United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Colorado Agricultural Experiment Station

Soil Survey of Georgetown Area, Colorado, parts of Clear Creek, Gilpin, and Park Counties

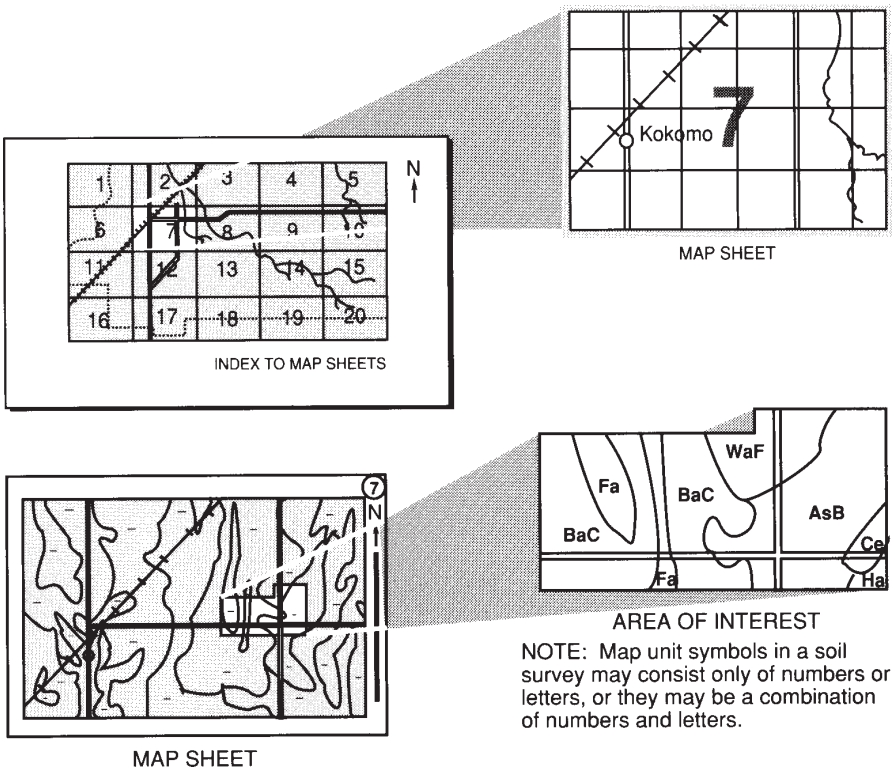
How To Use This Soil Survey

Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.
To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on
the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



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

Major fieldwork for this soil survey was completed in 1997. Soil names and descriptions were approved in 2000. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2000. This survey was made cooperatively by the Natural Resources Conservation Service and the Colorado Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Jefferson Soil Conservation District, the Clear Creek County Commissioners, and the Gilpin County Commissioners. The Jefferson Soil Conservation District and the State of Colorado provided financial assistance.

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Cover: Shown is a view of Mount Evans peeking through a spring snowstorm. Mount Evans is a prominent landmark adjacent to the Georgetown Soil Survey Area. The quaking aspen in the foreground exhibit severe damage from elk gnawing on the bark in past winters.

Contents

How To Use This Soil Survey 3
Foreword 9
Soil Survey of Georgetown Area, Colorado 11
History 11
Physiography and Drainage 12
Industry and Recreation 12
Geology 13
Climate 13
How This Survey Was Made 14
Detailed Soil Map Units 17
1—Arents-Dumps, mine complex, 5 to 80 percent slopes 18
2—Bendemeere-Tolland complex, 30 to 70 percent slopes 18
3—Breece gravelly sandy loam, 3 to 40 percent slopes 19
4—Cathedral-Rock outcrop complex, 5 to 30 percent slopes 20
5—Cathedral-Rock outcrop complex, 30 to 70 percent slopes 21
6—Cumulic Cryaquolls, 0 to 3 percent slopes ... 22
7—Gateview-Kittredge complex, 20 to 45 percent slopes 23
8—Grimstone-Bullwark family complex, 9 to 30 percent slopes 24
9—Grimstone-Bullwark family complex, 30 to 60 percent slopes 25
10—Grimstone-Hiwan-Rock outcrop complex, 30 to 60 percent slopes 26
11—Grimstone-Peeler-Rock outcrop complex, 15 to 30 percent slopes 27
12—Herbman gravelly sandy loam, 3 to 9 percent slopes 29
13—Herbman-Rock outcrop complex, 9 to 15 percent slopes 29
14—Herbman-Rock outcrop complex, 15 to 30 percent slopes 30
15—Hiwan-Rock outcrop-Bendemeere complex, 30 to 70 percent slopes 31
16—Ivywild-Legault-Rock outcrop complex, 30 to 60 percent slopes 33
17—Ivywild-Mammoth-Legault complex, 30 to 60 percent slopes 34
18—Kataka-Resort-Rock outcrop complex, 30 to 70 percent slopes 35
19—Kittredge-Guanella complex, 3 to 9 percent slopes 36
20—Kittredge-Guanella complex, 9 to 30 percent slopes 37
21—Legault very gravelly sandy loam, 5 to 15 percent slopes 38
22—Legault very gravelly sandy loam, 15 to 30 percent slopes 39
23—Legault-Rock outcrop complex, 30 to 80 percent slopes 40
24—Lininger-Breece gravelly sandy loams, 3 to 12 percent slopes 40
25—Lininger-Resort complex, 5 to 15 percent slopes 41
26—Lininger-Trag gravelly sandy loams, 15 to 30 percent slopes 43
27—Lone Rock-Breece gravelly sandy loams, 2 to 9 percent slopes 44
28—Lone Rock-Breece gravelly sandy loams, 9 to 15 percent slopes 44
30—Mammoth-Ohman-Bendemeere complex, 15 to 30 percent slopes 45
31—Mammoth-Ohman-Bendemeere complex, 30 to 60 percent slopes 47
32—Mammoth-Ohman-Rock outcrop complex, 30 to 60 percent slopes 48
33—Ohman-Ivywild very gravelly sandy loams, 30 to 60 percent slopes 50
34—Ohman-Legault very gravelly sandy loams, 15 to 30 percent slopes 51
35—Ohman-Legault very gravelly sandy loams, 30 to 60 percent slopes 52
36—Pettingell-Rogert-Rock outcrop complex, 30 to 80 percent slopes 53
37—Raleigh very gravelly sandy loam, 9 to 15 percent slopes 54
38—Raleigh very gravelly sandy loam, 15 to 30 percent slopes 54
39—Raleigh very gravelly sandy loam, 30 to 50 percent slopes 55
40—Raleigh-Rock outcrop complex, 50 to 70 percent slopes 56
41—Redfeather-Legault complex, 30 to 70 percent slopes 56

42—Redfeather-Legault-Tolvar complex, 12 to 30 percent slopes 57
43—Resort very gravelly sandy loam, 3 to 10 percent slopes 59
44—Resort very gravelly sandy loam, 10 to 30 percent slopes 60
45—Resort very gravelly sandy loam, 15 to 30 percent south slopes 60
46—Resort very stony sandy loam, 30 to 50 percent slopes 61
47—Resort-Cathedral complex, 30 to 60 percent slopes 62
48—Resort-Cathedral-Rubble land complex, 30 to 60 percent slopes 63
49—Rock outcrop, 30 to 100 percent slopes 64
50—Rock outcrop-Cathedral-Resort complex, 30 to 70 percent slopes 65
51—Rock outcrop-Resort complex, 30 to 80 percent slopes 66
52—Rock outcrop-Rubble land-Cathedral complex, 15 to 40 percent slopes 67
53—Rock outcrop-Rubble land-Cathedral complex, 40 to 100 percent slopes 68
54—Rock outcrop-Tolland complex, 30 to 100 percent slopes 69
55—Rogert-Herbman-Rock outcrop complex, 30 to 70 percent slopes 70
56—Tahana-Legault-Rock outcrop complex, 30 to 70 percent slopes 71
57—Tolland-Rock outcrop complex, 30 to 80 percent slopes 72
58—Tonahutu-Ohman complex, 30 to 60 percent slopes 73
59—Trag gravelly sandy loam, 3 to 15 percent slopes 74
60—Troutdale-Rogert-Kittredge complex, 3 to 15 percent slopes 75
61—Troutdale-Sprucedale gravelly sandy loams, 3 to 15 percent slopes 76
62—Typic Cryaquents-Cumulic Cryaquolls complex, 0 to 3 percent slopes 77
63—Urban land-Breece complex, 0 to 9 percent slopes 78
64—Water 79
Use and Management of the Soils 87
Interpretive Ratings 87
Rating Class Terms 87
Numerical Ratings 87
Rangeland 87
Ecological Sites and Characteristic Native Vegetation 88
Recreation 89
Forest Management 90
Building Site Development 91
Engineering 93
Sanitary Facilities 93
Construction Materials 95
Soil Properties 97
Engineering Index Properties 97
Physical and Chemical Properties 98
Water Features 99
Soil Features 100
Hydric Soils 101
Classification of the Soils 103
Soil Series and Their Morphology 103
Arents 103
Bendemeere Series 104
Breece Series 106
Bullwark Family 106
Cathedral Series 108
Cumulic Cryaquolls 108
Gateview Taxadjunct 109
Grimstone Series 110
Guanella Series 111
Herbman Taxadjunct 112
Hiwan Series 112
Ivywild Series 113
Kataka Series 114
Kittredge Series 115
Legault Series 116
Lininger Series 117
Lone Rock Series 118
Mammoth Series 118
Ohman Series 120
Peeler Series 121
Pettingell Series 122

Raleigh Series 123
Redfeather Taxadjunct 123
Resort Series 124
Rogert Series 125
Sprucedale Series 126
Tahana Series 126
Tolland Series 127
Tolvar Series 128
Tonahutu Taxadjunct 130
Trag Series 131
Troutdale Series 132
Typic Cryaquents 133
Formation of the Soils 137
References 141
Glossary 143
Tables 155
Table 1.--Temperature and precipitation data .. 157
Table 2.--Freeze dates 159
Table 3.--Growing season 161
Table 4.--Acreage and proportionate extent of the soils 162
Table 5.--Ecological sites and characteristic native vegetation 165
Table 6.--Recreation (A) 183
Table 7.--Recreation (B) 195
Table 8.--Forestland management (A) 207
Table 9.--Forestland management (B) 217
Table 10.--Forestland management (C) 226
Table 11.--Forestland management (D) 236
Table 12.--Forestland management (E) 244
Table 13.--Building site development (A) 253
Table 14.--Building site development (B) 264
Table 15.--Sanitary facilities (A) 277
Table 16.--Sanitary facilities (B) 291
Table 17.--Construction materials (A) 304
Table 18.--Construction materials (B) 315
Table 19.--Engineering index properties 330
Table 20.--Physical and chemical properties of the soils 369
Table 21.--Water features 382
Table 22.--Soil features 390
Table 23.--Classification of the soils 397

Issued 2003

Foreword

This soil survey contains information that affects land use planning in this survey area. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

This soil survey is designed for many different users. Farmers, ranchers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the survey to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed 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 Cooperative Extension Service.

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Soil Survey of
Georgetown Area, Colorado, Parts of Clear Creek, Gilpin, and Park Counties

By Michael Petersen and James Borchert

Fieldwork by Michael Petersen, James Borchert, Dennis Moore, and James Fuchs

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
the Colorado Agricultural Experiment Station and the County Commissioners of Clear Creek and Gilpin Counties

General Nature of the Survey Area

The survey area includes portions of three counties: Clear Creek, Gilpin and Park Counties, Colorado (fig. 1). The survey area consists of mountains and narrow valleys. Clear Creek is the major drainageway from west to east, originating from the Continental Divide on the western boundary of Clear Creek County. Elevation ranges from approximately 7,000 to over 11,000 feet.

The survey area includes 116,880 acres, or about 175 square miles. In 2000, the total population of Clear Creek County was 9,322 and the population of Gilpin County was 4,757. Georgetown, the county seat of Clear Creek County, had a population of 1,088 and Idaho Springs totaled 1,889. Central City, the county seat of Gilpin County, had a population of 515.

Figure 1.—Location of the Georgetown Area in Colorado.

History

It is thought that some of the first explorers of the Georgetown area were trapping for pelts and seeking the hidden gold treasures of the Conquistadors. In the early 1830s, a trapper named Vasquez ventured into Clear Creek County (Historical Society of Idaho Springs, 1986).

Clear Creek and Gilpin counties are two of the original 17 counties of the Colorado Territory established in 1861 by the first governor, William Gilpin. Colorado became a state in 1876.

The founding of this area was realized in the winter of 1859 when George Jackson discovered gold in Chicago Creek. The news traveled fast, bringing the “Fifty-Niners” into the area then called Spanish Bar, now known as Idaho Springs.

In May of 1859, John Gregory discovered gold near Black Hawk, Colorado and the rush was on to strike it rich in both the North Fork of Clear Creek and in Clear Creek itself (Pearce and others, 1987). Silver was discovered nearby in 1864, and mining rose to a new frenzy of activity. From 1864 to 1879, silver mining reigned as the most important business in the territory.

In 1868 Nathaniel Hill, a chemist, opened the first smelter operation in the Black Hawk area to extract silver from the igneous and metamorphic rocks. In the late 1870s, there were so many smelters in operation that some people in the Black Hawk area developed breathing difficulties. These mills faltered

and failed in the winter of 1879-80 because of the price of fuels.

Mining operations were earning millions of dollars annually up into the 1890s and bringing in investors from the eastern United States. These tycoons became world-renowned mining authorities of high standards and great wealth. Plays, operas, and stage shows entertained and refreshed the hard-working miners and loggers. The premier show place in Central City, Teller House, still offers plays and operas reminiscent of the mining boom years.

Logging began in the survey area with the advent of the mines and the growing need for supportive timbers for the shafts, as well as for homes and businesses. By the end of the 1890s, most of the mountains in and around the mining communities and camps were denuded of trees for mine support timbers and lumber. Between 1880-1890, logging was the second-largest industry in Clear Creek and Gilpin counties. Logging continued in the mountains until about 1942.

Mountain ranching was initialized by several acts of the U.S. Congress: the Pre-emption Act of 1841, the Homestead Act of 1862, and the Timber and Stone Act of 1878. Industrious and hardy families moved into this mountainous region to supply mules, horses, food, and wood to the miners. One of the first well-known ranchers was John Vance, who used the acquisition acts to acquire land in southern Clear Creek county. Travelers from Denver would stop at these ranches to rent horses.

Transportation into this wealthy mining region was accomplished by wagon and stagecoach up until the 1870s. The narrow-gauge railways reached Black Hawk in 1872; in 1877, the railways were built to Idaho Springs and Georgetown. Rail lines were laid along Leavenworth Creek from Georgetown to the mining camp of Waldorf in the early 1900s (Digerness, 1982). Employing great feats of engineering, tracks were laid up to the summit of Mount McClellan near the Continental Divide, and trains operated steadily there until 1918.

By 1935 the gold and silver mining boom in Colorado had collapsed. The last large mining undertaking in the Georgetown area was the discovery of molybdenum ore in Clear Creek County. This ore was in demand in the time period between World Wars I and II. The Henderson Mine in Borakey Gulch west of Empire, Colorado still produces molybdenum disulfide for molybdenum to harden steel.

Recreation and tourism play important roles in the economic survival of this area. At the time of this writing, gold and silver mines are weakly active in the Georgetown area, and the next “motherlode” is still just a few feet away.

Physiography and Drainage

The survey area features two major landforms: mountains and valleys. The area is in the major physiographic province of the Southern Rocky Mountains (Thornbury, 1969). Nearly 85 percent of this survey area is surrounded by National Forest.

The rugged, moderately steep to very steep mountains make up nearly 100 percent of the survey area. It is in the heart of the Front Range of Colorado, 20 miles due west of the Denver metropolitan area. The Georgetown area is composed of igneous and metamorphic bedrock. Landscapes are characterized by steep, narrow, and deeply dissected canyons that drain the high peaks which lie to the west and comprise the Continental Divide. Some Pleistocene-age glacial ice has left remnants of terminal moraines, outwash fans, and detritus (8,425 feet elevation) where Interstate 70 and U.S. 40 intersect in Clear Creek County, just below the community of Empire. Remnants and fragments of glacial outwash fans and recessional moraines (Birkeland, 1974, 1984) are visible in the Chicago Creek drainageway above where the South Chicago and Chicago Creeks (9,450 feet elevation) join. Some remnants of glacial ice extent are visible in South Boulder Creek, west of Rollinsville near Tolland (9,100 feet elevation).

Elevation in the survey area ranges from about 7,000 feet above sea level on the eastern boundary of the survey area, where the Clear Creek exits into Jefferson County, to over 11,000 feet on the north side of Goliath Peak, a satellite of the Mount Evans massif.

Clear Creek is the major drainageway of Clear Creek County. The North Fork of Clear Creek and South Boulder Creek are the major streams of Gilpin County. Clear Creek generally flows through the area from west to east; the North Fork travels northwest to southeast, where it exits Gilpin County in its far southeast corner. The South Boulder Creek drainageway runs nearly west to east, with its headwaters in the Rogers Pass area. An important drainageway of the southern sections of Clear Creek County is Bear Creek with its many small tributaries, which drain mainly west to east from their headwaters on Mount Evans.

Industry and Recreation

Tourism, ranching, limited logging, and mining are the important factors of the Georgetown area’s

diverse economy. In Gilpin County, tourism derived from the gaming industry boosts the local economy.

Silver and gold mining are limited to existing deep rock mines. Other mined or processed rocks include crushed rock for roadbase and gravel. Some timber harvesting still goes on via thinning operations and limited harvest with the guidance from the Colorado State Forest Service on private lands, and the U.S. Forest Service on the public lands.

The Georgetown area has attracted a growing population of Denver metropolitan commuters. Denver is approximately 25 miles to the east and downhill on Interstate 70. This segment of the population has changed the landscape with dwellings and subdividing of mountainous terrain. In the Central City-Black Hawk area of Gilpin County, the gaming industry has dramatically changed the mountain communities with modern buildings, large parking lots, new roads and streets, and support facilities.

The survey area also offers a variety of recreational opportunities. Rafting on Clear Creek is popular with the summer tourists. St. Mary's Glacier, Echo Lake, Mt. Evans, and the historic Argo Mine are sites of tourism interest in Clear Creek County. In Gilpin County, the historic landmarks in the communities of Black Hawk and Central City attract many visitors, as do the gaming industries in these two communities. The mountains offer opportunities for camping, fishing, hiking, and big-game hunting.

The Georgetown area features many scenic views. The Peak-to-Peak highway (Colorado State Highway 119) in Gilpin County offers dramatic mountain scenery. Mt. Evans (14,264 feet) in Clear Creek County, adjacent to the survey area, boasts the Mount Evans Scenic Byway, which is the highest paved road in North America. Loveland Ski Area along Interstate 70 is a popular ski resort with skiers from the metropolitan areas. The historic communities of Georgetown, Silver Plume, Idaho Springs, and Empire, all of which originated from mining camps begun in the 1860s, attract visitors year-round.

Geology

The geologic formations in the survey area can be grouped according to age and type. The Precambrian complex includes metasedimentary and intrusive igneous rocks. Specific rock types are biotite gneiss, microcline gneiss, quartz diorite, schist and granitic rocks. Surficial deposits are of Quaternary age.

The Precambrian complex of metamorphic and igneous crystalline rocks are known as "basement" rocks. Near the end of the Mesozoic and in the early Tertiary, the Larimide orogeny occurred and major folding and faulting of rocks took place. Subsequent erosion and detritus associated with the uplift scarified older rocks out of the major drainageways to the east.

The Precambrian formations include microcline gneiss of the Boulder Creek granite and quartz diorite, biotite-mucovite granite of the Silver Plume granite. The Silver Plume granite intruded after the Boulder Creek granite, and cataclastic deformation of rocks occurred along the major shear zones of the faults. North- to northeasterly-trending folds developed in much of Clear Creek and Gilpin Counties (Braddock, 1969).

The present physiography of the area was shaped primarily in Quaternary time by the actions of mass wasting, limited periglacial activity, and streams carrying water and detritus from high mountain glacial melt (Flint, 1971). Glacial ice was confined to high elevation cirques except for the ice lobes that extended down Chicago and South Clear Creeks, the West Fork of Clear Creek, upper Bear Creek, and Fall River in Clear Creek County. In Gilpin County, ice lobes of mountain-derived glaciers are evident in South Boulder Creek, Mammoth Gulch, and Jenny and Arapaho Creeks.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Cabin Creek south of Georgetown in the period 1968 to 1990, and at Evergreen in the period 1961 to 1990. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

Growing degree days are shown in Table 3. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F.) The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

In winter at Cabin Creek, the average temperature is 21.7 degrees F. and the average daily minimum temperature is 11.3 degrees F. The lowest temperature on record is -28 degrees F. In summer, the average temperature is 54.0 degrees and the average daily maximum temperature is 66.6 degrees F. The highest recorded temperature at Cabin Creek is 84 degrees F.

The total annual precipitation at Cabin Creek is about 18.6 inches. Of this, 12.6 inches, or 68 percent,

usually falls during the months of April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall from April through September is less than 6.6 inches.

The average seasonal snowfall at Cabin Creek is about 126.7 inches. On the average, 101 days of the year have at least 1 inch of snow on the ground; the number of such days varies greatly from year to year. On the average, 50 days per year receive 0.1 inch of snow or more. March and April are the two snowiest months.

During the winter months at Evergreen, the average temperature is 27.7 degrees F. and the average daily minimum temperature is 10.5 degrees F. The lowest Evergreen temperature on record is -38 degrees F. In summer, the average temperature is 61.1 degrees F., and the average daily maximum temperature is 78.5 degrees F. The highest recorded temperature in Evergreen is 95 degrees F.

The total annual precipitation at Evergreen is about 19 inches. Of this, 13.1 inches, or 69 percent, usually falls from April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall during the months of April through September is less than 6.2 inches.

The average seasonal snowfall at Evergreen is about 86.5 inches. On the average, 21 days of the year have at least 1 inch of snow on the ground; the number of such days varies greatly from year to year. On the average 43 days per year receive .1 inch of snow or more. March and April are the two snowiest months.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is 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. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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 of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil 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 relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some

interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy 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. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

The descriptions, names, and delineations of the soils in this survey area do not fully agree with those of the soils in adjacent survey areas. Differences are the result of a better knowledge of soils, modifications in series concepts, or variations in the intensity of mapping or in the extent of the soils in the survey areas.

