes	Terrace	2B3	Yes	No	No
	Mosquito (25%)	Yes	Alluvial flat	2B3	Yes	No	No
	Moosehead (5%)	No	---	---	---	---	---
361: Jarvis-Chena complex	Jarvis (65%)	No	Floodplain	---	---	---	---
	Chena (30%)	No	Stream terrace	---	---	---	---
	Piledriver (3%)	No	Floodplain	---	---	---	---
	Eielson (2%)	No	Floodplain	---	---	---	---
362: Piledriver-Fubar complex	Fubar (40%)	No	Floodplain	---	---	---	---
	Piledriver (40%)	No	Floodplain	---	---	---	---
	Chena (10%)	No	Stream terrace	---	---	---	---
	Jarvis (10%)	No	Floodplain	---	---	---	---
363: Jarvis-Salchaket complex	Jarvis (55%)	No	Floodplain	---	---	---	---
	Salchaket (35%)	No	Floodplain	---	---	---	---
	Eielson (5%)	No	Floodplain	---	---	---	---
	Chena (2%)	No	Stream terrace	---	---	---	---
	Piledriver (2%)	No	Floodplain	---	---	---	---
	Tanana (1%)	Yes	Terrace	2B3	Yes	No	No

Table 15--Hydric Soils List--Continued

Map symbol and map unit name	Component (% of map unit)	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
411B:							
Minto-Chatanika complex, 3 to 7 percent slopes	Minto (60%)	No	Hillside	---	---	---	---
	Chatanika (30%)	Yes	Valley side	2B3	Yes	No	No
	Histic Cryaquepts (10%)	Yes	Depression	2B3	Yes	No	No
411C:							
Minto-Chatanika complex, 7 to 12 percent slopes	Minto (60%)	No	Hillside	---	---	---	---
	Chatanika (30%)	Yes	Valley side	2B3	Yes	No	No
	Chatanika, <7 percent slopes (10%)	Yes	---	2B3	Yes	No	No
421C:							
Fairbanks-Steese complex, 7 to 12 percent slopes	Fairbanks (45%)	No	Hill	---	---	---	---
	Steese (45%)	No	Hill	---	---	---	---
	Gilmore (10%)	No	Hill	---	---	---	---
421D:							
Fairbanks-Steese complex, 12 to 20 percent slopes	Fairbanks (45%)	No	Hill	---	---	---	---
	Steese (45%)	No	Hill	---	---	---	---
	Gilmore (10%)	No	Hill	---	---	---	---
452:							
Gilmore-Steese complex, 3 to 15 percent slopes	Gilmore (70%)	No	Hill	---	---	---	---
	Steese (30%)	No	Hill	---	---	---	---
611:							
Eielson-Piledriver complex	Piledriver (50%)	No	Floodplain	---	---	---	---
	Eielson (40%)	No	Floodplain	---	---	---	---
	Chena (10%)	No	Stream terrace	---	---	---	---
CL:							
Typic Cryorthents, pit spoil	Typic Cryorthents (80%)	No	---	---	---	---	---
	Fubar (5%)	No	Floodplain	---	---	---	---
	Jarvis (5%)	No	Floodplain	---	---	---	---
	Piledriver (5%)	No	Floodplain	---	---	---	---
	Salchaket (5%)	No	Floodplain	---	---	---	---
Gv:							
Gravel pits	Gravel pits (100%)	No	---	---	---	---	---
Lf:							
Landfill, dumps	Dump areas (100%)	---	---	---	---	---	---
Rv:							
Riverwash	Riverwash (100%)	Yes	Floodplain	4	No	Yes	No