Detailed Soil Map Units

The map units delineated on the detailed soil maps in 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. They also can be used to plan the management needed for those uses.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils 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 minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components 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 minor components 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 landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite 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*. Except for differences in texture of the surface layer, all 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, slope, stoniness, salinity, 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, Legault very gravelly sandy loam, 5 to 15 percent slopes is a phase of the Legault 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. Grimstone-Bullwark family complex, 9 to 30 percent slopes is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

1—Arents-Dumps, mine complex, 5 to 80 percent slopes

Map Unit Setting

Elevation: 7,400 to 9,000 feet (2,256 to 2,743 meters)
Mean annual precipitation: 16 to 20 inches (410 to 510 millimeters)
Mean annual air temperature: 36 to 45 degrees F. (2.5 to 7.2 degrees C.)
Frost-free period: 40 to 85 days

Map Unit Composition

Arents and similar soils: 45 percent
Dumps, mine: 35 percent
Minor components: 20 percent

Component Descriptions

Arents soils

Landform: mountain slopes
Position on landform: toeslopes and footslopes
Parent material: mine spoil or earthy fill
Slope: 5 to 80 percent
Surface fragments: about 2 percent
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.9 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Land capability subclass (nonirrigated): 7e

Typical Profile:
C1—0 to 24 inches; very cobbly loamy coarse sand
C2—24 to 28 inches; gravelly sandy loam
C3—28 to 33 inches; extremely cobbly loamy sand
C4—33 to 60 inches; extremely cobbly loamy sand

Dumps, mine

Description: Mine dumps consist of nonsoil material removed from mines including acidic processed ore, rock fragments, and earthy material.
Landform: talus slopes
Parent material: acidic mine spoil or earthy fill derived from igneous and metamorphic rock
Slope: 5 to 80 percent
Available water capacity: about 1.2 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Land capability subclass (nonirrigated): 8

Minor Components

Rubble land
Composition: about 10 percent
Landform: talus slopes
Slope: 5 to 80 percent
Depth to restrictive feature: 20 to 80 inches to bedrock (lithic)
Drainage class: excessively drained

Lone Rock and similar soils
Composition: about 5 percent
Landform: alluvial fans, terraces, mountain slopes
Position on landform: footslopes
Slope: 15 to 50 percent
Drainage class: somewhat excessively drained
Ecological site: Mountain Loam

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 5 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Major Uses

Watershed, wildlife habitat, and homesites

2—Bendemeere-Tolland complex, 30 to 70 percent slopes

Map Unit Setting

Elevation: 8,200 to 10,200 feet (2,499 to 3,109 meters)
Mean annual precipitation: 17 to 23 inches (430 to 580 millimeters)
Mean annual air temperature: 37 to 43 degrees F. (3.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of Rocky Mountain Douglas-fir, lodgepole pine, and

scattered Engelmann's spruce and ponderosa pine.

Map Unit Composition

Bendemeere and similar soils: 50 percent
Tolland and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Bendemeere soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 6 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PSME/JAAM (Rocky Mountain Douglas-fir, cliffbush)
Potential native vegetation: cliffbush, common juniper, kinnikinnick, Ross' sedge, Woods' rose, mallow ninebark, prairie sagewort, quaking aspen
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; very gravelly sandy loam
E—3 to 10 inches; gravelly coarse sandy loam
E and Bt1—10 to 21 inches; very cobbly coarse sandy loam
E and Bt2—21 to 30 inches; very gravelly loamy coarse sand
E and Bt1—30 to 42 inches; very gravelly loamy sand
E and Bt2—42 to 50 inches; gravelly loamy sand
BC—50 to 62 inches; very gravelly coarse sandy loam

Tolland soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous sandy colluvium derived from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 6 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.5 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)
Potential native vegetation: Ross' sedge, common juniper, Woods' rose, kinnikinnick, dwarf blueberry, heartleaf arnica
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 inch to 2 inches; moderately decomposed plant material
A—2 to 5 inches; very gravelly sandy loam
BE—5 to 11 inches; very gravelly coarse sandy loam
C1—11 to 50 inches; extremely gravelly loamy coarse sand
C2—50 to 69 inches; extremely cobbly loamy coarse sand

Minor Components

Legault and similar soils
Composition: about 15 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 70 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Major Uses

Watershed, wildlife habitat, and recreation

3—Breece gravelly sandy loam, 3 to 40 percent slopes

Map Unit Setting

Elevation: 7,200 to 8,600 feet (2,195 to 2,621 meters)
Mean annual precipitation: 17 to 20 inches (430 to 510 millimeters)
Mean annual air temperature: 41 to 45 degrees F. (5.0 to 7.0 degrees C.)
Frost-free period: 70 to 100 days

Map Unit Composition

Breece and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Breece soils

Landform: mountain slopes, drainageways, alluvial fans
Position on landform: toeslopes
Parent material: alluvium and slope alluvium derived from igneous and metamorphic rock
Slope: 3 to 40 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 5.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Loamy Park
Potential native vegetation: Parry's danthonia, Arizona fescue, Letterman's needlegrass, mountain muhly, needleandthread, slender wheatgrass, muttongrass, elk sedge
Land capability subclass (nonirrigated): 6e

Typical Profile:
A1—0 to 7 inches; gravelly sandy loam
A2—7 to 20 inches; gravelly sandy loam
C1—20 to 42 inches; gravelly coarse sandy loam
C2—42 to 72 inches; gravelly sandy loam

Minor Components

Lininger and similar soils
Composition: about 10 percent
Landform: ridges, mountain slopes
Position on landform: backslopes
Slope: 3 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Cathedral and similar soils
Composition: about 8 percent
Landform: ridges, mountain slopes
Position on landform: shoulders, backslopes
Slope: 5 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Cumulic Cryaquolls and similar soils
Composition: about 2 percent
Landform: drainageways
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: occasional
Ecological site: Mountain Meadow

Major Uses

Rangeland, wildlife habitat, recreation, and watershed

4—Cathedral-Rock outcrop complex, 5 to 30 percent slopes

Map Unit Setting

Elevation: 7,200 to 8,200 feet (2,194 to 2,499 meters)
Mean annual precipitation: 16 to 18 inches (410 to 460 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists mainly of scattered ponderosa pine, Rocky Mountain Douglas-fir, and Rocky Mountain juniper.

Map Unit Composition

Cathedral and similar soils: 65 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Cathedral soils

Landform: ridges, mountain slopes
Position on landform: backslopes, shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 5 to 30 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, mountain mahogany, antelope bitterbrush, wax

currant, western wheatgrass, western snowberry, yucca
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 3 inches; very cobbly sandy loam
AB—3 to 6 inches; very gravelly sandy loam
Bw—6 to 11 inches; very gravelly sandy loam
R—11 to 15 inches; unweathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 5 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Lininger and similar soils
Composition: about 5 percent
Landform: mountain slopes and ridges
Position on landform: backslopes
Slope: 5 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Trag and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Mountain Loam

Major Uses

Watershed, wildlife habitat, and recreation

5—Cathedral-Rock outcrop complex, 30 to 70 percent slopes

Map Unit Setting

Elevation: 7,000 to 8,200 feet (2,134 to 2,499 meters)
Mean annual precipitation: 17 to 19 inches (430 to 480 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists mainly of scattered ponderosa pine, Rocky Mountain Douglas-fir, and Rocky Mountain juniper.

Map Unit Composition

Cathedral and similar soils: 65 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Cathedral soils

Landform: ridges, mountain slopes
Position on landform: shoulders, backslopes
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, mountain mahogany, antelope bitterbrush, wax currant, western wheatgrass, western snowberry, yucca
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very cobbly coarse sandy loam
AB—3 to 6 inches; very gravelly sandy loam
Bw—6 to 11 inches; very gravelly sandy loam
R—11 to 15 inches; unweathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, ridges

Position on landform: shoulders, backslopes
Parent material: igneous and metamorphic rock
Slope: 30 to 70 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Trag and similar soils
Composition: about 4 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Mountain Loam

Lininger and similar soils
Composition: about 3 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Arents and similar soils
Composition: about 3 percent
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Major Uses

Watershed, wildlife habitat, and recreation

6—Cumulic Cryaquolls, 0 to 3 percent slopes

Map Unit Setting

Elevation: 7,400 to 8,600 feet (2,256 to 2,621 meters)
Mean annual precipitation: 17 to 19 inches (430 to 480 millimeters)
Mean annual air temperature: 36 to 39 degrees F. (2.0 to 4.0 degrees C.)
Frost-free period: 25 to 75 days

Map Unit Composition

Cumulic Cryaquolls and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Cumulic Cryaquolls soils

Landform: drainageways
Parent material: alluvium derived from igneous and metamorphic rock
Slope: 0 to 3 percent
Drainage class: poorly drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 4.6 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Flooding hazard: occasional
Seasonal depth to a high water table: about 6 to 18 inches
Runoff class: very low
Ecological site: Mountain Meadow
Potential native vegetation: tufted hairgrass, Nebraska sedge, Baltic rush, American mannagrass, smallwing sedge
Land capability subclass (nonirrigated): 6w

Typical Profile:
A—0 to 6 inches; loam
Ag1—6 to 14 inches; loam
Ag2—14 to 21 inches; loam
2C—21 to 64 inches; very gravelly sand

Minor Components

Lininger and similar soils
Composition: about 5 percent
Landform: ridges
Slope: 3 to 5 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Trag and similar soils
Composition: about 4 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 3 to 15 percent

Drainage class: well drained
Ecological site: Mountain Loam

Breece and similar soils
Composition: about 3 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Typic Cryaquents and similar soils
Composition: about 3 percent
Landform: flood plains, oxbows
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: frequent
Ecological site: POAN3/SAEX-BEFO (narrowleaf cottonwood/coyote willow-river birch)

Major Uses

Hayland, homesites, and watershed

7—Gateview-Kittredge complex, 20 to 45 percent slopes

Map Unit Setting

Elevation: 8,000 to 9,600 feet (2,438 to 2,926 meters)
Mean annual precipitation: 17 to 23 inches (430 to 580 millimeters)
Mean annual air temperature: 36 to 43 degrees F. (2.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, quaking aspen, and Rocky Mountain Douglas-fir on the Gateview soil.

Map Unit Composition

Gateview and similar soils: 50 percent
Kittredge and similar soils: 30 percent
Minor components: 20 percent

Component Descriptions

Gateview soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 45 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.2 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PICO/SHCA (lodgepole pine, russet buffaloberry)
Potential native vegetation: russet buffaloberry, Thurber's fescue, common juniper, spike trisetum, Woods' rose, Ross' sedge
Land capability subclass (nonirrigated): 7e

Typical Profile:
A1—0 to 7 inches; gravelly sandy loam
A2—7 to 18 inches; very cobbly sandy loam
BC—18 to 42 inches; very cobbly sandy loam
C—42 to 62 inches; very cobbly loamy sand

Kittredge soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous alluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 20 to 45 percent
Surface fragments: about 0 percent
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 7.9 inches (moderate)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 10 inches; sandy loam
Bt1—10 to 13 inches; sandy clay loam
Bt2—13 to 22 inches; clay loam
Bt3—22 to 28 inches; sandy clay loam
Bt4—28 to 38 inches; gravelly sandy clay loam
BC—38 to 53 inches; gravelly clay loam
C—53 to 72 inches; loamy sand

Minor Components

Tahana and similar soils
Composition: about 5 percent

Landform: mountain slopes
Position on landform: backslopes
Slope: 30 to 45 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained

Pettingell and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 20 to 45 percent
Drainage class: well drained
Ecological site: Stony Loam

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 20 to 45 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Raleigh and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders
Slope: 20 to 45 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Ecological site: Shallow Loam

Major Uses

Rangeland, wildlife habitat, and watershed

8—Grimstone-Bullwark family complex, 9 to 30 percent slopes

Map Unit Setting

Elevation: 8,100 to 9,700 feet (2,469 to 2,957 meters)
Mean annual precipitation: 19 to 24 inches (480 to 610 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine and Rocky Mountain Douglas-fir. This map unit occurs south of Central City.

Map Unit Composition

Grimstone and similar soils: 45 percent
Bullwark family and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Grimstone soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 9 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 3.5 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PICO/ARUV (lodgepole pine, kinnikinnick)
Potential native vegetation: kinnikinnick, common juniper, Ross' sedge, Woods' rose, bluegrass, spike fescue
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; sandy loam
E—4 to 19 inches; gravelly sandy loam
E/B—19 to 25 inches; loam
Bt—25 to 33 inches; loam
Cr—33 to 36 inches; weathered bedrock

Bullwark family soils

Landform: ridges, mountain slopes
Position on landform: footslopes, backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 9 to 30 percent
Surface fragments: about 1 percent stones
Depth to restrictive feature: 20 to 63 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.0 inches (very low)
Shrink-swell potential: about 0.8 percent (low)
Runoff class: low
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper,

kinnikinnick, Ross' sedge, bluegrass, Woods' rose, spike fescue, mountain thermopsis
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; gravelly sandy loam
E—4 to 22 inches; gravelly sandy loam
E and Bt—22 to 40 inches; very gravelly sandy loam
BC—40 to 63 inches; very gravelly loamy sand

Minor Components

Tolvar and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 12 to 30 percent
Drainage class: well drained

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 9 to 30 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Arents and similar soils
Composition: about 3 percent
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Rock outcrop
Composition: about 2 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 9 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Major Uses

Homesites, recreation, wildlife habitat, woodland, and watershed

9—Grimstone-Bullwark family complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 8,100 to 9,700 feet (2,469 to 2,957 meters)
Mean annual precipitation: 19 to 24 inches (480 to 610 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, Rocky Mountain Douglas-fir, and scattered quaking aspen. This map unit occurs south of Central City.

Map Unit Composition

Grimstone and similar soils: 45 percent
Bullwark family and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Grimstone soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 3.5 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/ARUV (lodgepole pine, kinnikinnick)
Potential native vegetation: kinnikinnick, common juniper, Ross' sedge, Woods' rose, bluegrass, spike fescue
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; sandy loam
E—4 to 19 inches; gravelly sandy loam
E/B—19 to 25 inches; loam
Bt—25 to 33 inches; loam
Cr—33 to 36 inches; weathered bedrock

Bullwark family soils

Landform: ridges, mountain slopes
Position on landform: backslopes, footslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 1 percent stones
Depth to restrictive feature: 20 to 63 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.0 inches (very low)
Shrink-swell potential: about 0.8 percent (low)
Runoff class: medium
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, kinnikinnick, Ross' sedge, bluegrass, Woods' rose, spike fescue, mountain thermopsis
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; gravelly sandy loam
E—4 to 22 inches; gravelly sandy loam
E and Bt—22 to 40 inches; very gravelly sandy loam
BC—40 to 63 inches; very gravelly loamy sand

Minor Components

Tolvar and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 12 to 30 percent
Drainage class: well drained

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 60 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Arents and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Major Uses

Homesites, recreation, wildlife habitat, woodland, and watershed

10—Grimstone-Hiwan-Rock outcrop complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 7,000 to 9,500 feet (2,134 to 2,896 meters)
Mean annual precipitation: 17 to 20 inches (432 to 508 millimeters)
Mean annual air temperature: 41 to 43 degrees F. (5.0 to 6.1 degrees C.)
Frost-free period: 55 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, subalpine fir, Engelmann's spruce, and Rocky Mountain Douglas-fir. This map unit joins the Golden Soil Survey on north-facing mountain slopes and ridges.

Map Unit Composition

Grimstone and similar soils: 35 percent
Hiwan and similar soils: 30 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Grimstone soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 2 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 3.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high

Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: dwarf blueberry, grouse whortleberry, Ross' sedge, common juniper, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 2 inches; sandy loam
E—2 to 11 inches; gravelly sandy loam, gravelly loamy sand
E/B—11 to 16 inches; gravelly sandy loam, gravelly loamy sand
Bt—16 to 23 inches; gravelly sandy clay loam
BC—23 to 36 inches; gravelly sandy loam
Cr—36 to 40 inches; weathered bedrock

Hiwan soils

Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Depth to restrictive feature: 7 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: about 0.6 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: PICO/ARUV (lodgepole pine, kinnikinnick)
Potential native vegetation: kinnikinnick, bluegrass, common juniper, sedge
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 1 inch; stony loamy sand
Bw—1 inch to 15 inches; very gravelly loamy sand, very gravelly sand
R—15 to 19 inches; unweathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes and ridges
Position on landform: backslopes, shoulders
Parent material: igneous and metamorphic rock
Slope: 30 to 60 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 30 to 60 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Peeler and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)

Tolvar and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 12 to 30 percent
Drainage class: well drained

Major Uses

Woodland, wildlife habitat, recreation, and few areas for community development

11—Grimstone-Peeler-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

Elevation: 7,000 to 9,500 feet (2,134 to 2,896 meters)
Mean annual precipitation: 17 to 20 inches (430 to 510 millimeters)
Mean annual air temperature: 41 to 43 degrees F. (5.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of subalpine fir, lodgepole pine, and Engelmann's

spruce. This map unit joins the Golden Soil Survey on north-facing mountain slopes.

Map Unit Composition

Grimstone and similar soils: 40 percent
Peeler and similar soils: 25 percent
Rock outcrop: 20 percent
Minor components: 15 percent

Component Descriptions

Grimstone soils

Landform: mountain slopes
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent
Surface fragments: about 2 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 3.0 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, Oregongrape, common juniper, kinnikinnick
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 2 inches; sandy loam
E—2 to 11 inches; gravelly loamy sand
E/B—11 to 16 inches; gravelly loamy sand
Bt—16 to 23 inches; gravelly sandy clay loam
BC—23 to 36 inches; gravelly sandy loam
Cr—36 to 40 inches;

Peeler soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: Colluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 15 to 30 percent
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 6.4 inches (moderate)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, Oregongrape, Ross' sedge, common juniper, kinnikinnick
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 4 inches; stony sandy loam
E—4 to 10 inches; gravelly loamy sand
E/B—10 to 15 inches; gravelly loamy sand
Bt1—15 to 29 inches; gravelly sandy loam
Bt2—29 to 35 inches; gravelly sandy clay loam
BCt—35 to 60 inches; gravelly sandy loam

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes and ridges
Position on landform: backslopes and shoulders
Parent material: igneous and metamorphic rock
Slope: 15 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Urban land
Composition: about 5 percent
Landform: mountain slopes, mountain slopes, alluvial fans
Position on landform: footslopes, toeslopes
Slope: 0 to 9 percent

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 15 to 30 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Tolvar and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes, toeslopes

Slope: 12 to 30 percent
Drainage class: well drained

Major Uses

Woodland, wildlife, recreation, and urban land

12—Herbman gravelly sandy loam, 3 to 9 percent slopes

Map Unit Setting

Elevation: 7,600 to 9,200 feet (2,316 to 2,804 meters)
Mean annual precipitation: 18 to 24 inches (460 to 610 millimeters)
Mean annual air temperature: 41 to 43 degrees F. (5.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists of scattered Rocky Mountain Douglas-fir and ponderosa pine.

Map Unit Composition

Herbman and similar soils: 70 percent
Minor components: 30 percent

Component Descriptions

Herbman soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 3 to 9 percent
Surface fragments: about 1 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.1 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PSME/ARUV-JUCO (Rocky Mountain Douglas/kinnikinnick-fir/common juniper)
Potential native vegetation: bluebunch wheatgrass, needlegrass, bluegrass, fescue, kinnikinnick, common juniper, pine dropseed, prairie sagewort, sedge, snowberry
Land capability subclass (nonirrigated): 6s

Typical Profile:
A—0 to 10 inches; gravelly sandy loam
AC—10 to 17 inches; very gravelly loamy sand
Cr—17 to 24 inches; weathered bedrock

Minor Components

Legault and similar soils
Composition: about 10 percent
Landform: mountain slopes
Position on landform: shoulders
Slope: 5 to 9 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Rock outcrop
Composition: about 10 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 3 to 9 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Rogert and similar soils
Composition: about 5 percent
Landform: ridges, mountain slopes
Position on landform: shoulders
Slope: 30 to 70 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Guanella and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 3 to 9 percent
Drainage class: well drained
Ecological site: Loamy Park

Major Uses

Woodland, homesites, recreation, and watershed

13—Herbman-Rock outcrop complex, 9 to 15 percent slopes

Map Unit Setting

Elevation: 7,600 to 9,200 feet (2,316 to 2,804 meters)
Mean annual precipitation: 18 to 24 inches (460 to 610 millimeters)
Mean annual air temperature: 41 to 45 degrees F. (5.0 to 7.0 degrees C.)
Frost-free period: 25 to 75 days

Note: The overstory vegetation consists of scattered Rocky Mountain Douglas-fir, ponderosa pine, and quaking aspen.

Map Unit Composition

Herbman and similar soils: 70 percent
Rock outcrop: 15 percent
Minor components: 15 percent

Component Descriptions

Herbman soils

Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 9 to 15 percent
Surface fragments: about 1 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.9 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PSME/ARUV-JUCO (Rocky Mountain Douglas/kinnikinnick-fir/common juniper)
Potential native vegetation: bluebunch wheatgrass, needlegrass, bluegrass, fescue, kinnikinnick, common juniper, pine dropseed, sedge, snowberry, prairie sagewort
Land capability subclass (nonirrigated): 6s

Typical Profile:
A—0 to 10 inches; gravelly sandy loam
AC—10 to 13 inches; very gravelly loamy sand
Cr—13 to 17 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: backslopes and shoulders
Parent material: igneous and metamorphic rock
Slope: 9 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Rogert and similar soils
Composition: about 5 percent
Landform: ridges, mountain slopes
Position on landform: shoulders
Slope: 30 to 70 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 9 to 15 percent, northwest to northeast aspects
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Guanella and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 9 to 15 percent
Drainage class: well drained
Ecological site: Loamy Park

Major Uses

Woodland, homesites, recreation, and watershed

14—Herbman-Rock outcrop complex, 15 to 30 percent slopes

Map Unit Setting

Elevation: 7,600 to 9,200 feet (2,316 to 2,804 meters)
Mean annual precipitation: 18 to 24 inches (460 to 610 millimeters)
Mean annual air temperature: 41 to 45 degrees F. (5.0 to 7.0 degrees C.)
Frost-free period: 25 to 75 days

Note: The overstory vegetation consists of scattered Rocky Mountain Douglas-fir, quaking aspen, and ponderosa pine.

Map Unit Composition

Herbman and similar soils: 70 percent
Rock outcrop: 15 percent
Minor components: 15 percent

Component Descriptions

Herbman soils

Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent
Surface fragments: about 1 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.9 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PSME/ARUV-JUCO (Rocky Mountain Douglas/kinnikinnick-fir/common juniper)
Potential native vegetation: bluebunch wheatgrass, needlegrass, bluegrass, fescue, kinnikinnick, common juniper, pine dropseed, sedge, snowberry, prairie sagewort
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 10 inches; gravelly sandy loam
AC—10 to 13 inches; very gravelly loamy sand
Cr—13 to 17 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 15 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Rogert and similar soils
Composition: about 5 percent
Landform: ridges, mountain slopes
Position on landform: shoulders
Slope: 30 to 70 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 15 to 30 percent, northwest to northeast aspects
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Guanella and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Loamy Park

Major Uses

Woodland, homesites, recreation, and watershed

15—Hiwan-Rock outcrop-Bendemeere complex, 30 to 70 percent slopes

Map Unit Setting

Elevation: 7,200 to 8,600 feet (2,195 to 2,621 meters)
Mean annual precipitation: 17 to 25 inches (430 to 640 millimeters)
Mean annual air temperature: 37 to 43 degrees F. (3.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine and limber pine on the Hiwan soil and Rocky Mountain Douglas-fir, lodgepole pine, and scattered ponderosa pine on the Bendemeere soil.

Map Unit Composition

Hiwan and similar soils: 40 percent
Rock outcrop: 30 percent
Bendemeere and similar soils: 20 percent
Minor components: 10 percent

Component Descriptions

Hiwan soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 4 percent
Depth to restrictive feature: 7 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.4 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, Woods' rose, quaking aspen, bluegrass, mallow ninebark, mountain snowberry, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; extremely cobbly sandy loam
C—3 to 13 inches; extremely cobbly loamy sand
R—13 to 17 inches; unweathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 50 to 70 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Bendemeere soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 45 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PSMEG/JUCO (Rocky Mountain Douglas-fir, common juniper)
Potential native vegetation: common juniper, Woods' rose, kinnikinnick, quaking aspen, mountain snowberry, mallow ninebark, lupine
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; very gravelly loamy sand
E—3 to 10 inches; gravelly coarse sandy loam
E and Bt1—10 to 21 inches; very cobbly coarse sandy loam
E and Bt2—21 to 30 inches; very gravelly loamy coarse sand
E and Bt1—30 to 42 inches; very gravelly loamy sand
E and Bt2—42 to 50 inches; gravelly loamy sand
BC—50 to 62 inches; very gravelly coarse sandy loam

Minor Components

Ohman and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained

Tahana and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: backslopes
Slope: 30 to 70 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained

Major Uses

Woodland, wildlife habitat, homesites, and recreation

16—Ivywild-Legault-Rock outcrop complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 8,000 to 11,400 feet (2,438 to 3,475 meters)
Mean annual precipitation: 17 to 27 inches (430 to 690 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine and Rocky Mountain Douglas-fir with lesser amounts of Engelmann's spruce and subalpine fir.

Map Unit Composition

Ivywild and similar soils: 40 percent
Legault and similar soils: 35 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Ivywild soils

Landform: mountain slopes
Position on landform: backslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.9 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PICO/VASC (lodgepole pine, grouse whortleberry)
Potential native vegetation: whortleberry, dwarf blueberry, common juniper, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 8 inches; very gravelly loamy sand
B/E—8 to 13 inches; very gravelly loamy sand
Bw—13 to 24 inches; extremely gravelly coarse sandy loam
Cr—24 to 31 inches; weathered bedrock

Legault soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 13 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, kinnikinnick, lupine, arnica
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; very gravelly sandy loam
AC—5 to 18 inches; very gravelly loamy sand
Cr—18 to 22 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 45 to 100 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Redfeather and similar soils
Composition: about 10 percent
Landform: mountain slopes, ridges
Position on landform: shoulders
Slope: 30 to 60 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: ABLA-PIEN/VAMY (subalpine fir, Engelmann's spruce, Rocky Mountain whortleberry)

Major Uses

Homesites, wildlife habitat, woodland, and recreation

17—Ivywild-Mammoth-Legault complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 8,300 to 11,400 feet (2,530 to 3,475 meters)
Mean annual precipitation: 17 to 24 inches (430 to 610 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of subalpine fir, Engelmann's spruce, and lodgepole pine.

Map Unit Composition

Ivywild and similar soils: 40 percent
Mammoth and similar soils: 25 percent
Legault and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Ivywild soils

Landform: mountain slopes
Position on landform: backslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.9 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, common juniper, dwarf blueberry, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 8 inches; very gravelly loamy sand
B/E—8 to 13 inches; very gravelly loamy sand
Bw—13 to 24 inches; extremely gravelly coarse sandy loam
Cr—24 to 31 inches; weathered bedrock

Mammoth soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 4 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.3 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, common juniper, dwarf blueberry, elk sedge, lupine, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 10 inches; very gravelly sandy loam
E and Bt1—10 to 16 inches; gravelly loam
E and Bt2—16 to 22 inches; very gravelly loamy sand
E and Bt3—22 to 32 inches; very gravelly sandy loam
E and Bt4—32 to 59 inches; very gravelly sandy loam
C—59 to 67 inches; stony loamy coarse sand

Legault soils

Landform: mountain slopes, ridges

Position on landform: backslopes, shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 0 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, whortleberry, cliffbush, russet buffaloberry, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; very gravelly loamy sand
AC—6 to 19 inches; very gravelly sand
Cr—19 to 23 inches; weathered bedrock

Minor Components

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 30 to 60 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Redfeather and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders
Slope: 30 to 60 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained

Bendemeere and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 60 percent
Drainage class: well drained

Major Uses

Homesites, wildlife habitat, woodland, and recreation

18—Kataka-Resort-Rock outcrop complex, 30 to 70 percent slopes

Map Unit Setting

Elevation: 7,200 to 8,750 feet (2,195 to 2,667 meters)
Mean annual precipitation: 16 to 20 inches (410 to 510 millimeters)
Mean annual air temperature: 41 to 46 degrees F. (5.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists mainly of scattered ponderosa pine and Rocky Mountain juniper. This map unit occurs throughout the survey area on south- and west-facing mountain slopes and ridges.

Map Unit Composition

Kataka and similar soils: 40 percent
Resort and similar soils: 25 percent
Rock outcrop: 15 percent
Minor components: 20 percent

Component Descriptions

Kataka soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 1 percent , about 5 percent cobbles
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 2.3 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Brushy Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, mountain mahogany, western wheatgrass, western snowberry, common chokecherry, Woods' rose
Land capability subclass (nonirrigated): 7e

Typical Profile:
A1—0 to 5 inches; very gravelly loam
A2—5 to 10 inches; very gravelly sandy loam
Bt1—10 to 18 inches; very cobbly clay loam
Bt2—18 to 31 inches; extremely stony clay loam
Cr—31 to 38 inches; weathered bedrock

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 4 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.4 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Stony Loam
Potential native vegetation: Arizona fescue, mountain muhly, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 6 inches; very stony sandy loam
A2—6 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: igneous and metamorphic rock
Slope: 50 to 70 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Lininger and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Arents and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Trag and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Mountain Loam

Major Uses

Wildlife habitat and watershed

19—Kittredge-Guanella complex, 3 to 9 percent slopes

Map Unit Setting

Elevation: 7,600 to 9,000 feet (2,316 to 2,743 meters)
Mean annual precipitation: 18 to 24 inches (460 to 610 millimeters)
Mean annual air temperature: 37 to 43 degrees F. (3.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days

Map Unit Composition

Kittredge and similar soils: 60 percent
Guanella and similar soils: 25 percent
Minor components: 15 percent

Component Descriptions

Kittredge soils

Landform: alluvial fans
Parent material: micaceous alluvium derived from igneous and metamorphic rock
Slope: 3 to 9 percent
Drainage class: well drained

Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 7.9 inches (moderate)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 6c

Typical Profile:
A—0 to 10 inches; sandy loam
Bt1—10 to 13 inches; sandy clay loam
Bt2—13 to 22 inches; clay loam
Bt3—22 to 28 inches; sandy clay loam
Bt4—28 to 38 inches; gravelly sandy clay loam
BC—38 to 53 inches; gravelly clay loam
C—53 to 72 inches; loamy sand

Guanella soils

Landform: mountain slopes
Position on landform: toeslopes
Parent material: micaceous colluvium and slope alluvium derived from igneous and metamorphic rock
Slope: 3 to 9 percent
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 5.5 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Ecological site: Loamy Park
Potential native vegetation: Parry's danthonia, Arizona fescue, Letterman's needlegrass, mountain muhly, needleandthread, slender wheatgrass, muttongrass, elk sedge
Land capability subclass (nonirrigated): 6c

Typical Profile:
A1—0 to 6 inches; gravelly loam
A2—6 to 18 inches; gravelly loam
A3—18 to 29 inches; loam
C1—29 to 48 inches; gravelly loamy sand
C2—48 to 62 inches; cobbly loamy sand

Minor Components

Cumulic Cryaquolls and similar soils
Composition: about 10 percent
Landform: drainageways
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: occasional
Ecological site: Mountain Meadow

Rogert and similar soils
Composition: about 5 percent
Landform: ridges, mountain slopes
Position on landform: shoulders
Slope: 30 to 70 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Major Uses

Recreation, wildlife habitat, and homesites

20—Kittredge-Guanella complex, 9 to 30 percent slopes

Map Unit Setting

Elevation: 7,600 to 9,000 feet (2,316 to 2,743 meters)
Mean annual precipitation: 18 to 24 inches (460 to 610 millimeters)
Mean annual air temperature: 37 to 43 degrees F. (3.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days

Map Unit Composition

Kittredge and similar soils: 45 percent
Guanella and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Kittredge soils

Landform: alluvial fans, mountain slopes
Position on landform: toeslopes
Parent material: micaceous alluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 9 to 30 percent
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 7.9 inches (moderate)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western

wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 6e

Typical Profile:
A—0 to 10 inches; sandy loam
Bt1—10 to 13 inches; sandy clay loam
Bt2—13 to 22 inches; clay loam
Bt3—22 to 28 inches; sandy clay loam
Bt4—28 to 38 inches; gravelly sandy clay loam
BC—38 to 53 inches; gravelly clay loam
C—53 to 72 inches; loamy sand

Guanella soils

Landform: mountain slopes
Position on landform: footslopes, toeslopes
Parent material: micaceous colluvium and slope alluvium derived from igneous and metamorphic rock
Slope: 9 to 30 percent
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 5.4 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Loamy Park
Potential native vegetation: Parry's danthonia, Arizona fescue, Letterman's needlegrass, mountain muhly, needleandthread, slender wheatgrass, muttongrass, elk sedge
Land capability subclass (nonirrigated): 6e

Typical Profile:
A1—0 to 6 inches; gravelly loam
A2—6 to 18 inches; gravelly loam
A3—18 to 29 inches; loam
C1—29 to 48 inches; gravelly loamy sand
C2—48 to 62 inches; cobbly loamy sand

Minor Components

Cumulic Cryaquolls and similar soils
Composition: about 10 percent
Landform: drainageways
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: occasional
Ecological site: Mountain Meadow

Rogert and similar soils
Composition: about 5 percent
Landform: ridges, mountain slopes
Position on landform: shoulders
Slope: 30 to 70 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Major Uses

Recreation, wildlife habitat, and homesites

21—Legault very gravelly sandy loam, 5 to 15 percent slopes

Map Unit Setting

Elevation: 8,000 to 9,000 feet (2,438 to 2,743 meters)
Mean annual precipitation: 19 to 24 inches (480 to 610 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine and Rocky Mountain Douglas-fir.

Map Unit Composition

Legault and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Legault soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 5 to 15 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, cliffbush, whortleberry, elk sedge, kinnikinnick, spike fescue
Land capability subclass (nonirrigated): 6s

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; very gravelly sandy loam

AC—5 to 18 inches; very gravelly loamy sand
Cr—18 to 22 inches; weathered bedrock

Minor Components

Rock outcrop
Composition: about 15 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 5 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Tahana and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: backslopes
Slope: 5 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained

Major Uses

Recreation, wildlife habitat, and homesites

22—Legault very gravelly sandy loam, 15 to 30 percent slopes

Map Unit Setting

Elevation: 8,000 to 9,000 feet (2,438 to 2,743 meters)
Mean annual precipitation: 18 to 21 inches (460 to 530 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine and Rocky Mountain Douglas-fir.

Map Unit Composition

Legault and similar soils: 75 percent
Minor components: 25 percent

Component Descriptions

Legault soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent
Surface fragments: about 6 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, cliffbush, whortleberry, elk sedge, kinnikinnick, spike fescue
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; very gravelly sandy loam
AC—5 to 18 inches; very gravelly loamy sand
Cr—18 to 22 inches; weathered bedrock

Minor Components

Ivywild and similar soils
Composition: about 10 percent
Landform: mountain slopes
Position on landform: backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Ecological site: PICO/VAMY (lodgepole pine, Rocky Mountain whortleberry)

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 15 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Arents and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Tahana and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: backslopes
Slope: 15 to 30 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained

Major Uses

Recreation, watershed, and wildlife habitat

23—Legault-Rock outcrop complex, 30 to 80 percent slopes

Map Unit Setting

Elevation: 7,000 to 10,000 feet (2,134 to 3,048 meters)
Mean annual precipitation: 19 to 24 inches (480 to 610 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, subalpine fir, and scattered Engelmann's spruce.

Map Unit Composition

Legault and similar soils: 70 percent
Rock outcrop: 20 percent
Minor components: 10 percent

Component Descriptions

Legault soils

Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 80 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, cliffbush, whortleberry, elk sedge, kinnikinnick, spike fescue
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; very gravelly loamy sand
AC—6 to 19 inches; very gravelly sand
Cr—19 to 23 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes and ridges
Position on landform: backslopes and shoulders
Parent material: igneous and metamorphic rock
Slope: 30 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Arents and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Tahana and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: backslopes
Slope: 30 to 70 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained

Major Uses

Recreation, watershed, and wildlife habitat

24—Lininger-Breece gravelly sandy loams, 3 to 12 percent slopes

Map Unit Setting

Elevation: 7,800 to 8,500 feet (2,377 to 2,591 meters)
Mean annual precipitation: 16 to 20 inches (410 to 510 millimeters)
Mean annual air temperature: 41 to 45 degrees F. (5.0 to 7.0 degrees C.)
Frost-free period: 70 to 100 days

Map Unit Composition

Lininger and similar soils: 45 percent

Breece and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Lininger soils

Landform: ridges
Parent material: micaceous colluvium and/or slope alluvium over residuum weathered from igneous and metamorphic rock
Slope: 3 to 12 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 5.3 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 3 inches; gravelly sandy loam
A2—3 to 9 inches; gravelly sandy loam
B/A—9 to 15 inches; sandy clay loam
Bt1—15 to 22 inches; sandy clay loam
Bt2—22 to 31 inches; sandy clay loam
Bt3—31 to 39 inches; sandy clay loam
Cr—39 to 43 inches; weathered bedrock

Breece soils

Landform: drainageways, alluvial fans
Parent material: alluvium and slope alluvium derived from igneous and metamorphic rock
Slope: 3 to 12 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 5.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Ecological site: Loamy Park
Potential native vegetation: Parry's danthonia, Arizona fescue, Letterman's needlegrass, mountain muhly, needleandthread, slender wheatgrass, muttongrass, elk sedge
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 7 inches; gravelly sandy loam
A2—7 to 20 inches; gravelly sandy loam
C1—20 to 42 inches; gravelly coarse sandy loam
C2—42 to 72 inches; gravelly sandy loam

Minor Components

Resort and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders
Slope: 3 to 12 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Ecological site: Stony Loam

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 3 to 12 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Cathedral and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 3 to 12 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Major Uses

Watershed, wildlife habitat, homesites, and recreation

25—Lininger-Resort complex, 5 to 15 percent slopes

Map Unit Setting

Elevation: 7,400 to 8,500 feet (2,256 to 2,591 meters)
Mean annual precipitation: 16 to 20 inches (410 to 510 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine, Rocky Mountain juniper, Rocky

Mountain Douglas-fir, and quaking aspen on the Resort soil.

Map Unit Composition

Lininger and similar soils: 45 percent
Resort and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Lininger soils

Landform: ridges
Parent material: micaceous colluvium and/or slope alluvium over residuum weathered from igneous and metamorphic rock
Slope: 5 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 5.3 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 3 inches; gravelly sandy loam
A2—3 to 9 inches; gravelly sandy loam
B/A—9 to 15 inches; sandy clay loam
Bt1—15 to 22 inches; sandy clay loam
Bt2—22 to 31 inches; sandy clay loam
Bt3—31 to 39 inches; sandy clay loam
Cr—39 to 43 inches; weathered bedrock

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 5 to 15 percent
Surface fragments: about 1 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.4 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Stony Loam
Potential native vegetation: Arizona fescue, mountain muhly, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 6s

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 6 inches; very stony sandy loam
A2—6 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Minor Components

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 5 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Cathedral and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 5 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Major Uses

Wildlife habitat and rangeland

26—Lininger-Trag gravelly sandy loams, 15 to 30 percent slopes

Map Unit Setting

Elevation: 7,400 to 8,500 feet (2,256 to 2,591 meters)
Mean annual precipitation: 16 to 20 inches (410 to 510 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days

Map Unit Composition

Lininger and similar soils: 50 percent
Trag and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Lininger soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium and/or slope alluvium over residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 5.3 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 6e

Typical Profile:
A1—0 to 3 inches; gravelly sandy loam
A2—3 to 9 inches; gravelly sandy loam
B/A—9 to 15 inches; sandy clay loam
Bt1—15 to 22 inches; sandy clay loam
Bt2—22 to 31 inches; sandy clay loam
Bt3—31 to 39 inches; sandy clay loam
Cr—39 to 43 inches; weathered bedrock

Trag soils

Landform: mountain slopes
Position on landform: toeslopes
Parent material: alluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 15 to 30 percent
Surface fragments: about 1 percent
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 7.5 inches (moderate)
Shrink-swell potential: about 4.5 percent (moderate)
Runoff class: high
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 6e

Typical Profile:
A1—0 to 4 inches; gravelly sandy loam
A2—4 to 14 inches; gravelly sandy clay loam
Bt1—14 to 21 inches; cobbly sandy clay loam
Bt2—21 to 27 inches; cobbly sandy clay loam
Bt3—27 to 45 inches; cobbly clay loam
Bt4—45 to 60 inches; gravelly sandy clay loam

Minor Components

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 15 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Resort and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders
Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Ecological site: Stony Loam

Major Uses

Wildlife habitat and rangeland

27—Lone Rock-Breece gravelly sandy loams, 2 to 9 percent slopes

Map Unit Setting

Elevation: 7,700 to 8,500 feet (2,347 to 2,591 meters)
Mean annual precipitation: 16 to 20 inches (410 to 510 millimeters)
Mean annual air temperature: 41 to 45 degrees F. (5.0 to 7.0 degrees C.)
Frost-free period: 70 to 100 days

Map Unit Composition

Lone Rock and similar soils: 55 percent
Breece and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Lone Rock soils

Landform: alluvial fans, terraces
Parent material: alluvium derived from igneous and metamorphic rock
Slope: 2 to 9 percent
Surface fragments: about 2 percent cobbles
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 2.4 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 4s

Typical Profile:
A—0 to 9 inches; gravelly sandy loam
AC—9 to 13 inches; very gravelly loamy sand
C1—13 to 28 inches; very gravelly loamy sand
C2—28 to 60 inches; extremely gravelly sand

Breece soils

Landform: drainageways, alluvial fans
Parent material: alluvium and slope alluvium derived from igneous and metamorphic rock
Slope: 2 to 9 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 5.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Ecological site: Loamy Park
Potential native vegetation: Parry's danthonia, Arizona fescue, Letterman's needlegrass, mountain muhly, needleandthread, slender wheatgrass, muttongrass, elk sedge
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 7 inches; gravelly sandy loam
A2—7 to 20 inches; gravelly sandy loam
C1—20 to 42 inches; gravelly coarse sandy loam
C2—42 to 72 inches; gravelly sandy loam

Minor Components

Arents and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Cumulic Cryaquolls and similar soils
Composition: about 5 percent
Landform: drainageways
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: occasional
Ecological site: Mountain Meadow

Major Uses

Homesites, recreation, and rangeland

28—Lone Rock-Breece gravelly sandy loams, 9 to 15 percent slopes

Map Unit Setting

Elevation: 7,700 to 8,500 feet (2,347 to 2,591 meters)
Mean annual precipitation: 17 to 20 inches (430 to 510 millimeters)
Mean annual air temperature: 41 to 45 degrees F. (5.0 to 7.0 degrees C.)
Frost-free period: 70 to 100 days

Map Unit Composition

Lone Rock and similar soils: 55 percent

Breece and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Lone Rock soils

Landform: alluvial fans, terraces
Parent material: alluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 9 to 15 percent
Surface fragments: about 4 percent
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 2.4 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 4e

Typical Profile:
A—0 to 9 inches; gravelly sandy loam
AC—9 to 13 inches; very gravelly loamy sand
C1—13 to 28 inches; very gravelly loamy sand
C2—28 to 60 inches; extremely gravelly sand

Breece soils

Landform: drainageways, alluvial fans
Parent material: alluvium and slope alluvium derived from igneous and metamorphic rock
Slope: 3 to 15 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 5.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Ecological site: Loamy Park
Potential native vegetation: Parry's danthonia, Arizona fescue, Letterman's needlegrass, mountain muhly, needleandthread, slender wheatgrass, muttongrass, elk sedge
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 7 inches; gravelly sandy loam
A2—7 to 20 inches; gravelly sandy loam
C1—20 to 42 inches; gravelly coarse sandy loam
C2—42 to 72 inches; gravelly sandy loam

Minor Components

Arents and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 100 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Major Uses

Homesites and recreation

30—Mammoth-Ohman-Bendemeere complex, 15 to 30 percent slopes

Map Unit Setting

Elevation: 7,800 to 10,500 feet (2,377 to 3,200 meters)
Mean annual precipitation: 17 to 24 inches (430 to 610 millimeters)
Mean annual air temperature: 37 to 43 degrees F. (3.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, subalpine fir, Engelmann's spruce, and scattered Rocky Mountain Douglas-fir.

Map Unit Composition

Mammoth and similar soils: 40 percent
Ohman and similar soils: 35 percent
Bendemeere and similar soils: 20 percent
Minor components: 5 percent

Component Descriptions

Mammoth soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 15 to 30 percent
Drainage class: well drained

Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.3 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: whortleberry, common juniper, dwarf blueberry, elk sedge, russet buffaloberry, lupine
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 10 inches; very gravelly sandy loam
E and Bt1—10 to 16 inches; gravelly loam
E and Bt2—16 to 22 inches; very gravelly loamy sand
E and Bt3—22 to 32 inches; very gravelly sandy loam
E and Bt4—32 to 59 inches; very gravelly sandy loam
C—59 to 67 inches; stony loamy coarse sand

Ohman soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium and/or slope alluvium over residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent
Surface fragments: about 0 percent stones
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.7 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: whortleberry, dwarf blueberry, common juniper, elk sedge, russet buffaloberry, lupine
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very stony sandy loam
E—5 to 13 inches; very gravelly sandy loam
E and Bt1—13 to 21 inches; very gravelly sandy loam
E and Bt2—21 to 35 inches; extremely gravelly sandy loam
Cr—35 to 39 inches; weathered bedrock

Bendemeere soils

Landform: mountain slopes
Position on landform: toeslopes, footslopes
Parent material: micaceous colluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 15 to 30 percent
Surface fragments: about 1 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VACE (subalpine fir, Engelmann's spruce, dwarf blueberry)
Potential native vegetation: dwarf blueberry, russet buffaloberry, common juniper, elk sedge, lupine
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; very gravelly sandy loam
E—3 to 10 inches; gravelly coarse sandy loam
E and Bt1—10 to 21 inches; very cobbly coarse sandy loam
E and Bt2—21 to 30 inches; very gravelly loamy coarse sand
E and Bt1—30 to 42 inches; very gravelly loamy sand
E and Bt2—42 to 50 inches; gravelly loamy sand
BC—50 to 62 inches; very gravelly coarse sandy loam

Minor Components

Legault and similar soils
Composition: about 3 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Ivywild and similar soils
Composition: about 1 percent
Landform: mountain slopes
Position on landform: backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained

Rock outcrop
Composition: about 1 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Major Uses

Homesites, woodland, and wildlife habitat

31—Mammoth-Ohman-Bendemeere complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 7,800 to 10,500 feet (2,377 to 3,200 meters)
Mean annual precipitation: 17 to 24 inches (430 to 610 millimeters)
Mean annual air temperature: 37 to 43 degrees F. (3.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, Engelmann's spruce, subalpine fir, and scattered Rocky Mountain Douglas-fir.