Table 15--Hydric Soils List--Continued

Map symbol and map unit name	Component (% of map unit)	Hydric	Local landform	Hydric soils criteria			
				Hydric criteria code	Meets saturation criteria	Meets flooding criteria	Meets ponding criteria
UC:							
Urban land-Typic Cryorthents complex	Typic Cryorthents (45%)	No	---	---	---	---	---
	Urban land (45%)	---	---	---	---	---	---
	Salchaket (5%)	No	Floodplain	---	---	---	---
	Jarvis (3%)	No	Floodplain	---	---	---	---
	Fubar (2%)	No	Floodplain	---	---	---	---
W:							
Water	Water (100%)	Yes	Depression	3	No	No	Yes
WAH:							
Typic Cryaquent, Terric Cryofibrist, and Histic Cryaquept soils	Typic Cryaquents (30%)	Yes	Depression	3,2B3	Yes	No	Yes
	Histic Cryaquepts (25%)	Yes	Depression	2B3	Yes	No	No
	Terric Cryofibrists (20%)	Yes	Floodplain	1	No	No	No
	Histels, Terric (15%)	Yes	Depression	1,3	No	No	Yes
	Water (10%)	---	---	---	---	---	---

Table 16--SOIL FEATURES

Map symbol and soil name (% of map unit)	Restrictions				Subsidence		Potential frost action	Risk of corrosion	
	Depth	Kind	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
9:									
Histels, Terric (90%)	16-35	Permafrost	---	Strongly cemented	1-6	6-12	High	High	High
20:									
Mosquito (87%)-------	14-31	Permafrost	---	Strongly cemented	1-6	10-12	High	Moderate	Moderate
21A:									
Goldstream (80%)-----	14-24	Permafrost	---	Strongly cemented	1-6	6-12	High	High	High
Chatanika (15%)------	12-39	Permafrost	---	Strongly cemented	---	---	High	Moderate	Moderate
21B:									
Goldstream (85%)-----	14-24	Permafrost	---	Strongly cemented	1-6	6-12	High	High	High
Chatanika (15%)------	12-39	Permafrost	---	Strongly cemented	---	---	High	Moderate	Moderate
22:									
Tanacross (85%)------	10-28	Permafrost	---	Strongly cemented	1-8	8-16	High	High	High
25:									
Tanana (85%)---------	16-47	Permafrost	---	Strongly cemented	1-3	3-6	High	Moderate	Moderate
31:									
Eielson (60%)--------	---	---	---	---	---	---	High	Moderate	Moderate
Piledriver (30%)-----	---	---	---	---	---	---	High	Moderate	Moderate
32:									
Salchaket (90%)------	---	---	---	---	---	---	Moderate	Moderate	Moderate
35:									
North Pole (70%)-----	---	---	---	---	1-6	6-12	High	Moderate	Moderate
Mosquito (15%)-------	14-31	Permafrost	---	Strongly cemented	1-6	10-12	High	Moderate	Moderate
36:									
Jarvis (95%)---------	---	---	---	---	---	---	Moderate	Moderate	Moderate
37:									
Chena (90%)----------	---	---	---	---	---	---	Low	Moderate	Moderate
40A:									
Chatanika (90%)------	12-39	Permafrost	---	Strongly cemented	---	---	High	Moderate	Moderate
40B:									
Chatanika (90%)------	12-39	Permafrost	---	Strongly cemented	---	---	High	Moderate	Moderate
40D:									
Chatanika (90%)------	12-39	Permafrost	---	Strongly cemented	---	---	High	Moderate	Moderate
41A:									
Minto (85%)----------	---	---	---	---	---	---	High	High	High
41B:									
Minto (85%)----------	---	---	---	---	---	---	High	High	High
41C:									
Minto (85%)----------	---	---	---	---	---	---	High	High	High