Map Unit Composition

Mammoth and similar soils: 40 percent
Ohman and similar soils: 35 percent
Bendemeere and similar soils: 15 percent
Minor components: 10 percent

Component Descriptions

Mammoth soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 1 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.3 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PICO/SHCA (lodgepole pine, russet buffaloberry)
Potential native vegetation: russet buffaloberry, dwarf blueberry, common juniper, lupine, elk sedge, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 10 inches; very gravelly sandy loam
E and Bt1—10 to 16 inches; gravelly loam
E and Bt2—16 to 22 inches; very gravelly loamy sand
E and Bt3—22 to 32 inches; very gravelly sandy loam
E and Bt4—32 to 59 inches; very gravelly sandy loam
C—59 to 67 inches; stony loamy coarse sand

Ohman soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 5 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.7 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, russet buffaloberry, dwarf blueberry, common juniper, lupine, elk sedge, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very stony sandy loam
E—5 to 13 inches; very gravelly sandy loam
E and Bt1—13 to 21 inches; very gravelly sandy loam

E and Bt2—21 to 35 inches; extremely gravelly sandy loam
Cr—35 to 39 inches; weathered bedrock

Bendemeere soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 5 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PICO/SHCA (lodgepole pine, russet buffaloberry)
Potential native vegetation: dwarf blueberry, russet buffaloberry, common juniper, mallow ninebark, elk sedge, Woods' rose, lupine, quaking aspen, heartleaf arnica
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 3 inches; very cobbly sandy loam
E—3 to 10 inches; gravelly coarse sandy loam
E and Bt1—10 to 21 inches; very cobbly coarse sandy loam
E and Bt2—21 to 30 inches; very gravelly loamy coarse sand
E and Bt1—30 to 42 inches; very gravelly loamy sand
E and Bt2—42 to 50 inches; gravelly loamy sand
BC—50 to 62 inches; very gravelly coarse sandy loam

Minor Components

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 30 to 60 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Rock outcrop
Composition: about 3 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 60 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Arents and similar soils
Composition: about 2 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Major Uses

Homesites, woodland, and wildlife habitat

32—Mammoth-Ohman-Rock outcrop complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 8,100 to 10,000 feet (2,469 to 3,048 meters)
Mean annual precipitation: 20 to 24 inches (510 to 610 millimeters)
Mean annual air temperature: 36 to 41 degrees F. (2.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine and subalpine fir.

Map Unit Composition

Mammoth and similar soils: 50 percent
Ohman and similar soils: 25 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Mammoth soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent

Surface fragments: about 0 percent boulders
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.3 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, grouse whortleberry, whortleberry, russet buffaloberry, elk sedge, kinnikinnick, lupine
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 10 inches; very gravelly sandy loam
E and Bt1—10 to 16 inches; gravelly loam
E and Bt2—16 to 22 inches; very gravelly loamy sand
E and Bt3—22 to 32 inches; very gravelly sandy loam
E and Bt4—32 to 59 inches; very gravelly sandy loam
C—59 to 67 inches; stony loamy coarse sand

Ohman soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 18 percent boulders, about 5 percent stones
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.7 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, common juniper, heartleaf arnica, russet buffaloberry, lupine, elk sedge, kinnikinnick
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very stony sandy loam
E—5 to 13 inches; very gravelly sandy loam
E and Bt1—13 to 21 inches; very gravelly sandy loam
E and Bt2—21 to 35 inches; extremely gravelly sandy loam
Cr—35 to 39 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 30 to 150 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Legault and similar soils
Composition: about 4 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 30 to 60 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Hiwan and similar soils
Composition: about 4 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 60 percent
Depth to restrictive feature: 7 to 20 inches to bedrock (lithic)
Drainage class: well drained

Arents and similar soils
Composition: about 2 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Major Uses

Homesites, recreation, wildlife habitat, woodland, and watershed

33—Ohman-Ivywild very gravelly sandy loams, 30 to 60 percent slopes

Map Unit Setting

Elevation: 7,600 to 9,900 feet (2,316 to 3,018 meters)
Mean annual precipitation: 17 to 23 inches (430 to 580 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of Engelmann's spruce, subalpine fir, and lodgepole pine. The Ivywild soil occurs on north-facing concave mountain slopes.

Map Unit Composition

Ohman and similar soils: 45 percent
Ivywild and similar soils: 35 percent
Minor components: 20 percent

Component Descriptions

Ohman soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 15 percent stones
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.7 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/ARCO9 (subalpine fir, Engelmann's spruce, heartleaf arnica)
Potential native vegetation: dwarf blueberry, common juniper, elk sedge, grouse whortleberry, lupine
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very gravelly sandy loam
E—5 to 13 inches; very gravelly sandy loam
E and Bt1—13 to 21 inches; very gravelly sandy loam
E and Bt2—21 to 35 inches; extremely gravelly sandy loam
Cr—35 to 39 inches; weathered bedrock

Ivywild soils

Landform: mountain slopes
Position on landform: backslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent, north to northeast aspects
Surface fragments: about 2 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.3 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: dwarf blueberry, grouse whortleberry, common juniper, lupine
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
E—1 inch to 3 inches; very gravelly sandy loam
B/E—3 to 11 inches; very gravelly sandy loam
Bw—11 to 23 inches; very gravelly sandy loam
Cr—23 to 27 inches; weathered bedrock

Minor Components

Tolvar and similar soils
Composition: about 10 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 12 to 30 percent
Drainage class: well drained
Ecological site: ABLA-PIEN/VAMY (subalpine fir, Engelmann's spruce, Rocky Mountain whortleberry)

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 60 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Grimstone and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes

Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained

Major Uses

Wildlife habitat, woodland, homesites, and watershed

34—Ohman-Legault very gravelly sandy loams, 15 to 30 percent slopes

Map Unit Setting

Elevation: 7,800 to 9,800 feet (2,377 to 2,987 meters)
Mean annual precipitation: 19 to 24 inches (480 to 610 millimeters)
Mean annual air temperature: 37 to 43 degrees F. (3.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, subalpine fir, and scattered Engelmann's spruce and Rocky Mountain Douglas-fir.

Map Unit Composition

Ohman and similar soils: 55 percent
Legault and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Ohman soils

Landform: ridges, mountain slopes
Position on landform: backslopes
Parent material: micaceous colluvium and/or slope alluvium over residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent, northwest to northeast aspects
Surface fragments: about 2 percent medium and coarse gravel
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.7 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VACE (subalpine fir, Engelmann's spruce, dwarf blueberry)
Potential native vegetation: dwarf blueberry, elk sedge, common juniper, lupine
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very gravelly sandy loam
E—5 to 13 inches; very gravelly sandy loam
E and Bt1—13 to 21 inches; very gravelly sandy loam
E and Bt2—21 to 35 inches; extremely gravelly sandy loam
Cr—35 to 39 inches; weathered bedrock

Legault soils

Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent
Surface fragments: about 2 percent medium and coarse gravel, about 2 percent fine gravel
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/VASC (lodgepole pine, grouse whortleberry)
Potential native vegetation: dwarf blueberry, grouse whortleberry, elk sedge, common juniper, Oregongrape, lupine
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; very gravelly sandy loam
AC—5 to 18 inches; very gravelly loamy sand
Cr—18 to 22 inches; weathered bedrock

Minor Components

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 15 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Tahana and similar soils
Composition: about 5 percent
Landform: mountain slopes

Position on landform: backslopes
Slope: 15 to 30 percent, southwest to southeast aspects
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained

Major Uses

Recreation, woodland, watershed, and homesites

35—Ohman-Legault very gravelly sandy loams, 30 to 60 percent slopes

Map Unit Setting

Elevation: 7,800 to 9,800 feet (2,377 to 2,987 meters)
Mean annual precipitation: 19 to 23 inches (480 to 580 millimeters)
Mean annual air temperature: 37 to 41 degrees F. (3.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, subalpine fir, Engelmann's spruce, and scattered Rocky Mountain Douglas-fir. The Ohman soil occurs on north-facing mountain slopes and ridges.

Map Unit Composition

Ohman and similar soils: 50 percent
Legault and similar soils: 45 percent
Minor components: 5 percent

Component Descriptions

Ohman soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent, northwest to northeast aspects
Surface fragments: about 3 percent medium and coarse gravel
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.7 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VACE (subalpine fir, Engelmann's spruce, dwarf blueberry)
Potential native vegetation: dwarf blueberry, elk sedge, common juniper, lupine
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very gravelly sandy loam
E—5 to 13 inches; very gravelly sandy loam
E and Bt1—13 to 21 inches; very gravelly sandy loam
E and Bt2—21 to 35 inches; extremely gravelly sandy loam
Cr—35 to 39 inches; weathered bedrock

Legault soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 2 percent medium and coarse gravel, about 2 percent fine gravel
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/VASC (lodgepole pine, grouse whortleberry)
Potential native vegetation: grouse whortleberry, common juniper, lupine, Oregongrape, elk sedge
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 5 inches; very gravelly sandy loam
AC—5 to 18 inches; very gravelly loamy sand
Cr—18 to 22 inches; weathered bedrock

Minor Components

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 60 percent

Depth to restrictive feature: 0 inches to bedrock (lithic)

Major Uses

Recreation, woodland, watershed, and homesites

36—Pettingell-Rogert-Rock outcrop complex, 30 to 80 percent slopes

Map Unit Setting

Elevation: 7,900 to 9,000 feet (2,408 to 2,743 meters)
Mean annual precipitation: 18 to 22 inches (460 to 560 millimeters)
Mean annual air temperature: 39 to 45 degrees F. (4.0 to 7.0 degrees C.)
Frost-free period: 25 to 90 days
Note: The overstory vegetation consists of scattered Rocky Mountain Douglas-fir and lodgepole pine.

Map Unit Composition

Pettingell and similar soils: 50 percent
Rogert and similar soils: 20 percent
Rock outcrop: 15 percent
Minor components: 15 percent

Component Descriptions

Pettingell soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 80 percent
Surface fragments: about 1 percent , about 10 percent medium and coarse gravel, about 3 percent cobbles
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 3.4 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
A1—0 to 4 inches; gravelly sandy loam
A2—4 to 11 inches; very gravelly loam
Bw—11 to 18 inches; very gravelly sandy loam
BC—18 to 37 inches; very cobbly coarse sandy loam
C—37 to 60 inches; extremely stony sandy loam

Rogert soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 30 to 80 percent
Surface fragments: about 4 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.1 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 10 inches; very stony sandy loam
C—10 to 18 inches; very gravelly sandy loam
R—18 to 22 inches; unweathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 30 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Guanella and similar soils
Composition: about 10 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 3 to 30 percent
Drainage class: well drained
Ecological site: Loamy Park

Raleigh and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders
Slope: 30 to 70 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Ecological site: Shallow Loam

Major Uses

Watershed, wildlife habitat, and recreation

37—Raleigh very gravelly sandy loam, 9 to 15 percent slopes

Map Unit Setting

Elevation: 7,700 to 8,500 feet (2,347 to 2,591 meters)
Mean annual precipitation: 17 to 22 inches (430 to 560 millimeters)
Mean annual air temperature: 41 to 43 degrees F. (5.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days

Map Unit Composition

Raleigh and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Raleigh soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 9 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Shallow Loam
Potential native vegetation: mountain mahogany, Arizona fescue, prairie sagewort, common juniper, pussytoes
Land capability subclass (nonirrigated): 6s

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 6 inches; very gravelly sandy loam
Bw—6 to 15 inches; very gravelly sandy loam
Cr—15 to 19 inches; weathered bedrock

Minor Components

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 9 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Tolland and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 9 to 15 percent
Drainage class: well drained

Kittredge and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 3 to 15 percent
Drainage class: well drained
Ecological site: Mountain Loam

Major Uses

Recreation, watershed, and wildlife habitat

38—Raleigh very gravelly sandy loam, 15 to 30 percent slopes

Map Unit Setting

Elevation: 8,000 to 8,700 feet (2,438 to 2,652 meters)
Mean annual precipitation: 17 to 22 inches (430 to 560 millimeters)
Mean annual air temperature: 41 to 43 degrees F. (5.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days

Map Unit Composition

Raleigh and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Raleigh soils

Landform: ridges, mountain slopes
Position on landform: shoulders

Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Shallow Loam
Potential native vegetation: mountain mahogany, Arizona fescue, prairie sagewort, common juniper, pussytoes
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 6 inches; very gravelly sandy loam
Bw—6 to 15 inches; very gravelly sandy loam
Cr—15 to 19 inches; weathered bedrock

Minor Components

Kittredge and similar soils
Composition: about 10 percent
Landform: alluvial fans
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Mountain Loam

Guanella and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Loamy Park

Major Uses

Recreation, watershed, and wildlife habitat

39—Raleigh very gravelly sandy loam, 30 to 50 percent slopes

Map Unit Setting

Elevation: 8,000 to 10,000 feet (2,438 to 3,048 meters)
Mean annual precipitation: 17 to 22 inches (430 to 560 millimeters)
Mean annual air temperature: 41 to 43 degrees F. (5.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days

Map Unit Composition

Raleigh and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Raleigh soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 30 to 50 percent
Surface fragments: about 7 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Shallow Loam
Potential native vegetation: mountain mahogany, Arizona fescue, prairie sagewort, common juniper, pussytoes
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 6 inches; very gravelly sandy loam
Bw—6 to 15 inches; very gravelly sandy loam
Cr—15 to 19 inches; weathered bedrock

Minor Components

Guanella and similar soils
Composition: about 10 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 3 to 30 percent
Drainage class: well drained
Ecological site: Loamy Park

Troutdale and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 30 to 50 percent

Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PIPO-PSME/MUMO (ponderosa pine-Rocky Mountain Douglas-fir/mountain muhly)

Major Uses

Recreation, watershed, and wildlife habitat

40—Raleigh-Rock outcrop complex, 50 to 70 percent slopes

Map Unit Setting

Elevation: 7,800 to 10,000 feet (2,377 to 3,048 meters)
Mean annual precipitation: 16 to 22 inches (410 to 560 millimeters)
Mean annual air temperature: 39 to 43 degrees F. (4.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days

Map Unit Composition

Raleigh and similar soils: 60 percent
Rock outcrop: 20 percent
Minor components: 20 percent

Component Descriptions

Raleigh soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 50 to 70 percent
Surface fragments: about 11 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.8 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Shallow Loam
Potential native vegetation: mountain mahogany, Arizona fescue, prairie sagewort, common juniper, pussytoes
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 6 inches; very gravelly sandy loam
Bw—6 to 15 inches; very gravelly sandy loam
Cr—15 to 19 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: backslopes and shoulders
Parent material: igneous and metamorphic rock
Slope: 50 to 70 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Legault and similar soils
Composition: about 10 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 50 to 70 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Tolland and similar soils
Composition: about 10 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 50 to 70 percent
Drainage class: well drained

Major Uses

Wildlife habitat and watershed

41—Redfeather-Legault complex, 30 to 70 percent slopes

Map Unit Setting

Elevation: 7,800 to 9,500 feet (2,377 to 2,896 meters)
Mean annual precipitation: 16 to 23 inches (410 to 580 millimeters)
Mean annual air temperature: 36 to 45 degrees F. (2.0 to 7.2 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine and Rocky Mountain Douglas-fir.

Map Unit Composition

Redfeather and similar soils: 45 percent
Legault and similar soils: 30 percent
Minor components: 25 percent

Component Descriptions

Redfeather soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 1.2 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/VACE (lodgepole pine, dwarf blueberry)
Potential native vegetation: russet buffaloberry, common juniper, dwarf blueberry, kinnikinnick, elk sedge, lupine
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 3 inches; slightly decomposed plant material
A—3 to 4 inches; gravelly sandy loam
E—4 to 8 inches; gravelly sandy loam
E/B—8 to 12 inches; very gravelly sandy loam
Bt—12 to 18 inches; very gravelly sandy clay loam
R—18 to 23 inches; bedrock

Legault soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: about 0.6 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, whortleberry, elk sedge, cliffbush, kinnikinnick, russet buffaloberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; extremely stony loamy sand
AC—4 to 18 inches; very gravelly loamy sand
Cr—18 to 22 inches; weathered bedrock

Minor Components

Rock outcrop
Composition: about 10 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 70 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Tolvar and similar soils
Composition: about 10 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 12 to 30 percent
Drainage class: well drained

Mammoth and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 60 percent
Drainage class: well drained

Major Uses

Woodland, recreation, and watershed

42—Redfeather-Legault-Tolvar complex, 12 to 30 percent slopes

Map Unit Setting

Elevation: 7,800 to 9,500 feet (2,377 to 2,896 meters)
Mean annual precipitation: 16 to 25 inches (410 to 640 millimeters)
Mean annual air temperature: 36 to 45 degrees F. (2.0 to 7.2 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine and Rocky Mountain Douglas-fir

on the Redfeather and Legault soils and subalpine fir and Engelmann's spruce on the Tolvar soil.

Map Unit Composition

Redfeather and similar soils: 40 percent
Legault and similar soils: 25 percent
Tolvar and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Redfeather soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 12 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 1.2 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/VACE (lodgepole pine, dwarf blueberry)
Potential native vegetation: common juniper, dwarf blueberry, elk sedge, grouse whortleberry, kinnikinnick, russet buffaloberry, lupine
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 3 inches; slightly decomposed plant material
A—3 to 4 inches; gravelly sandy loam
E—4 to 8 inches; gravelly sandy loam
E/B—8 to 12 inches; very gravelly sandy loam
Bt—12 to 18 inches; very gravelly sandy clay loam
R—18 to 23 inches; bedrock

Legault soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 12 to 30 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: about 0.6 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, whortleberry, cliffbush, elk sedge, kinnikinnick, russet buffaloberry
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; extremely stony loamy sand
AC—4 to 18 inches; very gravelly loamy sand
Cr—18 to 22 inches; weathered bedrock

Tolvar soils

Landform: mountain slopes
Position on landform: toeslopes, footslopes
Parent material: Slope alluvium derived from igneous and metamorphic rock
Slope: 12 to 30 percent
Surface fragments: about 1 percent
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 4.3 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, common juniper, lupine, elk sedge, kinnikinnick, russet buffaloberry
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A—1 inch to 4 inches; gravelly coarse sandy loam
E—4 to 14 inches; gravelly coarse sandy loam
E/B—14 to 19 inches; very gravelly sandy loam
B/E—19 to 26 inches; very cobbly sandy clay loam
Bt1—26 to 48 inches; very gravelly sandy clay loam
Bt2—48 to 70 inches; very gravelly sandy clay loam

Minor Components

Rock outcrop
Composition: about 5 percent

Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 12 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Mammoth and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 15 to 30 percent
Drainage class: well drained

Tahana and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: backslopes
Slope: 12 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained

Major Uses

Woodland, recreation, and watershed

43—Resort very gravelly sandy loam, 3 to 10 percent slopes

Map Unit Setting

Elevation: 7,600 to 8,800 feet (2,316 to 2,682 meters)
Mean annual precipitation: 17 to 20 inches (430 to 510 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine, Rocky Mountain juniper, Rocky Mountain Douglas-fir, and quaking aspen. This map unit occurs near Black Hawk and Central City.

Map Unit Composition

Resort and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Resort soils

Landform: ridges, mountain slopes
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 3 to 10 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.5 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Stony Loam
Potential native vegetation: Arizona fescue, mountain muhly, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 6s

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 7 inches; very gravelly sandy loam
A2—7 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Minor Components

Trag and similar soils
Composition: about 6 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 3 to 10 percent
Drainage class: well drained
Ecological site: Mountain Loam

Lininger and similar soils
Composition: about 5 percent
Landform: ridges
Slope: 3 to 10 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Breece and similar soils
Composition: about 5 percent
Landform: drainageways, alluvial fans
Slope: 3 to 10 percent
Drainage class: well drained
Ecological site: Loamy Park

Rock outcrop
Composition: about 4 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 3 to 10 percent

Depth to restrictive feature: 0 inches to bedrock (lithic)

Major Uses

Wildlife habitat and watershed

44—Resort very gravelly sandy loam, 10 to 30 percent slopes

Map Unit Setting

Elevation: 7,750 to 8,800 feet (2,361 to 2,682 meters)
Mean annual precipitation: 17 to 20 inches (430 to 510 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine, Rocky Mountain juniper, Rocky Mountain Douglas-fir, and quaking aspen.

Map Unit Composition

Resort and similar soils: 80 percent
Minor components: 20 percent

Component Descriptions

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 10 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.5 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Stony Loam
Potential native vegetation: Arizona fescue, mountain muhly, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 7 inches; very gravelly sandy loam
A2—7 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Minor Components

Trag and similar soils
Composition: about 6 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Mountain Loam

Lininger and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 30 percent
Drainage class: well drained
Ecological site: Loamy Park

Rock outcrop
Composition: about 4 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 10 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Major Uses

Wildlife habitat and watershed

45—Resort very gravelly sandy loam, 15 to 30 percent south slopes

Map Unit Setting

Elevation: 8,000 to 8,600 feet (2,438 to 2,621 meters)
Mean annual precipitation: 17 to 19 inches (430 to 480 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine and Rocky Mountain Douglas-fir.

Map Unit Composition

Resort and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 15 to 30 percent, southwest to south aspects
Depth to restrictive feature: 7 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.5 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PIPO/PUTR (ponderosa pine, antelope bitterbrush)
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, sheep fescue, Letterman's needlegrass, elk sedge, wax currant, Rocky Mountain juniper, antelope bitterbrush, true mountain mahogany, western snowberry
Land capability subclass (nonirrigated): 6e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 7 inches; very gravelly sandy loam
A2—7 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Minor Components

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 30 percent
Drainage class: well drained
Ecological site: Loamy Park

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Cathedral and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Major Uses

Woodland, wildlife habitat, and watershed

46—Resort very stony sandy loam, 30 to 50 percent slopes

Map Unit Setting

Elevation: 8,000 to 8,600 feet (2,438 to 2,621 meters)
Mean annual precipitation: 17 to 19 inches (430 to 480 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine and Rocky Mountain Douglas-fir.

Map Unit Composition

Resort and similar soils: 85 percent
Minor components: 15 percent

Component Descriptions

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 50 percent
Surface fragments: about 4 percent
Depth to restrictive feature: 7 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.5 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PIPO/PUTR (ponderosa pine, antelope bitterbrush)
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, sheep fescue, Letterman's needlegrass, elk sedge, wax currant,

Rocky Mountain juniper, antelope bitterbrush, true mountain mahogany, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 7 inches; very stony sandy loam
A2—7 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Minor Components

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 50 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Cathedral and similar soils
Composition: about 5 percent
Landform: ridges, mountain slopes
Position on landform: backslopes, shoulders
Slope: 30 to 50 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Ecological site: Stony Loam

Major Uses

Woodland, wildlife habitat, and watershed

47—Resort-Cathedral complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 7,600 to 8,800 feet (2,316 to 2,682 meters)
Mean annual precipitation: 17 to 20 inches (430 to 510 millimeters)
Mean annual air temperature: 41 to 46 degrees F. (5.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine, Rocky Mountain juniper, Rocky Mountain Douglas-fir, and quaking aspen on the Resort soil.

Map Unit Composition

Resort and similar soils: 50 percent
Cathedral and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 3 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.4 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Stony Loam
Potential native vegetation: Arizona fescue, mountain muhly, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 6 inches; very stony sandy loam
A2—6 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Cathedral soils

Landform: ridges, mountain slopes
Position on landform: shoulders, backslopes
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 2 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)

Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very cobbly sandy loam
AB—3 to 6 inches; very gravelly sandy loam
Bw—6 to 11 inches; very gravelly sandy loam
R—11 to 15 inches; unweathered bedrock

Minor Components

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 100 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Trag and similar soils
Composition: about 3 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Mountain Loam

Lininger and similar soils
Composition: about 2 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Major Uses

Wildlife habitat and watershed

48—Resort-Cathedral-Rubble land complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 7,600 to 8,800 feet (2,316 to 2,682 meters)
Mean annual precipitation: 17 to 20 inches (430 to 510 millimeters)
Mean annual air temperature: 41 to 46 degrees F. (5.0 to 8.0 degrees C.)
Frost-free period: 55 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine, Rocky Mountain juniper, Rocky Mountain Douglas-fir, and quaking aspen on the Resort soil.

Map Unit Composition

Resort and similar soils: 35 percent
Cathedral and similar soils: 30 percent
Rubble land: 20 percent
Minor components: 15 percent

Component Descriptions

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 3 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.4 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Stony Loam
Potential native vegetation: Arizona fescue, mountain muhly, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material

A1—1 inch to 6 inches; very stony sandy loam
A2—6 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Cathedral soils

Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 2 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very cobbly sandy loam
AB—3 to 6 inches; very gravelly sandy loam
Bw—6 to 11 inches; very gravelly sandy loam
R—11 to 15 inches; unweathered bedrock

Rubble land

Description: Rubble land consists of unconsolidated rock fragments.
Landform: talus slopes
Parent material: Colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 80 inches to bedrock (lithic)
Drainage class: excessively drained
Available water capacity: about 3.0 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Land capability subclass (nonirrigated): 8

Minor Components

Breece and similar soils
Composition: about 5 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Trag and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 15 to 30 percent
Drainage class: well drained
Ecological site: Mountain Loam

Lininger and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Major Uses

Wildlife habitat and watershed

49—Rock outcrop, 30 to 100 percent slopes

Map Unit Setting

Elevation: 7,400 to 11,850 feet (2,256 to 3,612 meters)
Mean annual precipitation: 18 to 40 inches (460 to 1,020 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 30 to 90 days

Map Unit Composition

Rock outcrop: 85 percent
Minor components: 15 percent

Component Descriptions

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes

Parent material: igneous and metamorphic rock
Slope: 30 to 100 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Pettingell and similar soils
Composition: about 15 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 80 percent
Drainage class: well drained
Ecological site: Stony Loam

Major Uses

Watershed, wildlife habitat, and recreation

50—Rock outcrop-Cathedral-Resort complex, 30 to 70 percent slopes

Map Unit Setting

Elevation: 7,000 to 9,200 feet (2,134 to 2,804 meters)
Mean annual precipitation: 17 to 22 inches (430 to 560 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days
Note: The overstory vegetation consists mainly of scattered ponderosa pine and Rocky Mountain juniper.

Map Unit Composition

Rock outcrop: 45 percent
Cathedral and similar soils: 25 percent
Resort and similar soils: 20 percent
Minor components: 10 percent

Component Descriptions

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 30 to 70 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Cathedral soils

Landform: ridges, mountain slopes
Position on landform: shoulders, backslopes
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 3 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, mountain mahogany, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very cobbly sandy loam
AB—3 to 6 inches; very gravelly sandy loam
Bw—6 to 11 inches; very gravelly sandy loam
R—11 to 15 inches; unweathered bedrock

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 1 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.4 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: Stony Loam
Potential native vegetation: Arizona fescue, mountain muhly, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 6 inches; very stony sandy loam
A2—6 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Minor Components

Tolvar and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Slope: 12 to 30 percent
Drainage class: well drained
Ecological site: ABLA-PIEN/VAMY (subalpine fir, Engelmann's spruce, Rocky Mountain whortleberry)
Distinguishing characteristics: Occurs on northern slopes.

Lininger and similar soils
Composition: about 3 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 15 to 30 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Lone Rock and similar soils
Composition: about 2 percent
Landform: alluvial fans, mountain slopes
Position on landform: footslopes
Slope: 15 to 50 percent
Drainage class: somewhat excessively drained
Ecological site: Mountain Loam

Major Uses

Recreation and wildlife habitat

51—Rock outcrop-Resort complex, 30 to 80 percent slopes

Map Unit Setting

Elevation: 7,000 to 8,800 feet (2,134 to 2,682 meters)
Mean annual precipitation: 17 to 20 inches (430 to 510 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 45 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine and Rocky Mountain Douglas-fir. This map unit occurs north of Georgetown.

Map Unit Composition

Rock outcrop: 45 percent
Resort and similar soils: 30 percent
Minor components: 25 percent

Component Descriptions

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 30 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Resort soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 80 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 7 to 20 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.4 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PIPO/PUTR (ponderosa pine, antelope bitterbrush)
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, sheep fescue, Letterman's needlegrass, elk sedge, wax currant, Rocky Mountain juniper, antelope bitterbrush, true mountain mahogany, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
A1—1 inch to 6 inches; very stony sandy loam

A2—6 to 14 inches; extremely cobbly loamy sand
Cr—14 to 18 inches; weathered bedrock

Minor Components

Breece and similar soils
Composition: about 15 percent
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Slope: 3 to 40 percent
Drainage class: well drained
Ecological site: Loamy Park

Lone Rock and similar soils
Composition: about 10 percent
Landform: alluvial fans, mountain slopes
Position on landform: footslopes
Slope: 15 to 50 percent
Drainage class: somewhat excessively drained
Ecological site: Mountain Loam

Major Uses

Watershed and wildlife habitat

52—Rock outcrop-Rubble land-Cathedral complex, 15 to 40 percent slopes

Map Unit Setting

Elevation: 7,200 to 11,850 feet (2,194 to 3,612 meters)
Mean annual precipitation: 16 to 40 inches (410 to 1,020 millimeters)
Mean annual air temperature: 41 to 46 degrees F. (5.0 to 8.0 degrees C.)
Frost-free period: 30 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine, Rocky Mountain Douglas-fir, and Rocky Mountain juniper.

Map Unit Composition

Rock outcrop: 40 percent
Rubble land: 20 percent
Cathedral and similar soils: 20 percent
Minor components: 20 percent

Component Descriptions

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 30 to 100 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Rubble land

Description: Rubble land consists of unconsolidated rock fragments.
Landform: talus slopes
Parent material: Colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent
Depth to restrictive feature: 20 to 80 inches to bedrock (lithic)
Drainage class: excessively drained
Available water capacity: about 3.0 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Land capability subclass (nonirrigated): 8

Cathedral soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 15 to 40 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, mountain mahogany, antelope bitterbrush, wax currant, western wheatgrass, western snowberry, yucca
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very cobbly sandy loam
AB—3 to 6 inches; very gravelly sandy loam
Bw—6 to 11 inches; very gravelly sandy loam
R—11 to 15 inches; unweathered bedrock

Minor Components

Tolland and similar soils
Composition: about 15 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 15 to 40 percent
Drainage class: well drained
Ecological site: ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)
Distinguishing characteristics: Occurs on northern slopes.

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 15 to 40 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Distinguishing characteristics: Occurs on northern slopes.

Major Uses

Watershed, wildlife habitat, and recreation

53—Rock outcrop-Rubble land-Cathedral complex, 40 to 100 percent slopes

Map Unit Setting

Elevation: 7,200 to 11,850 feet (2,194 to 3,612 meters)
Mean annual precipitation: 16 to 40 inches (410 to 1,020 millimeters)
Mean annual air temperature: 41 to 46 degrees F. (5.0 to 8.0 degrees C.)
Frost-free period: 30 to 100 days
Note: The overstory vegetation consists of scattered ponderosa pine, Rocky Mountain Douglas-fir, and Rocky Mountain juniper.

Map Unit Composition

Rock outcrop: 40 percent
Rubble land: 20 percent
Cathedral and similar soils: 20 percent
Minor components: 20 percent

Component Descriptions

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: backslopes and shoulders
Parent material: igneous and metamorphic rock
Slope: 40 to 100 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Rubble land

Description: Rubble land consists of unconsolidated rock fragments.
Landform: talus slopes
Parent material: Colluvium derived from igneous and metamorphic rock
Slope: 40 to 60 percent
Depth to restrictive feature: 20 to 80 inches to bedrock (lithic)
Drainage class: excessively drained
Available water capacity: about 3.0 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: low
Land capability subclass (nonirrigated): 8

Cathedral soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 40 to 70 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, mountain mahogany, antelope bitterbrush, wax

currant, western wheatgrass, western snowberry, yucca
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 3 inches; very cobbly sandy loam
AB—3 to 6 inches; very gravelly sandy loam
Bw—6 to 11 inches; very gravelly sandy loam
R—11 to 15 inches; unweathered bedrock

Minor Components

Tolland and similar soils
Composition: about 15 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 40 to 80 percent
Drainage class: well drained
Ecological site: ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)
Distinguishing characteristics: Occurs on northern slopes.

Legault and similar soils
Composition: about 5 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 40 to 80 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Distinguishing characteristics: Occurs on northern slopes.

Major Uses

Watershed, wildlife habitat, and recreation

54—Rock outcrop-Tolland complex, 30 to 100 percent slopes

Map Unit Setting

Elevation: 9,000 to 10,700 feet (2,743 to 3,261 meters)
Mean annual precipitation: 17 to 23 inches (430 to 580 millimeters)
Mean annual air temperature: 39 to 43 degrees F. (4.0 to 6.0 degrees C.)
Frost-free period: 25 to 90 days
Note: The overstory vegetation consists mainly of subalpine fir, Engelmann's spruce, lodgepole pine, and scattered Rocky Mountain Douglas-fir.

Map Unit Composition

Rock outcrop: 60 percent
Tolland and similar soils: 30 percent
Minor components: 10 percent

Component Descriptions

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: backslopes and shoulders
Parent material: igneous and metamorphic rock
Slope: 30 to 100 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Tolland soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous sandy colluvium derived from igneous and metamorphic rock
Slope: 30 to 80 percent
Surface fragments: about 2 percent , about 15 percent cobbles
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.6 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)
Potential native vegetation: elk sedge, common juniper, kinnikinnick, dwarf blueberry, lupine, quaking aspen
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 inch to 2 inches; moderately decomposed plant material
A—2 to 5 inches; cobbly sandy loam
BE—5 to 11 inches; very gravelly coarse sandy loam
C1—11 to 50 inches; extremely gravelly loamy coarse sand
C2—50 to 69 inches; extremely cobbly loamy coarse sand

Minor Components

Pettingell and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 80 percent
Drainage class: well drained
Ecological site: Stony Loam

Bendemeere and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 55 percent
Drainage class: well drained
Ecological site: ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)

Major Uses

Watershed, wildlife habitat, and recreation

55—Rogert-Herbman-Rock outcrop complex, 30 to 70 percent slopes

Map Unit Setting

Elevation: 7,600 to 9,100 feet (2,316 to 2,774 meters)
Mean annual precipitation: 18 to 20 inches (460 to 510 millimeters)
Mean annual air temperature: 37 to 43 degrees F. (3.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists of scattered ponderosa pine and Rocky Mountain Douglas-fir on the Herbman soil.

Map Unit Composition

Rogert and similar soils: 45 percent
Herbman and similar soils: 30 percent
Rock outcrop: 15 percent
Minor components: 10 percent

Component Descriptions

Rogert soils

Landform: ridges, mountain slopes
Position on landform: shoulders
Parent material: Residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 6 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.6 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 8 inches; extremely cobbly sandy loam
C—8 to 16 inches; extremely gravelly sandy loam
R—16 to 20 inches; unweathered bedrock

Herbman soils

Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 0 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 0.9 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/ARUV (lodgepole pine, kinnikinnick)
Potential native vegetation: bluebunch wheatgrass, kinnikinnick, needlegrass, bluegrass, fescue, common juniper, prairie sagewort, sedge
Land capability subclass (nonirrigated): 7e

Typical Profile:
A—0 to 4 inches; stony sandy loam
AC—4 to 13 inches; very gravelly sandy loam
Cr—13 to 17 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: backslopes and shoulders
Parent material: igneous and metamorphic rock
Slope: 30 to 70 percent

Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Kittredge and similar soils
Composition: about 3 percent
Landform: alluvial fans, mountain slopes
Position on landform: toeslopes
Slope: 9 to 30 percent
Drainage class: well drained
Ecological site: Mountain Loam

Troutdale and similar soils
Composition: about 3 percent
Landform: mountain slopes, ridges
Position on landform: backslopes
Slope: 30 to 50 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained

Pettingell and similar soils
Composition: about 2 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 70 percent
Drainage class: well drained
Ecological site: Stony Loam

Sprucedale and similar soils
Composition: about 2 percent
Landform: mountain slopes, ridges
Position on landform: shoulders
Slope: 30 to 50 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: well drained

Major Uses

Wildlife habitat and recreation

56—Tahana-Legault-Rock outcrop complex, 30 to 70 percent slopes

Map Unit Setting

Elevation: 7,400 to 9,500 feet (2,256 to 2,896 meters)
Mean annual precipitation: 18 to 25 inches (460 to 640 millimeters)
Mean annual air temperature: 36 to 41 degrees F. (2.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of Rocky Mountain Douglas-fir, lodgepole pine, and scattered subalpine fir.

Map Unit Composition

Tahana and similar soils: 40 percent
Legault and similar soils: 30 percent
Rock outcrop: 25 percent
Minor components: 5 percent

Component Descriptions

Tahana soils

Landform: mountain slopes
Position on landform: backslopes
Parent material: micaceous sandy colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 8 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: somewhat excessively drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.1 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PSME/ARUV-JUCO (Rocky Mountain Douglas-fir, kinnikinnick, common juniper)
Potential native vegetation: common juniper, kinnikinnick, Oregongrape, quaking aspen, Woods' rose, wax currant, yarrow, golden currant
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
Oa—1 inch to 2 inches; moderately decomposed plant material
Bw—2 to 8 inches; gravelly sandy loam
BC—8 to 20 inches; very gravelly loamy sand
C—20 to 24 inches; extremely gravelly loamy sand
Cr—24 to 28 inches; weathered bedrock

Legault soils

Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders

Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Slope: 30 to 70 percent
Surface fragments: about 6 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 6.0 to 20 in./hr. (rapid)
Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: high
Ecological site: PICO/JUCO (lodgepole pine, common juniper)
Potential native vegetation: common juniper, kinnikinnick, mallow ninebark, Woods' rose
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 6 inches; very gravelly loamy sand
AC—6 to 19 inches; very gravelly sand
Cr—19 to 23 inches; weathered bedrock

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 30 to 70 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Tolland and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 70 percent
Drainage class: well drained

Major Uses

Recreation, homesites, and wildlife habitat

57—Tolland-Rock outcrop complex, 30 to 80 percent slopes

Map Unit Setting

Elevation: 9,000 to 10,700 feet (2,743 to 3,261 meters)
Mean annual precipitation: 17 to 25 inches (430 to 640 millimeters)
Mean annual air temperature: 39 to 43 degrees F. (4.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of lodgepole pine, subalpine fir, Engelmann's spruce, and Rocky Mountain Douglas-fir.

Map Unit Composition

Tolland and similar soils: 45 percent
Rock outcrop: 25 percent
Minor components: 30 percent

Component Descriptions

Tolland soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous sandy colluvium derived from igneous and metamorphic rock
Slope: 30 to 80 percent
Surface fragments: about 2 percent , about 15 percent cobbles
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.6 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)
Potential native vegetation: common juniper, kinnikinnick, elk sedge, spike trisetum, white spirea, Oregongrape, lupine
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material
Oe—1 inch to 2 inches; moderately decomposed plant material
A—2 to 5 inches; cobbly sandy loam

BE—5 to 11 inches; very gravelly coarse sandy loam
C1—11 to 50 inches; extremely gravelly loamy coarse sand
C2—50 to 69 inches; extremely cobbly loamy coarse sand

Rock outcrop

Description: Rock outcrop consists of surface exposures of igneous and metamorphic bedrock.
Landform: cliffs, mountain slopes, and ridges
Position on landform: shoulders and backslopes
Parent material: igneous and metamorphic rock
Slope: 30 to 80 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)
Available water capacity: about 0.0 inches (very low)
Runoff class: very high
Land capability subclass (nonirrigated): 8

Minor Components

Legault and similar soils
Composition: about 10 percent
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 30 to 80 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Bendemeere and similar soils
Composition: about 10 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 55 percent
Drainage class: well drained
Ecological site: PSME/ARUV-JUCO (Rocky Mountain Douglas-fir, kinnikinnick, common juniper)

Pettingell and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 80 percent
Drainage class: well drained
Ecological site: Stony Loam

Arents and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Major Uses

Watershed, wildlife habitat, and recreation

58—Tonahutu-Ohman complex, 30 to 60 percent slopes

Map Unit Setting

Elevation: 9,800 to 11,400 feet (2,987 to 3,475 meters)
Mean annual precipitation: 24 to 32 inches (610 to 810 millimeters)
Mean annual air temperature: 36 to 41 degrees F. (2.0 to 5.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of Engelmann's spruce, subalpine fir, and lodgepole pine.

Map Unit Composition

Tonahutu and similar soils: 50 percent
Ohman and similar soils: 35 percent
Minor components: 15 percent

Component Descriptions

Tonahutu soils

Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Slope: 30 to 60 percent
Surface fragments: about 1 percent
Depth to restrictive feature: 40 to 60 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 3.2 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PIEN/VASC (Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, dwarf blueberry, Ross' sedge, common juniper
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 1 inch; slightly decomposed plant material

E—1 inch to 4 inches; coarse sandy loam
E/B—4 to 16 inches; coarse sandy loam
E and Bt—16 to 24 inches; very gravelly coarse sandy loam
C1—24 to 38 inches; very gravelly coarse sandy loam
C2—38 to 48 inches; very gravelly loamy coarse sand
Cr—48 to 52 inches; weathered bedrock

Ohman soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 30 to 60 percent, northwest to north aspects
Surface fragments: about 0 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 1.7 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)
Potential native vegetation: grouse whortleberry, Ross' sedge, common juniper, lupine
Land capability subclass (nonirrigated): 7e

Typical Profile:
Oi—0 to 2 inches; slightly decomposed plant material
A—2 to 5 inches; very stony sandy loam
E—5 to 13 inches; very gravelly sandy loam
E and Bt1—13 to 21 inches; very gravelly sandy loam
E and Bt2—21 to 35 inches; extremely gravelly sandy loam
Cr—35 to 39 inches; weathered bedrock

Minor Components

Legault and similar soils
Composition: about 10 percent
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Slope: 30 to 60 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: PICO/JUCO (lodgepole pine, common juniper)

Bendemeere and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: footslopes
Slope: 30 to 60 percent
Drainage class: well drained

Major Uses

Homesites, recreation, wildlife habitat, woodland, and watershed

59—Trag gravelly sandy loam, 3 to 15 percent slopes

Map Unit Setting

Elevation: 7,800 to 8,600 feet (2,377 to 2,621 meters)
Mean annual precipitation: 18 to 20 inches (460 to 510 millimeters)
Mean annual air temperature: 43 to 46 degrees F. (6.0 to 8.0 degrees C.)
Frost-free period: 70 to 100 days

Map Unit Composition

Trag and similar soils: 70 percent
Minor components: 30 percent

Component Descriptions

Trag soils

Landform: mountain slopes
Position on landform: toeslopes
Parent material: alluvium and/or slope alluvium derived from igneous and metamorphic rock
Slope: 3 to 15 percent
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 7.5 inches (moderate)
Shrink-swell potential: about 4.5 percent (moderate)
Runoff class: medium
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 4 inches; gravelly sandy loam
A2—4 to 14 inches; gravelly sandy clay loam
Bt1—14 to 21 inches; cobbly sandy clay loam
Bt2—21 to 27 inches; cobbly sandy clay loam
Bt3—27 to 45 inches; cobbly clay loam
Bt4—45 to 60 inches; gravelly sandy clay loam

Minor Components

Breece and similar soils
Composition: about 8 percent
Landform: alluvial fans, drainageways
Slope: 3 to 15 percent
Drainage class: well drained
Ecological site: Loamy Park

Cumulic Cryaquolls and similar soils
Composition: about 8 percent
Landform: drainageways
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: occasional
Ecological site: Mountain Meadow

Lininger and similar soils
Composition: about 8 percent
Landform: ridges
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Ecological site: Mountain Loam

Lone Rock and similar soils
Composition: about 6 percent
Landform: alluvial fans
Slope: 2 to 9 percent
Drainage class: somewhat excessively drained
Ecological site: Mountain Loam

Major Uses

Rangeland and wildlife habitat

60—Troutdale-Rogert-Kittredge complex, 3 to 15 percent slopes

Map Unit Setting

Elevation: 8,000 to 9,600 feet (2,438 to 2,926 meters)
Mean annual precipitation: 17 to 21 inches (432 to 530 millimeters)
Mean annual air temperature: 39 to 43 degrees F. (4.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of ponderosa pine and Rocky Mountain Douglas-fir.

Map Unit Composition

Troutdale and similar soils: 40 percent
Rogert and similar soils: 25 percent
Kittredge and similar soils: 20 percent
Minor components: 15 percent

Component Descriptions

Troutdale soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 3.6 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PIPO-PSME/MUMO (ponderosa pine-Rocky Mountain Douglas-fir/mountain muhly)
Potential native vegetation: bluegrass, Arizona fescue, sedge, mountain brome, prairie Junegrass, mountain muhly, pine dropseed, western wheatgrass
Land capability subclass (nonirrigated): 6c

Typical Profile:
A—0 to 4 inches; sandy loam
BA—4 to 8 inches; sandy loam
Bt1—8 to 14 inches; sandy clay loam
Bt2—14 to 18 inches; sandy clay loam
BCt—18 to 29 inches; sandy clay loam
Cr—29 to 33 inches; weathered bedrock

Rogert soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 3 to 15 percent
Surface fragments: about 1 percent
Depth to restrictive feature: 8 to 20 inches to bedrock (lithic)
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)

Available water capacity: about 0.7 inch (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very high
Ecological site: Stony Loam
Potential native vegetation: mountain muhly, Arizona fescue, Griffith wheatgrass, Parry's danthonia, antelope bitterbrush, wax currant, western wheatgrass, western snowberry
Land capability subclass (nonirrigated): 6s

Typical Profile:
A—0 to 4 inches; very gravelly sandy loam
C—4 to 12 inches; very gravelly sandy loam
R—12 to 16 inches; unweathered bedrock

Kittredge soils

Landform: alluvial fans, mountain slopes
Position on landform: toeslopes
Parent material: micaceous alluvium derived from igneous and metamorphic rock
Slope: 3 to 15 percent
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 7.9 inches (moderate)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: Mountain Loam
Potential native vegetation: mountain muhly, Arizona fescue, Parry's danthonia, Letterman's needlegrass, Sandberg bluegrass, western wheatgrass, antelope bitterbrush, slender wheatgrass, wax currant
Land capability subclass (nonirrigated): 6c

Typical Profile:
A—0 to 10 inches; sandy loam
Bt1—10 to 13 inches; sandy clay loam
Bt2—13 to 22 inches; clay loam
Bt3—22 to 28 inches; sandy clay loam
Bt4—28 to 38 inches; gravelly sandy clay loam
BC—38 to 53 inches; gravelly clay loam
C—53 to 72 inches; loamy sand

Minor Components

Cumulic Cryaquolls and similar soils
Composition: about 5 percent
Landform: drainageways
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: occasional
Ecological site: Mountain Meadow

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Guanella and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 3 to 15 percent
Drainage class: well drained
Ecological site: Loamy Park

Major Uses

Rangeland, wildlife habitat, watershed, and homesites

61—Troutdale-Sprucedale gravelly sandy loams, 3 to 15 percent slopes

Map Unit Setting

Elevation: 7,600 to 9,500 feet (2,316 to 2,896 meters)
Mean annual precipitation: 17 to 23 inches (430 to 580 millimeters)
Mean annual air temperature: 41 to 43 degrees F. (5.0 to 6.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of ponderosa pine and scattered Rocky Mountain Douglas-fir. This map unit joins the Golden Soil Survey.