Table 16--SOIL FEATURES--Continued

Map symbol and soil name (% of map unit)	Restrictions				Subsidence		Potential frost action	Risk of corrosion	
	Depth	Kind	Thick-ness	Hardness	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
41D:									
Minto (85%)----------	---	---	---	---	---	---	High	High	High
42B:									
Fairbanks (85%)------	---	---	---	---	---	---	High	Moderate	Moderate
42C:									
Fairbanks (90%)------	---	---	---	---	---	---	High	Moderate	Moderate
42CG:									
Fairbanks strongly--- sloping (75%)	---	---	---	---	---	---	High	Moderate	Moderate
Fairbanks steep (25%)	---	---	---	---	---	---	High	Moderate	Moderate
42D:									
Fairbanks (85%)------	---	---	---	---	---	---	High	Moderate	Moderate
42G:									
Fairbanks (90%)------	---	---	---	---	---	---	High	Moderate	Moderate
44D:									
Steese (85%)---------	20-40	Bedrock (paralithic)	---	Moderately cemented	---	---	Moderate	Moderate	Moderate
45D:									
Gilmore (85%)--------	5-20	Bedrock (paralithic)	---	Moderately cemented	---	---	Moderate	Moderate	Moderate
Steese (15%)---------	20-40	Bedrock (paralithic)	---	Moderately cemented	---	---	Moderate	Moderate	Moderate
45E:									
Gilmore (90%)--------	5-20	Bedrock (paralithic)	---	Moderately cemented	---	---	Moderate	Moderate	Moderate
51B:									
Saulich (90%)--------	14-24	Permafrost	---	Strongly cemented	4-8	6-12	High	High	High
51C:									
Saulich (90%)--------	14-24	Permafrost	---	Strongly cemented	4-8	6-12	High	High	High
61:									
Piledriver (90%)-----	---	---	---	---	---	---	High	Moderate	Moderate
62:									
Peede (70%)----------	---	---	---	---	---	---	High	Moderate	Moderate
Mosquito (25%)-------	14-31	Permafrost	---	Strongly cemented	1-6	10-12	High	Moderate	Moderate
64:									
Eielson (50%)--------	---	---	---	---	---	---	High	Moderate	Moderate
Tanana (40%)---------	16-47	Permafrost	---	Strongly cemented	1-3	3-6	High	Moderate	Moderate
211:									
Chatanika (60%)------	12-39	Permafrost	---	Strongly cemented	---	---	High	Moderate	Moderate
Goldstream (20%)-----	14-24	Permafrost	---	Strongly cemented	1-6	6-12	High	High	High

Table 16--SOIL FEATURES--Continued

Map symbol and soil name (% of map unit)	Restrictions				Subsidence		Potential frost action	Risk of corrosion	
	Depth	Kind	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
212:									
Goldstream (50%)	14-24	Permafrost	---	Strongly cemented	1-6	6-12	High	High	High
Bolio (45%)	14-28	Permafrost	---	Strongly cemented	5-10	15-30	High	High	High
251:									
Tanana (70%)	16-47	Permafrost	---	Strongly cemented	1-3	3-6	High	Moderate	Moderate
Mosquito (25%)	14-31	Permafrost	---	Strongly cemented	1-6	10-12	High	Moderate	Moderate
361:									
Jarvis (65%)	---	---	---	---	---	---	Moderate	Moderate	Moderate
Chena (30%)	---	---	---	---	---	---	Low	Moderate	Moderate
362:									
Fubar (40%)	---	---	---	---	---	---	Low	Moderate	Moderate
Piledriver (40%)	---	---	---	---	---	---	High	Moderate	Moderate
363:									
Jarvis (45%)	---	---	---	---	---	---	Moderate	Moderate	Moderate
Salchaket (35%)	---	---	---	---	---	---	Moderate	Moderate	Moderate
411B:									
Minto (60%)	---	---	---	---	---	---	High	High	High
Chatanika (30%)	12-39	Permafrost	---	Strongly cemented	---	---	High	Moderate	Moderate
411C:									
Minto (60%)	---	---	---	---	---	---	High	High	High
Chatanika (30%)	12-39	Permafrost	---	Strongly cemented	---	---	High	Moderate	Moderate
421C:									
Fairbanks (45%)	---	---	---	---	---	---	High	Moderate	Moderate
Steese (45%)	20-40	Bedrock (paralithic)	---	Moderately cemented	---	---	Moderate	Moderate	Moderate
421D:									
Fairbanks (45%)	---	---	---	---	---	---	High	Moderate	Moderate
Steese (45%)	20-40	Bedrock (paralithic)	---	Moderately cemented	---	---	Moderate	Moderate	Moderate
452:									
Gilmore (70%)	5-20	Bedrock (paralithic)	---	Indurated	---	---	Moderate	Moderate	Moderate
Steese (30%)	20-40	Bedrock (paralithic)	---	Indurated	---	---	Moderate	Moderate	Moderate