Map Unit Composition

Troutdale and similar soils: 45 percent
Sprucedale and similar soils: 40 percent
Minor components: 15 percent

Component Descriptions

Troutdale soils

Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Slope: 3 to 15 percent
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)

Available water capacity: about 3.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PIPO-PSME/MUMO (ponderosa pine-Rocky Mountain Douglas-fir/mountain muhly)
Potential native vegetation: bluegrass, Arizona fescue, sedge, mountain brome, prairie Junegrass, mountain muhly, pine dropseed, western wheatgrass
Land capability subclass (nonirrigated): 6c

Typical Profile:
A—0 to 8 inches; gravelly sandy loam
Bt—8 to 18 inches; sandy clay loam
BC—18 to 29 inches; gravelly sandy loam
Cr—29 to 33 inches; weathered bedrock

Sprucedale soils

Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)
Drainage class: well drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 1.3 inches (very low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: medium
Ecological site: PIPO-PSME/MUMO (ponderosa pine-Rocky Mountain Douglas-fir/mountain muhly)
Potential native vegetation: Arizona fescue, mountain muhly, western wheatgrass, Parry's danthonia, slender wheatgrass, mountain brome, prairie Junegrass, prairie sagewort
Land capability subclass (nonirrigated): 6s

Typical Profile:
A—0 to 6 inches; gravelly sandy loam
Bt—6 to 12 inches; sandy loam
Cr—12 to 16 inches; weathered bedrock

Minor Components

Kittredge and similar soils
Composition: about 4 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 3 to 15 percent
Drainage class: well drained

Rogert and similar soils
Composition: about 4 percent
Landform: ridges
Slope: 3 to 15 percent
Depth to restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: well drained

Rock outcrop
Composition: about 3 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 3 to 15 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Cumulic Cryaquolls and similar soils
Composition: about 2 percent
Landform: drainageways
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: occasional
Ecological site: Mountain Meadow

Urban land
Composition: about 2 percent
Landform: mountain slopes, alluvial fans
Position on landform: toeslopes, footslopes
Slope: 0 to 9 percent

Major Uses

Wildlife habitat, recreation, woodland, and community development

62—Typic Cryaquents-Cumulic Cryaquolls complex, 0 to 3 percent slopes

Map Unit Setting

Elevation: 8,000 to 8,600 feet (2,438 to 2,621 meters)
Mean annual precipitation: 17 to 21 inches (430 to 530 millimeters)
Mean annual air temperature: 36 to 45 degrees F. (2.0 to 7.0 degrees C.)
Frost-free period: 25 to 75 days
Note: The overstory vegetation consists mainly of narrowleaf cottonwood and peachleaf willow on the Cumulic Cryaquolls soil.

Map Unit Composition

Typic Cryaquents and similar soils: 50 percent

Cumulic Cryaquolls and similar soils: 45 percent
Minor components: 5 percent

Component Descriptions

Typic Cryaquents soils

Landform: flood plains, oxbows
Parent material: alluvium derived from igneous and metamorphic rock
Slope: 0 to 3 percent
Drainage class: poorly drained
Slowest permeability: 0.2 to 0.6 in./hr. (moderately slow)
Available water capacity: about 5.0 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Flooding hazard: frequent
Seasonal depth to a high water table: about 0 to 18 inches
Runoff class: low
Ecological site: POAN3/SAEX (narrowleaf cottonwood/coyote willow)
Potential native vegetation: golden willow, sandbar willow, prunus
Land capability subclass (nonirrigated): 6w

Typical Profile:
A—0 to 3 inches; fine sandy loam
Cg1—3 to 18 inches; cobbly sand
Cg2—18 to 23 inches; loam
Cg3—23 to 29 inches; loam
Cg4—29 to 32 inches; clay loam
2Cg—32 to 44 inches; sand
3Cg—44 to 60 inches; very gravelly sand

Cumulic Cryaquolls soils

Landform: drainageways
Parent material: alluvium derived from igneous and metamorphic rock
Slope: 0 to 3 percent
Drainage class: poorly drained
Slowest permeability: 0.6 to 2.0 in./hr. (moderate)
Available water capacity: about 4.6 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Flooding hazard: occasional
Seasonal depth to a high water table: about 6 to 18 inches
Runoff class: very low
Ecological site: Mountain Meadow
Potential native vegetation: Nebraska sedge, Baltic rush, golden willow, tufted hairgrass, American mannagrass, peachleaf willow, smallwing sedge, prunus
Land capability subclass (nonirrigated): 6w

Typical Profile:
A—0 to 6 inches; loam
Ag1—6 to 14 inches; loam
Ag2—14 to 21 inches; loam
2C—21 to 64 inches; very gravelly sand

Minor Components

Guanella and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes
Slope: 3 to 9 percent
Drainage class: well drained
Ecological site: Loamy Park

Major Uses

Watershed, wildlife habitat, homesites, recreation, and gravel quarries

63—Urban land-Breece complex, 0 to 9 percent slopes

Map Unit Setting

Elevation: 7,300 to 7,500 feet (2,225 to 2,286 meters)
Mean annual precipitation: 16 to 20 inches (410 to 510 millimeters)
Mean annual air temperature: 41 to 45 degrees F. (5.0 to 7.0 degrees C.)
Frost-free period: 55 to 100 days

Map Unit Composition

Urban land: 55 percent
Breece and similar soils: 35 percent
Minor components: 10 percent

Component Descriptions

Urban land

Description: The urban land is covered with houses, commercial buildings, streets, alleyways, sidewalks and parking lots.
Landform: mountain slopes, alluvial fans
Position on landform: footslopes, toeslopes
Slope: 0 to 9 percent

Available water capacity: about 0.0 inches (very low)
Runoff class: high
Land capability subclass (nonirrigated): 8

Breece soils

Landform: drainageways, alluvial fans
Parent material: alluvium and slope alluvium derived from igneous and metamorphic rock
Slope: 0 to 9 percent
Drainage class: well drained
Slowest permeability: 2.0 to 6.0 in./hr. (moderately rapid)
Available water capacity: about 5.1 inches (low)
Shrink-swell potential: about 1.5 percent (low)
Runoff class: very low
Ecological site: Loamy Park
Potential native vegetation: Parry's danthonia, Arizona fescue, Letterman's needlegrass, mountain muhly, needleandthread, slender wheatgrass, muttongrass, elk sedge
Land capability subclass (nonirrigated): 4e

Typical Profile:
A1—0 to 7 inches; gravelly sandy loam
A2—7 to 20 inches; gravelly sandy loam
C1—20 to 42 inches; gravelly coarse sandy loam
C2—42 to 72 inches; gravelly sandy loam

Minor Components

Arents and similar soils
Composition: about 5 percent
Landform: mountain slopes
Position on landform: toeslopes, footslopes
Slope: 5 to 80 percent
Drainage class: somewhat excessively drained

Rock outcrop
Composition: about 5 percent
Landform: cliffs, mountain slopes, ridges
Position on landform: backslopes, shoulders
Slope: 0 to 6 percent
Depth to restrictive feature: 0 inches to bedrock (lithic)

Major Uses

Homesites, recreation, public facilities, and rangeland

64—Water

Map Unit Setting

Note: Occurs on lakes, streams, and ponds

Map Unit Composition

Water: 95 percent
Minor components: 5 percent

Component Descriptions

Water

Minor Components

Cumulic Cryaquolls and similar soils
Composition: about 5 percent
Landform: drainageways
Slope: 0 to 3 percent
Drainage class: poorly drained
Flooding hazard: occasional
Ecological site: Mountain Meadow

Figure 2.—In the foreground is a typical landscape of Cathedral-Rock outcrop complex, 5 to 30 percent slopes. Silver mining has had a major impact on the current landscape, as exhibited by the mine waste on the left side of the photo.

Figure 3.—High mountain meadows serve as filters for snowmelt and rain runoff for downstream water quality. This is an area of Cumulic Cryaquolls, 0 to 3 percent slopes.

Figure 4.—The area in the forground is typical of Gateview-Kittredge complex, 20 to 45 percent slopes.

Figure 5.—Typical landscape of Grimstone-Bullwark family complex, 9 to 30 percent slopes with lodgepole pine overstory.

Figure 6.—The heavily forested north-facing mountain slope behind and to the right of the Rocky Mountain Douglas-fir in the foreground is a typical landscape of Grimstone-Hiwan-Rock outcrop complex, 30 to 60 percent slopes.

Figure 7.—The grass-covered slope in the foreground is an area of Lininger-Breece gravelly sandy loams, 3 to 12 percent slopes.

Figure 8.—Subalpine fir-Englemann's spruce/grouse whortleberry ecological site occurs in the subalpine zone in an area of Mammoth-Ohman-Rock outcrop complex, 30 to 60 percent slopes.

Figure 9.—The treeless portion of the background is a typical mountain slope of Resort very gravelly sandy loam, 10 to 30 percent slopes. The foreground is Breece gravelly sandy loam, 3 to 40 percent slopes.

Figure 10.—The map unit Resort-Cathedral complex, 30 to 60 percent slopes in the foreground commonly has stones on the surface.

Figure 11.—Mixed stands of lodgepole pine, Rocky Mountain Douglas-fir, and quaking aspen commonly occur on Tahana-Legault-Rock outcrop complex, 30 to 70 percent slopes.

Figure 12.—The brushy area in the center is narrowleaf cottonwood-coyote willow-river birch habitat in an area of Typic Cryaquents-Cumulic Cryaquolls complex, 0 to 3 percent slopes.

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. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for pasture; as rangeland and forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to 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. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited, somewhat limited,* and *very limited*. The suitability ratings are expressed as *well suited, moderately suited, poorly suited,* and *unsuited* or as *good, fair,* and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Rangeland

About 31 percent of the Georgetown area is rangeland and commonly is used for livestock grazing and wildlife habitat. In addition, many woodland areas also are used for grazing by cattle and wildlife.

On many ranches, the forage produced on private rangeland is supplemented by irrigated grasses raised in the adjacent meadows of streams in the mountain valleys in the area. Many of the ranchers in this area use National Forest and Colorado Division of Wildlife lands to supplement their existing rangelands.

The native vegetation in many parts of the survey area has been depleted by continuous use. Parts of the area under heavy use are riparian areas and

ponderosa pine woodlands. The production of usable forage under the ponderosa pine is limited in many places due to shallow soils and invading shrub species. Productivity of the range can be increased if proper management practices are applied and carried out.

The area has two major kinds of native plant communities: those of the lower montane including the riparian habitats, and the timbered sites of the upper montane and subalpine.

The lower montane communities support shrubs and grasses. Where this geographic zone intersects with the ponderosa pine woodlands, the potential plant community predominantly consists of cool-season grasses, mainly muttongrass, mountain muhly, Parry's danthonia, wheatgrasses, and forbs. Common shrubs are currant, antelope bitterbrush, and mountain mahogany.

With higher elevation and increased precipitation, the woodland communities and grassland areas intermingle. The rangeland in this area predominantly is made up of Arizona fescue, Parry's danthonia, bluegrasses, needlegrasses, and mountain muhly. Under the forest canopy are scattered grasses, forbs, and shrubs. Common to the area are shrubs such as grouse whortleberry, common juniper, kinnikinnick, and russet buffaloberry.

Proper grazing use is one of the major management concerns on rangeland. An effective grazing method is time control: grazing periods are short and the recovery periods are long enough to allow vegetation to stay healthy and competitive. Grazing should be controlled so that the kinds and amounts of plants that make up the potential plant community are maintained.

Deferment of grazing during the growing season of key forage plants helps to improve or maintain the condition of rangeland by allowing the plants to produce seed. In wetter areas along streams and riparian corridors, deferred grazing methods help grasses and grass-like plants to grow and out-compete invading species of lesser quality and use.

Ecological Sites and Characteristic Native Vegetation

In areas that have similar climate and topography, differences in the kind and amount of rangeland and forest understory vegetation, and the tree species are closely related to the kind of soil. Effective management is based upon the relationship between the soils and vegetation and water.

Table 5 shows, for each soil, the ecological site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic native vegetation; the average percentage of each species for rangeland and for forest understory vegetation; and common trees and their canopy cover percentage. An explanation of the column headings in Table 5 follows.

An *ecological site* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff, that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site is typified by an association of species that differs from that of other ecological sites in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Total production is the amount of dry-weight vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percentage of air-dry moisture content.

Characteristic native vegetation consists of the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil is listed by common name. Under *composition*, the expected percentage of the total annual production of rangeland and forest understory vegetation is given for each species making up the characteristic native vegetation. The amount that can be used as forage depends upon the kinds of grazing animals and on the grazing season.

Common trees are those tree species that naturally occur on a soil.

Canopy cover is the percentage of coverage (canopy) attributed to a specific plant species.

Recreation

The soils of the survey area are rated in Tables 6 and 7 according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. 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, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in Tables 6 and 7 can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp 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 ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones.

The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Forest Management

In Tables 8 through 12, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate,* and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet at (http://nsscnt.nssc.nrcs.usda.gov/nfm/).

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result

of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Ratings in the column *hazard of off-road or off-trail erosion* are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as slight, moderate, severe, or very severe. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance; and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *suitability for use of harvesting equipment* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical site preparation (surface)* are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 1 foot is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation (deep)* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Tables 13 and 14 show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very

favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

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 soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table,

ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. 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 onsite 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, in site selection, and in 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 particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, 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 kinds 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 evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the 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.

Sanitary Facilities

Tables 15 and 16 show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

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 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and

public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

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 of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils

in the steeper areas and cause difficult seepage problems.

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 offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 17 and 18 give information about the soils as potential sources of gravel, sand, topsoil, reclamation material, and roadfill. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* 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 17, only the likelihood of finding material in suitable quantity 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 gravel or sand are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains gravel or sand, the soil is considered a likely source regardless of thickness. The assumption is that the gravel or sand layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of gravel and sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of gravel or sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

The soils are rated *good, fair,* or *poor* as potential sources of roadfill, reclamation material, and topsoil. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of roadfill, reclamation material, or topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

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 high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its

strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

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

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. Soil properties are ascertained by field examination of the soils and by 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 to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics. These results are reported in Table 20.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on 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 to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 19 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

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 15 percent or more, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches 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, CL-ML.

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 in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-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.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in Table 19.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches 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 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 particle-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 generally omitted in the table.

Physical and Chemical Properties

Table 20 shows estimates of some physical and chemical characteristics and features that affect soil behavior. These estimates are given for the 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.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In Table 20, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to 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 earthmoving 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 $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each 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. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (K_{sat}) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (K_{sat}). The estimates in the table indicate the rate of water movement, in inches per hour, 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 soil layer. The capacity varies, depending on soil properties that affect retention of water. 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.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3

percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In Table 20, 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.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in Table 20 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of several factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual 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 susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

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

Water Features

Table 21 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are

thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of 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 drained or well drained soils that have moderately fine texture 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 of moderately fine texture 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 clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 21 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 21 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 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); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information 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.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. 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.

Soil Features

Table 22 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal

properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for 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 and highly structured, clayey 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 to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes 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 or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete 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 also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 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. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that 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 that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (USDA, 1999) and “Keys to Soil Taxonomy” (USDA, 1998) and in the “Soil Survey Manual” (USDA, 1993).

If soils are wet enough 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 used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 1998).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This

depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, 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 at least one of the approved indicators is present.

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 1998).

6—Cumulic Cryaquolls, 0 to 3 percent slopes
62—Typic Cryaquents-Cumulic Cryaquolls complex, 0 to 3 percent slopes

Map units that are made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators. A portion of these map units, however, may include hydric soils. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils.

3—Breece gravelly sandy loam, 3 to 40 percent slopes
19—Kittredge-Guanella complex, 3 to 9 percent slopes
20—Kittredge-Guanella complex, 9 to 30 percent slopes
27—Lone Rock-Breece gravelly sandy loams, 2 to 9 percent slopes
59—Trag gravelly sandy loam, 3 to 15 percent slopes
60—Troutdale-Rogert-Kittredge complex, 3 to 15 percent slopes
61—Troutdale-Sprucedale gravelly sandy loams, 3 to 15 percent slopes
64—Water

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). 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 23 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Twelve 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 Alfisol.

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 Cryalf (*Cry*, meaning cold, plus *alf*, from Alfisol).

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; type of saturation; 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 Glossocryalf (*Glosso*, meaning degraded argillic horizon, plus *cryalf*, the suborder of the Alfisols that has a cryic temperature regime).

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup 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 taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Ustic* identifies the subgroup that borders an ustic soil moisture regime. An example is Ustic Glossocryalf.

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, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, paramicaceous Ustic Glossocryalf.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey 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, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 1998). Unless otherwise indicated, colors in the descriptions are for moist soils. Following the pedon description is the range of important characteristics of the soils in the series.

Arents

Depth class: very deep
Drainage class: somewhat excessively drained
Slowest permeability class: moderately rapid
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Parent material: mine spoil or earthy fill

Elevation: 7,400 to 9,000 feet
Slope: 5 to 80 percent
Climatic data:
Average annual precipitation: 16 to 20 inches
Average annual temperature: 36 to 45 degrees F.
Frost-free period: 40 to 85 days

Taxonomic class: Arents

Typical Pedon

Map unit in which located: Arents very cobbly loamy coarse sand, in an area of Arents-Dumps, mine complex, 5 to 80 percent slopes
Location in survey area: about 600 feet east and 2,000 feet north of the southwest corner of sec. 21, T. 3 S., R. 74 W.

The soil surface is covered by about 2 percent stones.

C1—0 to 24 inches; very pale brown (10YR 7/4), very cobbly loamy coarse sand, pale brown (10YR 6/3) moist; structureless; loose; nonsticky and nonplastic; few medium, roots; many pockets of A or E horizon material; 25 percent gravel, 25 percent cobbles, and 5 percent stones; strongly acid; clear wavy boundary.
C2—24 to 28 inches; brown (10YR 5/3) gravelly sandy loam, very dark grayish brown (10YR 3/2) aggregate color moist, with striping of yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4); moderate medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; few fine, coarse, and medium roots; many pockets of A or E horizon material; 15 percent gravel and 5 percent cobbles; moderately acid; clear wavy boundary.
C3—28 to 33 inches; light yellowish brown (10YR 6/4) and brownish yellow (10YR 6/6) extremely cobbly loamy sand, brown (10YR 5/3) moist; single grained; loose, nonsticky and nonplastic; 35 percent gravel, 25 percent cobbles, and 5 percent stones; very strongly acid; gradual smooth boundary.
C4—33 to 60 inches; light yellowish brown (10YR 6/4), pale yellow (2.5Y 7/4) and yellow (2.5Y 7/6) extremely cobbly loamy sand, light yellowish brown (10YR 6/4) and light olive brown (2.5Y 5/4)moist; single grained; loose, nonsticky and nonplastic; 30 percent gravel, 35 percent cobbles, and 15 percent stones; extremely acid.

Range in Characteristics

Soil moisture: udic bordering on ustic

Particle-size control section (weighted average):
Rock fragment content: 15 to 80 percent

A or E horizon: Remnant horizons may be present.

Note: Many pockets of very irregularly-shaped A or E horizon material may occur throughout these layers. The horizon may exhibit 10 to 25 percent rock structure in some pedons.

C horizon:
Hue: 2.5Y to 5YR
Texture: loamy coarse sand, loamy sand, sandy loam, and sand
Clay content: 2 to 17 percent
Rock fragments: 15 to 80 percent
Reaction: extremely acid to slightly acid

Bendemeere Series

Depth class: very deep
Drainage class: well drained
Permeability: moderately rapid
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Parent material: micaeous colluvium or slope alluvium derived from igneous and metamorphic rock
Elevation: 7,200 to 10,500 feet
Slope: 15 to 70 percent
Climatic data:
Average annual precipitation: 17 to 23 inches
Average annual temperature: 37 to 41 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Lamellic Haplocryalfs

Typical Pedon

Map unit in which located: Bendemeere very gravelly sandy loam, in an area of Mammoth-Ohman-Bendemeere complex, 15 to 30 percent slopes
Location in survey area: about 1,900 feet north and 2,100 feet east of the southwest corner of sec. 23, T. 4 S., R. 72 W.

The soil surface is covered by about 1 percent stones.

Oi—0 to 1 inch; slightly decomposed needles, twigs, and bark.
A—1 inch to 3 inches; brown (10YR 5/3) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft,

very friable, nonsticky and nonplastic; many very fine roots, few fine, common medium, and few coarse roots; 32 percent gravel, 7 percent cobbles, and 7 percent stones; slightly acid; clear wavy boundary.

E—3 to 10 inches; very pale brown (10YR 7/3), gravelly coarse sandy loam, brown (10YR 5/3) moist; weak medium subangular blocks parting to weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, many fine, common medium, and few coarse roots; common visible fine and medium sand-size mica flakes; 25 percent gravel and 5 percent cobbles; moderately acid; clear wavy boundary.

E and Bt1—10 to 21 inches; 65 percent of the matrix is very pale brown (10YR 7/3) and 35 percent of the matrix is light brown (7.5YR 6/4) very cobbly coarse sandy loam, 65 percent of the matrix is brown (10YR 5/3) and 35 percent of the matrix is brown (7.5YR 5/4) moist; weak medium and fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; 1-1.5 cm. thick sandy clay loam discontinuous lamellae, reddish brown (5YR 5/4); common very fine and fine, few medium, and few coarse roots; common visible fine and medium sand-size mica flakes; 20 percent gravel, 15 percent cobbles, and 2 percent stones; moderately acid; clear wavy boundary.

E and Bt2—21 to 30 inches; 75 percent of the matrix is light brown (7.5YR 6/4) and 25 percent pink (7.5YR 7/4) very gravelly loamy coarse sand, dark grayish brown (10YR 4/2)crushed moist; structureless; loose, nonsticky and nonplastic; 1-1.5 cm. thick sandy clay loam, continuous lamellae, reddish brown (5YR 5/4) moist color and 0.5-1 cm. thick sandy clay loam discontinuous lamellae, reddish brown (5YR 5/4); few very fine, common fine, common medium, and few coarse roots; common visible fine and medium sand-size mica flakes; 25 percent gravel, 10 percent cobbles, and 2 percent stones; moderately acid; gradual wavy boundary.

Bt and E1—30 to 42 inches; pink (7.5YR 7/3) matrix is very gravelly loamy sand, brown (7.5YR 4/4) moist; structureless; loose, nonsticky and nonplastic; 50 percent of this horizon is composed of thick and faint continuous, sandy clay loam lamellae, brown (7.5YR 5/4, 4/4); few very fine, many fine, and few medium roots; common visible fine and medium sand-size mica flakes; 25 percent gravel, 10 percent cobbles, and 5 percent stones; moderately acid; clear wavy boundary.

Bt and E2—42 to 50 inches; pale brown (10YR 6/3) gravelly loamy sand, dark grayish brown (10YR 4/2) crushed moist; moderate medium subangular blocky structure; soft, friable, nonsticky and nonplastic; four 1 to 3 cm. thick discontinuous lamellae, sandy clay loam texture, color is brown (7.5YR 5/4); common very fine and fine, and few medium roots; many visible fine and medium sand-size mica flakes; 27 percent gravel; moderately acid; clear wavy boundary.

BC—50 to 62 inches; pale brown (10YR 6/3) very gravelly coarse sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; hard, friable, nonsticky and nonplastic; few very fine and common fine roots; many visible fine and medium sand-size mica flakes; 35 percent gravel, 10 percent cobbles, and 3 percent stones; 25 to 35 percent of this horizon is weathering gneiss or schist; strongly acid.

Range in Characteristics

Soil moisture: udic bordering on ustic, dry in parts of moisture control section for 55 to 65 cumulative

Average annual soil temperature: 35 to 41 degrees F.

Average summer soil temperature: 39 to 46 degrees F.

A horizon:

Hue: 10YR
Value: 3 to 6 dry, 2 to 4 moist
Chroma: 1 to 4
Texture: sandy loam and loamy sand
Clay content: 3 to 12 percent
Rock fragments: 35 to 60 percent
Reaction: slightly acid or moderately acid

E horizon:

Hue: 7.5YR or 10YR
Value: 6 or 7 dry, 4 to 6 moist
Chroma: 1 to 3
Texture: coarse sandy loam
Clay content: 3 to 10 percent
Rock fragments: 35 to 80 percent
Reaction: moderately acid or strongly acid
NOTE: Bleached sand grains may occur in blotches and wide tongues with wider dimensions at the upper reaches of the E horizons, tapering to their narrowest lower in the horizon.

E and Bt horizons:

Hue: 7.5YR to 10YR
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 1 to 4

Texture: loamy sand, sandy loam, and sandy clay loam
Clay content: 3 to 25 percent
Rock fragments: 35 to 80 percent
Reaction: moderately acid or strongly acid
NOTE: Lamellae occur, consisting of faint continuous lenses of sandy clay loam or sandy loam material, clay percentage ranging from 12 to 25 percent. The thickness of these lamellae are less than 4 inches total.

Breece Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderately rapid
Landform: alluvial fans, drainageways, mountain slopes
Position on landform: toeslopes
Parent material: alluvium and slope alluvium derived from igneous and metamorphic rock
Elevation: 7,200 to 8,600 feet
Slope: 0 to 40 percent
Climatic data:
Average annual precipitation: 17 to 20 inches
Average annual temperature: 41 to 45 degrees F.
Frost-free period: 70 to 100 days

Taxonomic class: Coarse-loamy, mixed, superactive, frigid Pachic Haplustolls

Typical Pedon

Map unit in which located: Breece gravelly sandy loam, in an area of Lininger-Breece gravelly sandy loams, 3 to 12 percent slopes
Location in survey area: about 1,900 feet south and 900 feet east of the northwest corner of sec. 13, T. 4 S., R. 72 W.

A1—0 to 7 inches; dark grayish brown (10YR 4/2), gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and many fine roots; 20 percent gravel; slightly acid; clear wavy boundary.
A2—7 to 20 inches; dark grayish brown (10YR 4/2), gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine roots; 20 percent gravel; slightly acid; clear wavy boundary.
C1—20 to 42 inches; brown (10YR 5/3) gravelly coarse sandy loam, dark brown (10YR 3/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; 20 percent gravel and 1 percent cobbles; moderately acid; gradual wavy boundary.
C2—42 to 72 inches; pale brown (10YR 6/3) gravelly sandy loam, brown (10YR 4/3) moist; massive; soft, friable, slightly sticky and nonplastic; few very fine roots; 15 percent rock structure remaining as the matrix; 15 percent gravel and 3 percent cobbles; moderately acid.

Range in Characteristics

Soil moisture: typic ustic
Average annual soil temperature: 32 to 46 degrees F.
Average summer soil temperature: 58 to 68 degrees F.
Depth to calcium carbonate: 40 inches or greater
Thickness of the mollic epipedon: 16 to 42 inches

A horizon:
Hue: 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: sandy loam
Clay content: 10 to 17 percent
Rock fragments: 10 to 25 percent
Kind: dominantly gravel-size
Reaction: moderately acid to neutral
NOTE: Stone (lag) lines may occur below 24 inches.

C horizon:
Hue: 10YR
Texture: sandy loam
Clay content: 5 to 15 percent
Rock fragments: 10 to 30 percent
Kind: dominantly gravel-size
Reaction: or moderately acid or slightly acid
NOTE: In some pedons, this horizon may exhibit 10 to 35 percent remnant rock structure.

Bullwark Family

Depth class: moderately deep, very deep
Drainage class: well drained
Slowest permeability class: moderately rapid
Landform: mountain slopes, ridges
Position on landform: backslopes, footslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Elevation: 8,100 to 9,700 feet
Slope: 9 to 60 percent
Climatic data:
Average annual precipitation: 19 to 23 inches

Average annual temperature: 37 to 41 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Lamellic Eutrocryepts

Typical Pedon

Map unit in which located: Bullwark family gravelly sandy loam, in an area of Grimstone-Bullwark family complex, 9 to 30 percent slopes
Location in survey area: about 3 miles south of Central City, Colorado, about 2,625 feet east and 1,055 feet north of the southwest corner of section 18, T. 3 S., R. 72 W.

The soil surface is covered by about 1 percent stones.

Oi—0 to 1 inch; slightly decomposed needles, twigs, bark, and cones.
A—1 inch to 4 inches; brown (10YR 5/3) gravelly sandy loam, brown (10YR 4/3) moist; weak fine granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine, common medium, and few coarse roots; common visible fine and medium sand-size mica flakes; 15 percent gravel, 1 percent cobbles, and 1 percent stones; moderately acid; abrupt smooth boundary.
E—4 to 22 inches; light brownish gray (10YR 6/2) gravelly sandy loam, grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; common visible fine and medium sand-size mica flakes; 20 percent gravel and 5 percent cobbles; moderately acid; clear smooth boundary.
Bt and E—22 to 40 inches; 75 percent of the matrix is brown (10YR 5/3) and 25 percent light brownish gray (10YR 6/2) in a blotchy pattern, very gravelly sandy loam, 75 percent of the matrix is brown (10YR 4/3) and 25 percent of the matrix is grayish brown (10YR 5/2) moist; weak medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; (12) 0.5 to 1.5 cm. thick heavy sandy clay loam continuous lamellae with common (2 to 5percent) clay bridging, brown (7.5YR 4/4) and dark yellowish brown (10YR 4/4) and grayish brown (10YR 5/2) silt caps on tops of coarse fragments; few very fine, common fine, and few medium roots; common to many visible fine and medium sand-size mica flakes; 35 percent gravel, 5 percent cobbles, and 1 percent stones; moderately acid; gradual wavy boundary.
BC—40 to 63 inches; brown (10YR 5/3) very gravelly loamy sand, brown (10YR 4/3) moist; single grained; loose, nonsticky and nonplastic; few fine and medium roots; many visible fine and medium sand mica flakes; 35 percent gravel, 2 percent cobbles, and 2 percent stones; moderately acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Depth to paralithic contact: 20 inches to greater than 60 inches
Thickness of the lamellae: less than 6 inches

A horizon:
Hue: 10YR
Value: 3 to 6 dry, 2 to 4 moist
Chroma: 1 to 4
Texture: sandy loam or coarse sandy loam
Clay content: 8 to 16 percent
Rock fragments: 10 to 55 percent
Kind: dominantly gravel-size
Reaction: moderately acid or slightly acid

E horizon:
Hue: 7.5YR or 10YR
Value: 6 or 7 dry, 4 or 5 moist
Chroma: 1 to 3
Texture: sandy loam and coarse sandy loam
Clay content: 8 to 16 percent
Rock fragments: 20 to 65 percent
Reaction: strongly acid or moderately acid

Bt and E horizons:
Hue: 7.5YR or 10YR
Value: 5 or 7 dry, 4 to 6 moist
Chroma: 2 to 4
Texture: sandy loam
Rock fragments: 35 to 65 percent
Thickness of lamellae: more than 6 inches
Texture of lamellae: sandy clay loam or sandy loam
Clay content of lamellae: 12 to 27 percent
Reaction: strongly acid or moderately acid

BC horizon: (if present)
Hue: 7.5YR or 10YR
Texture: sandy loam, loamy sand, and coarse sandy loam
Clay content: 1 to 8 percent
Rock fragments: 35 to 75 percent
Rock structure may be present in some pedons.
Reaction: very strongly acid to moderately acid
NOTE: Thin lenses of lamellae may exist in some pedons, but average less than 4 inches thick.

Cathedral Series

Depth class: shallow
Drainage class: well drained
Slowest permeability class: moderate
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Elevation: 7,200 to 9,200 feet
Slope: 3 to 70 percent
Climatic data:
Average annual precipitation: 16 to 20 inches
Average annual temperature: 41 to 46 degrees F.
Frost-free period: 70 to 100 days

Taxonomic class: Loamy-skeletal, paramicaceous, frigid Lithic Haplustolls

Typical Pedon

Map unit in which located: Cathedral very cobbly sandy loam, in an area of Resort-Cathedral-Rubble land complex, 30 to 60 percent slopes
Location in survey area: about 750 feet west and 700 feet south of the northeast corner of sec. 11, T. 4 S., R. 72 W.

The soil surface is covered by about 2 percent stones.

A—0 to 3 inches; very dark gray (10YR 3/1) very cobbly sandy loam, black (10YR 2/1) moist; common very fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine roots; common mica flakes visible as fine and very fine sand-size particles; 20 percent gravel, 10 percent stones, and 25 percent cobbles; neutral; clear smooth boundary.
AB—3 to 6 inches; brown (10YR 4/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; moderate fine and medium granular structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common mica flakes visible as fine and very fine sand-size particles; 40 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.
Bw—6 to 11 inches; dark yellowish brown (10YR 4/4) very gravelly sandy loam, brown (10YR 4/3) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine roots; many mica flakes visible as fine and very fine sand-size particles; 30 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.
R—11 to 15 inches; granite.

Range in Characteristics

Soil moisture: typic ustic
Average annual soil temperature: 41 to 47 degrees F.
Average summer soil temperature: 59 to 64 degrees F.
Depth to lithic contact: 10 to 20 inches
Thickness of the mollic epipedon: 4 to 9 inches

A and AB horizons:
Hue: 7.5YR or 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: sandy loam
Clay content: 6 to 16 percent
Rock fragments: 30 to 85 percent

Bw horizon:
Hue: 10YR or 2.5Y
Value: 4 to 7 dry, 2 to 4 moist
Chroma: 1 to 4
Texture: sandy loam
Clay content: 5 to 16 percent
Rock fragments: 40 to 85 percent

Cumulic Cryaquolls

Depth class: very deep
Drainage class: poorly drained
Slowest permeability class: moderate
Landform: Drainageways
Parent material: alluvium derived from igneous and metamorphic rock
Elevation: 7,400 to 8,600 feet
Slope: 0 to 3 percent
Climatic data:
Average annual precipitation: 17 to 19 inches
Average annual temperature: 36 to 39 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Cumulic Cryaquolls

Typical Pedon

Map unit in which located: Cumulic Cryaquolls, 0 to 3 percent slopes
Location in survey area: about 80 feet north and 2,550 west of the southeast corner of sec. 10, T. 5 S., R. 72 W.

A—0 to 6 inches; very dark grayish brown (10YR 3/2) loam, very dark brown (10YR 2/2) moist; moderate medium granular structure and moderate very fine subangular blocky; slightly hard, friable, slightly sticky and slightly plastic;

many very fine roots; 2 percent gravel; slightly acid; gradual smooth boundary.

Ag1—6 to 14 inches; very dark grayish brown (10YR 3/2) loam, black (10YR 2/1) moist; few faint iron concentrations, grayish brown (2.5Y 5/2); weak medium prismatic structure parting to weak medium subangular blocky; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots, common fine tubular pores; 1 percent gravel and 10 percent cobbles; slightly acid; gradual smooth boundary.

Ag2—14 to 21 inches; brown (10YR 4/3) loam, dark brown (7.5YR 3/2) moist; many fine prominent iron concentrations, dark reddish brown (5YR 3/3); weak medium subangular blocky structure and weak fine subangular blocky; soft, very friable, slightly sticky and slightly plastic; common very fine roots; 2 percent gravel; slightly acid; abrupt smooth boundary.

2C—21 to 64 inches; brown (7.5YR 4/4) very gravelly sand, dark brown (7.5YR 3/4) moist; single grain; loose, nonsticky and nonplastic; 40 percent gravel and 3 percent cobbles; slightly acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Depth to lithologic discontinuity: 20 to 38 inches
Depth to mottling: 6 to 14 inches
Depth to seasonal water table: 6 inches from April to September
Reaction: moderately acid to neutral

A horizons:
Hue: 10YR or 2.5Y
Value: 2 to 5 moist or dry
Chroma: 1 or 2
Texture: loam or sandy loam
Clay content: 8 to 27 percent

AC horizon: (if present)
Thickness of the horizon: 0 to 15 inches

2C horizon:
Hue: 10YR or 2.5Y
Texture: sand
Clay content: 2 to 7 percent
Rock fragments: 35 to 60 percent

Gateview Taxadjunct

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderately rapid
Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Elevation: 8,000 to 9,600 feet
Slope: 30 to 45 percent
Climatic data:
Average annual precipitation: 17 to 23 inches
Average annual temperature: 36 to 39 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Pachic Haplocryolls

Typical Pedon

Map unit in which located: Gateview gravelly sandy loam, in an area of Gateview-Kittredge complex, 20 to 45 percent slopes
Location in survey area: about 200 feet south and 1,200 feet west of the northeast corner of sec. 16, T. 3 S., R. 73 W.

A1—0 to 7 inches; dark grayish brown (10YR 4/2), gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine, and many fine roots; common very fine and fine sand-size mica flakes; 20 percent gravel and 10 percent cobbles; slightly acid; clear wavy boundary.

A2—7 to 18 inches; dark grayish brown (10YR 4/2), very cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; common very fine and fine, and few coarse roots; common very fine and fine sand-size mica flakes; 25 percent gravel and 20 percent cobbles; slightly acid; clear wavy boundary.

BC—18 to 42 inches; yellowish brown (10YR 5/4) very cobbly sandy loam, brown (10YR 4/3) moist; weak coarse subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common fine sand-size mica flakes; 20 percent gravel, 30 percent cobbles, and 5 percent stones; moderately acid; gradual wavy boundary.

C—42 to 60 inches; pale brown (10YR 6/3) very cobbly loamy sand, brown (10YR 4/3) moist; single grained; loose, nonsticky and nonplastic; few very fine roots; 15 percent rock structure remaining as the matrix; 15 percent gravel, 30 percent angular cobbles, and 5 percent stones; moderately acid.

Range in Characteristics

Soil moisture: udic bordering on ustic

Average annual soil temperature: 40 degrees F.
Average summer soil temperature: 47 degrees F.
Thickness of the mollic epipedon: 16 to 40 inches

A horizon:
Hue: 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 or 2
Texture: sandy loam
Clay content: 10 to 17 percent

B horizon: if present
Hue: 10YR
Value: 4 or 5 dry, 2 to 4 moist
Chroma: 2 or 3
Texture: sandy loam
Clay content: 8 to 17 percent
Rock fragments: 35 to 80 percent
Reaction: slightly acid or moderately acid
Stone lines may occur below: 24 inches

C horizon: if present
Hue: 7.5YR or 10YR
Value: 5 or 6 dry, 4 to 5 moist
Chroma: 2 to 4
Texture: loamy sand or sandy loam
Clay content: 5 to 15 percent
Rock fragments: 40 to 80 percent
Some pedons may exhibit: 10 to 35 percent rock structure

NOTE: The Gateview soils in this survey area are taxadjuncts because of paramicaceous mineralogy. This difference, however, does not significantly affect the use, management, or interpretations of the soils.

Grimstone Series

Depth class: moderately deep
Drainage class: well drained
Slowest permeability class: moderate
Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Elevation: 7,000 to 9,700 feet
Slope: 9 to 60 percent
Climatic data:
Average annual precipitation: 17 to 24 inches
Average annual temperature: 37 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Fine-loamy, paramicaceous Ustic Glossocryalfs

Typical Pedon

Map unit in which located: Grimstone sandy loam, in an area of Grimstone-Bullwark family complex, 9 to 30 percent slopes
Location in survey area: about 2,495 feet east and 1,000 feet north of the southwest corner of sec. 18, T. 3 S., R. 72 W.

Oi—0 to 1 inch; slightly decomposed needles, twigs, bark and cones.
A—1 inch to 4 inches; dark grayish brown (10YR 4/2) sandy loam, black (10YR 2/1) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very and fine, few medium and coarse roots; few visible mica flakes as fine and very fine sand-size material; 5 percent gravel, neutral; clear smooth boundary.
E—4 to 19 inches; pale brown (10YR 6/3) gravelly sandy loam, yellowish brown (10YR 5/4) moist; weak fine and medium granular structure; soft, very friable, nonsticky and slightly plastic; common fine and few medium roots; few visible mica flakes as fine and very fine sand-size material; 25 percent gravel; slightly acid; clear wavy boundary.
E/B—19 to 25 inches; 80 percent of the matrix is pale brown (10YR 6/3) and 20 percent brown (7.5YR 5/4), loam, 80 percent is yellowish brown (10YR 5/4) and 20 percent is brown (10YR 4/3) moist; weak medium and fine subangular blocks that part to weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; along ped faces streaks of very pale brown 10YR 7/3 colored coatings; few fine and medium roots; common visible mica flakes as fine and very fine sand-size material; few faint discontinuous clay films in and around pores; 10 percent gravel and 2 percent cobbles; slightly acid; clear wavy boundary.
Bt—25 to 33 inches; dark yellowish brown (10YR 4/4) loam, dark brown (7.5YR 3/3) moist; moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few fine, medium, and coarse roots; common visible mica flakes as fine and very fine sand-size material; common (26percent) moderately thick clay films in and around pores; 10 percent gravel and 1 percent cobbles; slightly acid; clear wavy boundary.
Cr—33 to 36 inches; fractured schist and granite.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 37 to 41 degrees F.

Average summer soil temperature: 49 to 51 degrees F.
Depth to argillic horizon: 14 to 28 inches
Depth to paralithic contact: 20 to 39 inches
Rock fragment content: 5 to 35 percent

A horizon:
Hue: 7.5YR or 10YR
Value: 4 to 6 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: sandy loam
Clay content: 8 to 15 percent
Reaction: slightly acid or neutral

E horizon:
Hue: 7.5YR or 10YR
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 1 to 3
Texture: sandy loam, loamy sand
Clay content: 5 to 18 percent
Reaction: moderately acid or slightly acid

E/B horizon:
Hue: 7.5YR or 10YR
Reaction: strongly acid to slightly acid

Bt horizons:
Hue: 5YR to 10YR
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 1 to 4
Texture: loam, sandy clay loam
Clay content: 18 to 35 percent
Reaction: strongly acid to slightly acid

Guanella Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderate
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Parent material: micaceous colluvium and slope alluvium derived from igneous and metamorphic rock
Elevation: 7,600 to 9,000 feet
Slope: 3 to 30 percent
Climatic data:
Average annual precipitation: 18 to 24 inches
Average annual temperature: 37 to 41 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Coarse-loamy, paramicaceous Pachic Haplocryolls

Typical Pedon

Map unit in which located: Guanella gravelly loam, in an area of Kittredge-Guanella complex, 9 to 30 percent slopes
Location in survey area: about 1,200 feet west and 75 feet south of the northeast corner of sec. 28, T. 4 S., R. 72 W.

A1—0 to 6 inches; dark gray (10YR 4/1) gravelly loam, very dark gray (10YR 3/1) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, and common fine and medium roots; common fine sand-size mica flakes; 10 percent gravel, 5 percent cobbles, and 2 percent stones; slightly acid; clear wavy boundary.
A2—6 to 18 inches; dark gray (10YR 4/1), gravelly loam, black (10YR 2/1) moist; moderate to strong fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many very fine, common fine, few medium and coarse roots; common fine sand-size mica flakes; 12 percent gravel and 5 percent cobbles; slightly acid; clear wavy boundary.
A3—18 to 29 inches; grayish brown (10YR 5/2) loam, very dark gray (10YR 3/1) moist; moderate fine subangular blocky structure; soft, very friable, slightly sticky and nonplastic; few very fine and common fine roots; common fine and medium sand-size mica flakes; 10 percent gravel and 2 percent cobbles; slightly acid; abrupt wavy boundary.
C1—29 to 48 inches; light yellowish brown (10YR 6/4) gravelly loamy sand, yellowish brown (10YR 5/4) moist; single grained; loose, nonsticky and nonplastic; common fine distinct iron masses in the matrix, moist, soft, clear, strong brown (7.5YR 4/6) and few, medium distinct iron masses in the matrix, moist, soft, diffuse, brown (7.5YR 4/4); few fine and medium roots; common fine and medium sand-size mica flakes; 20 percent gravel; slightly acid; gradual smooth boundary.
C2—48 to 62 inches; brown (10YR 5/3) cobbly loamy sand, brown (10YR 4/3) moist; single grained; loose, nonsticky and nonplastic; many medium distinct iron masses in the matrix, moist, soft, diffuse, brown (7.5YR 4/4); few fine and medium roots; many fine and medium sand-size mica flakes; 10 percent gravel, 10 percent cobbles, and 2 percent stones; moderately acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 37 to 42 degrees F.
Average summer soil temperature: 46 to 55 degrees F.
Thickness of the mollic epipedon: 16 to 50 inches

A horizon:
Hue: 7.5YR or 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: loam or sandy loam
Clay content: 3 to 18 percent
Rock fragments: 5 to 35 percent
Reaction: moderately acid to neutral

C horizon:
Hue: 7.5YR or 10YR
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 2 to 4
Texture: sandy loam, coarse sandy loam, or loamy sand
Clay content: 3 to 18 percent
Rock fragments: 5 to 35 percent
Reaction: moderately acid to neutral

Herbman Taxadjunct

Depth class: shallow
Drainage class: well drained
Slowest permeability class: moderately rapid
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Elevation: 7,600 to 9,200 feet
Slope: 3 to 70 percent
Climatic data:
Average annual precipitation: 18 to 24 inches
Average annual temperature: 41 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Sandy-skeletal, paramicaceous, shallow Ustic Haplocryolls

Typical Pedon

Map unit in which located: Herbman gravelly sandy loam, 3 to 9 percent slopes
Location in survey area: about 2,410 feet east and 975 feet south of the northwest corner of sec. 15, T. 2 S., R. 73 W.

The soil surface is covered by about 1 percent stones.

A1—0 to 10 inches; brown (10YR 5/3) gravelly sandy loam, dark brown (10YR 3/3) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common mica fragments as fine and very fine sand-size material; common very fine and many fine roots; 10 percent gravel, 5 percent cobbles, and 1 percent stones; slightly acid; clear smooth boundary.

AC—10 to 17 inches; pale brown (10YR 6/3) very gravelly loamy sand, brown (10YR 4/3) moist; single grained; loose, nonsticky and nonplastic; few very fine and common fine roots; many mica fragments as fine and very fine sand-size material; 30 percent gravel, 5 percent cobbles, and 5 percent stones; slightly acid; gradual wavy boundary.

Cr—17 to 24 inches; fractured schist; rippable.