Table 16--SOIL FEATURES--Continued

Map symbol and soil name (% of map unit)	Restrictions				Subsidence		Potential frost action	Risk of corrosion	
	Depth	Kind	Thickness	Hardness	Initial	Total		Uncoated steel	Concrete
	In		In		In	In			
611:									
Piledriver (50%)-----	---	---	---	---	---	---	High	Moderate	Moderate
Eielson (40%)--------	---	---	---	---	---	---	High	Moderate	Moderate
CL:									
Typic Cryorthents---- (80%)	---	---	---	---	---	---	Moderate	Moderate	Moderate
Gv:									
Gravel pits (100%)---	---	---	---	---	---	---	---	---	---
Lf:									
Dump areas (100%)----	---	---	---	---	---	---	---	---	---
Rv:									
Riverwash (100%)----	---	---	---	---	---	---	---	---	---
UC:									
Typic Cryorthents---- (45%)	---	---	---	---	---	---	Moderate	Moderate	Moderate
Urban land (45%)-----	---	---	---	---	---	---	Moderate	Moderate	Moderate
W:									
Water (100%)---------	---	---	---	---	---	---	---	---	---
WAH:									
Typic Cryaquents----- (30%)	---	---	---	---	---	---	High	Moderate	Moderate
Histic Cryaquepts---- (25%)	---	---	---	---	2-3	3-6	High	High	High
Terric Cryofibrists-- (20%)	---	---	---	---	8-10	16-20	High	Moderate	Moderate

Table 17--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Bolio	Dysic, Typic Hemistels
Chatanika	Coarse-loamy, mixed, superactive, subgelic, Typic Aquiturbels
Chena	Sandy-skeletal, mixed, Typic Cryorthents
Eielson	Coarse-loamy, mixed, superactive, nonacid, Aquic Cryofluvents
Fairbanks	Coarse-silty, mixed, superactive, Typic Eutrocryepts
Fubar	Sandy-skeletal, mixed, Typic Cryofluvents
Gilmore	Loamy-skeletal, mixed, superactive, shallow, Typic Dystrocryepts
Goldstream	Coarse-silty, mixed, superactive, subgelic, Typic Histoturbels
Histels, Terric	Histels
Histic Cryaquepts	Histic Cryaquepts
Jarvis	Coarse-loamy over sandy or sandy-skeletal, mixed, superactive, nonacid, Typic Cryofluvents
Minto	Coarse-silty, mixed, superactive, Aquic Eutrocryepts
Mosquito	Coarse-loamy, mixed, superactive, subgelic, Ruptic Histoturbels
North Pole	Coarse-loamy, mixed, superactive, nonacid, Aeric Cryaquepts
Peede	Coarse-silty, mixed, superactive, nonacid, Typic Cryaquents
Piledriver	Coarse-loamy over sandy or sandy skeletal, mixed, superactive, nonacid, Aquic Cryofluvents
Salchaket	Coarse-loamy, mixed, superactive, nonacid, Typic Cryofluvents
Saulich	Coarse-silty, mixed, superactive, subgelic, Typic Histoturbels
Steese	Coarse-loamy, mixed, superactive, Typic Eutrocryepts
Tanacross	Coarse-loamy, mixed, superactive, subgelic, Typic Histoturbels
Tanana	Coarse-loamy, mixed, superactive, subgelic, Typic Aquiturbels
Terric Cryofibrists	Loamy, Terric Cryofibrists
Typic Cryaquents	Typic Cryaquents
Typic Cryorthents	Typic Cryorthents

Table 18--PLANT NAMES

Common name	Latin name
Alder	*Alnus* sp.
Balsam poplar	*Populus balsamifera*
Black spruce	*Picea mariana*
Bog birch	*Betula glandulosa*
Cottonsedge	*Eriophorum* sp.
Grass	*Gramineae*
Labrador tea	*Ledum palustre*
Paper birch	*Betula papyrifera*
Quaking aspen	*Populus tremuloides*
Sedge	*Carex* sp.
Tamarack	*Larix laricina*
White spruce	*Picea glauca*
Willow	*Salix* sp.

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