Range in Characteristics

Soil moisture: udic bordering on ustic
Depth to paralithic contact: 10 to 20 inches
Thickness of the surface layer: 4 to 12 inches
Reaction: slightly acid or neutral

A horizon:
Hue: 10YR
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: sandy loam
Clay content: 8 to 15 percent
Rock fragments: 10 to 65 percent

AC horizon:
Hue: 7.5YR or 10YR
Clay content: 1 to 18 percent
Rock fragments: 35 to 80 percent

NOTE: Herbman is a taxadjunct in map units 12, 13, and 14 because of the sandy-skeletal particle-size control section. This difference, however, does not significantly affect the use, management, or interpretations of the soils. The Herbman component in map unit 55 is within the series concept and is a match unit from the adjoining Golden Area, Colorado. The official classification of Herbman is loamy-skeletal, paramicaceous, shallow Ustic Haplocryolls.

Hiwan Series

Depth class: very shallow, shallow
Drainage class: well drained
Slowest permeability class: moderately rapid, rapid
Landform: mountain slopes, ridges
Position on landform: backslopes, shoulders
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Elevation: 7,000 to 9,500 feet
Slope: 30 to 70 percent

Climatic data:
Average annual precipitation: 17 to 24 inches
Average annual temperature: 39 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Sandy-skeletal, paramicaceous Lithic Cryorthents

Typical Pedon

Map unit in which located: Hiwan extremely cobbly sandy loam, in an area of Hiwan-Rock outcrop-Bendemeere complex, 30 to 70 percent slopes
Location in survey area: about 1,100 feet south and 300 feet west of the northeast corner of sec. 2, T. 4 S., R. 72 W.

The soil surface is covered by about 4 percent stones.

Oi—0 to 1 inch; twigs, needles, and bark.
A—1 inch to 3 inches; grayish brown (10YR 5/2) extremely cobbly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, fine, and few medium roots; common mica fragments as fine and very fine sand-size material; 30 percent gravel, 40 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.
C—3 to 13 inches; light gray (10YR 7/2) extremely cobbly loamy sand, grayish brown (10YR 5/2) moist; single grain; loose, nonsticky and nonplastic; few fine and medium roots; common mica fragments as fine and very fine sand-size material; 35 percent gravel and 40 percent cobbles; slightly acid; abrupt smooth boundary.
R—13 to 17 inches; hard granite.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 41 to 45 degrees F.
Average summer soil temperature: 45 to 47 degrees F.
Depth to lithic contact: 7 to 20 inches
Thickness of the surface layer: 1 to 3 inches
Reaction: moderately acid or slightly acid

A horizon:
Hue: 10YR
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 2 or 3
Texture: sandy loam or loamy sand
Clay content: 3 to 12 percent
Rock fragments: 15 to 75 percent

C horizon:
Hue: 7.5YR or 10YR
Clay content: 2 to 5 percent
Rock fragments: 35 to 80 percent

Ivywild Series

Depth class: moderately deep
Drainage class: somewhat excessively drained
Slowest permeability class: moderately rapid
Landform: mountain slopes
Position on landform: backslopes
Parent material: micaceous colluvium and/or slope alluvium derived from igneous and metamorphic rock
Elevation: 7,600 to 9,900 feet
Slope: 15 to 60 percent
Climatic data:
Average annual precipitation: 17 to 23 inches
Average annual temperature: 37 to 41 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Ustic Dystrocryepts

Typical Pedon

Map unit in which located: Ivywild very gravelly loamy sand, in an area of Ivywild-Mammoth-Legault complex, 30 to 60 percent slopes
Location in survey area: about 2,200 feet south and 1,500 feet west of the northeast corner of sec. 18, T. 4 S., R. 72 W.

Oi—0 to 1 inch; needles, twigs, and pine cones.
E—1 inch to 8 inches; pink (7.5YR 7/4), very gravelly loamy sand, dark yellowish brown (10YR 4/4) moist; weak fine granular structure; loose, nonsticky and nonplastic; few coarse, medium; common visible mica fragments as fine and very fine sand-size material; common very fine, few fine, medium, and coarse roots; bleached light gray (10YR 7/2) and very pale brown (10YR 7/3) very fine sand and fine sand grains; 40 percent gravel, 6 percent cobbles, and 1 percent stones; strongly acid; clear smooth boundary.
B/E—8 to 13 inches; 85 percent of matrix is brown (7.5YR 5/4) and 15 percent of matrix is pink (7.5YR 7/4) very gravelly loamy sand, brown (7.5YR 4/4) moist; moderate and weak fine granular structure; loose, nonsticky and nonplastic; common very fine, few fine and medium roots; many visible mica fragments as fine and very fine sand-size material; 50 percent

gravel, 5 percent cobbles, and 1 percent stones; very strongly acid; clear wavy boundary.

Bw—13 to 24 inches; light brown (7.5YR 6/4) extremely gravelly coarse sandy loam, strong brown (7.5YR 5/6) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common visible mica fragments as fine and very fine sand-size material; 55 percent gravel, 10 percent cobbles, and 1 percent stones; 20 to 25 percent residual rock structure in the lower part of horizon; very strongly acid; clear wavy boundary.

Cr—24 to 31 inches; weathered micaceous schist and granite; 75 percent rock structure remaining; sandy material in cracks.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 40 to 46 degrees F.
Average annual summer soil temperature: 46 to 50 degrees F.
Depth to paralithic contact: 20 to 34 inches.
Base saturation: ranges from 25 to 55 percent in the texture control section

E horizon:
Hue: 7.5YR or 10YR
Value: 5 to 7 dry, 3 or 4 moist
Chroma: 2 to 4
Texture: loamy sand or sandy loam
Clay content: 3 to 12 percent
Rock fragments: 25 to 65 percent
Reaction: very strongly acid or strongly acid

Bw horizon:
Hue: 5YR to 10YR
Value: 4 to 7 dry, 3 to 5 moist
Chroma: 4 to 6
Texture: coarse sandy loam or sandy loam
Clay content: 7 to 12 percent
Rock fragments: 35 to 80 percent
Reaction: very strongly acid or strongly acid
NOTE: Silicate clays may be present in discontinuous lamellae or in pockets.

Kataka Series

Depth class: moderately deep
Drainage class: well drained
Slowest permeability class: moderately slow
Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Elevation: 7,200 to 8,600 feet
Slope: 30 to 70 percent
Climatic data:
Average annual precipitation: 16 to 20 inches
Average annual temperature: 41 to 43 degrees F.
Frost-free period: 70 to 100 days

Taxonomic class: Loamy-skeletal, paramicaceous, frigid Typic Argiustolls

Typical Pedon

Map unit in which located: Kataka very gravelly loam, in an area of Kataka-Resort-Rock outcrop complex, 30 to 70 percent slopes
Location in survey area: about 500 feet south and 250 east of the northwest corner of sec. 1, T. 4 S., R. 73 W.

The soil surface is covered by about 5 percent cobbles and 1 percent stones.

A1—0 to 5 inches; dark brown (10YR 3/3) very gravelly loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine, fine and medium, and few coarse roots; few mica flakes as fine and very fine sand-size particles; 35 percent gravel, 10 percent cobbles, and 1 percent stones; neutral; clear smooth boundary.

A2—5 to 10 inches; brown (10YR 5/3) very gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, and few medium roots; few mica flakes as fine and very fine sand-size particles; 30 percent gravel, 10 percent cobbles, and 5 percent stones; neutral; clear irregular boundary.

Bt1—10 to 18 inches; brown (7.5YR 5/4) very cobbly clay loam, yellowish brown (10YR 5/4) moist; moderate fine subangular blocky structure; slightly hard, firm, sticky and plastic; common faint clay films on vertical faces of peds; few mica flakes as fine and very fine sand-size particles; common very fine and fine, and few medium roots; 20 percent gravel, 15 percent cobbles, and 10 percent stones; neutral; abrupt wavy boundary.

Bt2—18 to 31 inches; reddish yellow (7.5YR 6/6) extremely stony clay loam, yellowish red (5YR 4/6) moist; weak coarse subangular blocky structure; very hard, firm, sticky and plastic; common very fine and fine roots; common, faint clay films on vertical faces of peds; common, mica flakes as fine and very fine sand-size particles; 30 percent gravel, 25 percent cobbles,

and 25 percent stones; slightly acid; clear irregular boundary.

Cr—31 to 38 inches; cracked and weathered schist.

Range in Characteristics

Soil moisture: typic ustic
Average annual soil temperature: 38 to 45 degrees F.
Average summer soil temperature: 55 to 66 degrees F.
Depth to argillic horizon: 5 to 22 inches
Depth to paralithic contact: 20 to 40 inches
Thickness of the mollic epipedon: 10 to 15 inches

A horizon:
Hue: 7.5YR or 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: loam
Clay content: 10 to 25 percent
Rock fragments: 25 to 55 percent
Reaction: slightly acid or neutral

Bt horizon:
Hue: 5YR to 10YR
Value: 4 to 6, dry, 3 to 5 moist
Chroma: 2 to 6
Texture: stratified sandy loam to clay loam
Clay content: 15 to 27 percent
Rock fragments: 35 to 75 percent
Reaction: slightly acid or neutral
NOTE: In lower parts of the subsoil, dry consistencies are very hard or extremely hard.

Kittredge Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderately slow
Landform: alluvial fans, mountain slopes
Position on landform: toeslopes
Parent material: micaceous alluvium and/or slope alluvium derived from igneous and metamorphic rock
Elevation: 7,600 to 9,600 feet
Slope: 3 to 45 percent
Climatic data:
Average annual precipitation: 18 to 22 inches
Average annual temperature: 39 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Fine-loamy, paramicaceous Ustic Argicryolls

Typical Pedon

Map unit in which located: Kittredge sandy loam, in an area of Kittredge-Guanella complex, 9 to 30 percent slopes
Location in survey area: about 1,400 feet south and 1,200 feet west of the northeast corner of sec. 16, T. 3 S., R. 73 W.

A1—0 to 10 inches; brown (10YR 4/3) sandy loam, very dark grayish brown (10YR 3/2) moist, moderate medium granular structure; soft, very friable, nonsticky and slightly plastic; common very fine roots and many fine roots; common fine sand-size mica flakes; 10 percent gravel and 3 percent cobbles; slightly acid, clear smooth boundary.

Bt1—10 to 13 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate fine subangular blocky structure; slightly hard, friable, sticky and plastic; very dark grayish brown, (10YR 3/2) dark organic films on faces of peds; common very fine roots; common fine sand-size mica flakes; common faint clay films on vertical faces of peds; 10 percent gravel and 2 percent cobbles; neutral; clear smooth boundary.

Bt2—13 to 22 inches; yellowish brown (10YR 5/4) clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium prismatic structure parting to weak medium and fine subangular blocky; hard, firm, sticky and plastic; few very fine, fine and medium roots, common, faint clay films on vertical faces of peds and lining pores; common fine and medium sand-size mica flakes; 10 percent gravel; neutral; clear wavy boundary.

Bt3—22 to 28 inches; yellowish brown (10YR 5/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist, weak medium prismatic structure parting to weak medium and fine subangular blocky; slightly hard, friable, sticky and plastic; few very fine, fine and medium roots; common, faint clay films on vertical faces of peds and lining pores; common fine and medium sand-size mica flakes; 12 percent gravel; slightly acid; gradual wavy boundary.

Bt4—28 to 38 inches; brownish yellow (10YR 6/6) gravelly sandy clay loam, yellowish brown (10YR 5/4) moist, weak coarse prismatic structure; slightly hard, friable, sticky and plastic; few very fine, fine and medium roots; few, faint clay films on horizontal faces of peds; many fine and medium sand-size mica flakes; 16 percent gravel; slightly acid; gradual wavy boundary.

BC—38 to 53 inches; yellow (10YR 7/6) gravelly clay loam, yellowish brown (10YR 5/6) moist, weak coarse prismatic structure; slightly hard, friable, sticky and plastic; few very fine roots; many fine

and medium sand-size mica flakes; 17 percent gravel; slightly acid; clear wavy boundary.

C—53 to 72 inches; 60 percent yellow (10YR 7/6) and 40 percent brownish yellow (10YR 6/6) loamy sand, brownish yellow (10YR 6/6) moist; structureless; loose, nonsticky and nonplastic; many fine and medium sand-size mica flakes 5 percent gravel; moderately acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 41 to 45 degrees F.
Average summer soil temperature: 52 to 58 degrees F.
Depth to argillic horizon: 7 to 16 inches
Thickness of the mollic epipedon: 7 to 14 inches

A horizon:
Hue: 10YR
Value: 3 to 5
Chroma: 2 or 3
Texture: sandy loam
Clay content: 12 to 17 percent
Rock fragments: 0 to 15 percent
Reaction: slightly acid or neutral

Bt horizon:
Hue: 7.5YR or 10YR
Value: 3 to 5
Chroma: 3 or 4
Texture: sandy clay loam and clay loam
Clay content: 20 to 35 percent
Rock fragments: 0 to 32
Reaction: slightly acid or neutral

BC horizon:
Hue: 10YR
Value: 6 or 7 dry, 5 or 6 moist
Chroma: 4 to 6
Texture: sandy loam, sandy clay loam, and clay loam
Clay content: 18 to 30 percent
Rock fragments: 5 to 20
Reaction: slightly acid or neutral

C horizon:
Hue: 10YR
Texture: sandy loam, loamy sand
Clay content: 3 to 20 percent
Rock fragments: 5 to 35

Legault Series

Depth class: very shallow, shallow
Drainage class: well drained
Slowest permeability class: moderately rapid, rapid
Landform: mountain slopes, ridges
Position on landform: shoulders, backslopes
Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Elevation: 7,000 to 11,400 feet
Slope: 5 to 80 percent
Climatic data:
Average annual precipitation: 18 to 24 inches
Average annual temperature: 36 to 41 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Sandy-skeletal, paramicaceous, shallow Typic Cryorthents

Typical Pedon

Map unit in which located: Legault very gravelly sandy loam, 5 to 15 percent slopes
Location in survey area: about 1,400 feet west and 1,100 feet north of the southeast corner of sec. 11, T. 4 S, R. 72 W.

Oi—0 to 1 inch; slightly decomposed plant material.

A—1 inch to 5 inches; brown (10YR 4/3) very gravelly sandy loam, dark brown (10YR 3/3) moist; weak very fine subangular blocky structure parting to weak fine granular; soft, very friable, nonsticky and nonplastic; common fine and medium roots; 25 percent gravel, 10 percent cobbles, and 10 percent stones; common fine and medium sand-size mica flakes; moderately acid; clear smooth boundary.

AC—5 to 18 inches; brown (10YR 5/3) very gravelly loamy sand, brown (10YR 4/3) moist; single grain; loose, nonsticky and nonplastic; common fine and medium roots; many fine and medium sand-size mica flakes; 30 percent gravel and 10 percent cobbles; strongly acid; clear smooth boundary.

Cr—18 to 22 inches; highly weathered granite.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 41 to 44 degrees F.
Average summer soil temperature: 45 to 47 degrees F.
Depth to paralithic contact: 8 to 20 inches

A horizon:
Hue: 7.5YR or 10YR
Value: 4 to 7 dry, 3 to 6 moist
Chroma: 2 to 4
Texture: sandy loam or loamy sand
Clay content: 2 to 7 percent
Reaction: moderately acid or slightly acid

AC or C horizon:
Hue: 10YR
Texture: loamy sand, sand
Clay content: 1 to 5 percent
Rock fragments: 35 to 80 percent
Reaction: strongly acid or moderately acid

E horizon: may be present

Lininger Series

Depth class: moderately deep
Drainage class: well drained
Slowest permeability class: moderately slow
Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium and/or slope alluvium over residuum weathered from igneous and metamorphic rock
Elevation: 7,400 to 8,500 feet
Slope: 3 to 30 percent
Climatic data:
Average annual precipitation: 16 to 20 inches
Average annual temperature: 43 to 45 degrees F.
Frost-free period: 70 to 100 days

Taxonomic class: Fine-loamy, paramicaceous, frigid Typic Argiustolls

Typical Pedon

Map unit in which located: Lininger gravelly sandy loam, in an area of Lininger-Trag gravelly sandy loams, 15 to 30 percent slopes
Location in survey area: about 300 feet west and 1,300 feet south of the northeast corner of sec. 11, T. 4 S., R. 72 W.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) gravelly sandy loam, very dark brown (10YR 2/2) moist, weak fine and medium structure; soft, very friable, nonsticky and nonplastic; common very fine roots; common fine and very fine mica-size sand particles; 17 percent gravel; neutral; clear smooth boundary.
A2—3 to 9 inches; very dark grayish brown (10YR 3/2) gravelly sandy loam, very dark brown (10YR2/2) moist; weak fine and medium subangular blocky structure; slightly hard, friable, nonsticky and nonplastic; common very fine roots; few very fine tubular pores; common fine and very fine mica-size sand particles; 18 percent gravel; neutral; clear smooth.
B/A—9 to 15 inches; dark brown (10YR 3/3) and dark yellowish brown (10YR 4/4) sandy clay loam, dark brown (10YR 3/3) moist, moderate fine and medium subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine and medium roots, few very fine tubular pores; few faint clay films on ped faces and lining pores; common fine and very fine mica-size sand particles; 10 percent gravel; neutral; clear smooth.
Bt1—15 to 22 inches; brown (7.5YR 4/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist, moderate medium subangular blocky structure; hard, firm, sticky and plastic; few very fine, fine and medium roots; common very fine tubular pores; common distinct clay films on ped faces; common fine and very fine mica-size sand particles; 10 percent gravel; neutral; clear wavy boundary.
Bt2—22 to 31 inches; brown (7.5YR 4/4) sandy clay loam, dark yellowish brown (10YR 4/4) moist, weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine, fine and medium roots; few very fine tubular pores; few distinct clay films on ped faces; many fine and very fine mica-size sand particles; 10 percent gravel; neutral; clear wavy boundary.
Bt3—31 to 39 inches; brown (7.5YR 4/4) sandy clay loam, dark brown (7.5YR 3/4) moist, weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine roots; few very fine tubular pores; few faint clay films on ped faces; many fine and very fine mica-size sand particles; 10 percent gravel; neutral; clear wavy boundary.
Cr—39 to 43 inches; weathered schist and granite.

Range in Characteristics

Soil moisture: typic ustic
Average annual soil temperature: 43 to 47 degrees F.
Depth to argillic horizon: 8 to 32 inches
Depth to paralithic contact: 20 to 40 inches
Thickness of the mollic epipedon: 7 to 14 inches
Reaction: neutral or slightly acid

A horizon:
Hue: 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 2 or 3
Texture: sandy loam
Clay content: 8 to 15 percent

Bt horizons:
Hue: 7.5YR or 10YR
Value: 3 to 5 dry, 3 or 4 moist
Chroma: 2 to 4
Texture: sandy clay loam
Clay content: 20 to 28 percent
Rock fragments: 0 to 25 percent

BC horizon:
Hue: 7.5YR or 10YR
Value: 3 to 6 dry, 3 to 6 moist
Chroma: 2 to 4
Rock fragments: 0 to 35 percent

C horizon: may or may not be present

Lone Rock Series

Depth class: very deep
Drainage class: somewhat excessively drained
Slowest permeability class: moderately rapid
Landform: alluvial fans, terraces, mountain slopes
Position on landform: footslopes
Parent material: alluvium, colluvium, and/or slope alluvium derived from igneous and metamorphic rock
Elevation: 7,700 to 8,500 feet
Slope: 2 to 50 percent
Climatic data:
Average annual precipitation: 16 to 20 inches
Average annual temperature: 41 to 45 degrees F.
Frost-free period: 70 to 100 days

Taxonomic class: Sandy-skeletal, mixed, frigid Typic Haplustolls

Typical Pedon

Map unit in which located: Lone Rock gravelly sandy loam, in an area of Lone Rock-Breece gravelly sandy loams, 2 to 9 percent slopes
Location in survey area: about 400 feet south and 800 feet east of the northwest corner of sec. 34, T. 3 S., R. 74 W.

The soil surface is covered by about 2 percent cobbles.

A—0 to 9 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine, and few medium roots; few visible mica fragments as fine and very fine sand; 20 percent gravel and 10 percent cobbles; slightly acid; clear smooth boundary.

AC—9 to 13 inches; brown (10YR 5/3) very gravelly loamy sand, dark brown (10YR 3/3) moist; single grain; loose, nonsticky and nonplastic; common very fine and fine, and few medium roots; few visible mica fragments as fine and very fine sand; 30 percent gravel, 5 percent cobbles, and 2 percent stones; slightly acid; clear wavy boundary.

C1—13 to 28 inches; yellowish brown (10YR 5/4) very gravelly loamy sand, dark yellowish brown (10YR 3/4), moist; single grain; loose, nonsticky and nonplastic; few very fine and few fine roots; common visible mica fragments as fine and very fine sand; 45 percent gravel and 7 percent cobbles; slightly acid; gradual wavy boundary.

C2—28 to 60 inches; light yellowish brown (10YR 6/4) extremely gravelly sand, dark yellowish brown (10YR 4/4) moist; single grain; loose, nonsticky and nonplastic; few very fine roots; 60 percent gravel and 10 percent cobbles; slightly acid.

Range in Characteristics

Soil moisture: typic ustic
Average annual soil temperature: 40 to 45 degrees F.
Average summer soil temperature: 58 to 64 degrees F.
Thickness of the mollic epipedon: 9 to 15 inches
Reaction: slightly acid to neutral

A horizon:
Hue: 7.5YR or 10YR
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: sandy loam
Clay content: 5 to 16 percent
Rock fragments: 15 to 40 percent
Kind: gravel

AC horizon:
Hue: 7.5YR or 10YR
Value: 4 to 7 dry, 3 to 6 moist
Chroma: 2 to 4
Texture: loamy sand, sandy loam
Clay content: 3 to 10 percent
Rock fragments: 35 to 80 percent

C horizons:
Hue: 7.5YR or 10YR
Texture: sand or loamy sand
Clay content: 3 to 10 percent
Rock fragments: 35 to 80 percent

Mammoth Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderately rapid
Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium and/or slope alluvium derived from igneous and metamorphic rock

Elevation: 7,800 to 10,500 feet
Slope: 15 to 60 percent
Climatic data:
Average annual precipitation: 20 to 24 inches
Average annual temperature: 37 to 41 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Lamellic Dystrocryepts

Typical Pedon

Map unit in which located: Mammoth very gravelly sandy loam, in an area of Mammoth-Ohman-Bendemeere complex, 30 to 60 percent slopes.
Location in survey area: about 1,800 feet north and 250 feet east of the southwest corner of sec. 20, T. 4 S., R. 72 W.

The soil surface is covered by about 1 percent stones.

Oi—0 to 1 inch; slightly decomposed needles, moss, twigs, and cones.
E—1 inch to 10 inches; pale brown (10YR 6/3) very gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; weak very fine subangular blocky structure parting to weak medium granular; soft, very friable, nonsticky and nonplastic; common visible mica flakes as fine and very fine sand-size particles; 30 percent gravel, 5 percent cobbles, and 5 percent stones; moderately acid; clear wavy boundary.
E and Bt1—10 to 16 inches; yellowish brown (10YR 5/4) gravelly loam, dark yellowish brown (10YR 4/4) moist; weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; one discontinuous lamellae 1/2 cm. thick; sandy clay loam, brown (7.5YR 4/4); common visible mica flakes as fine and very fine sand-size particles; 30 percent gravel and 2 percent cobbles; moderately acid; gradual smooth boundary.
E and Bt2—16 to 22 inches; yellowish brown (10YR 5/4) very gravelly loamy sand, brown (7.5YR 5/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; one continuous wavy lamellae 1/2 cm. thick; sandy clay loam, brown (7.5YR 4/4); common visible mica flakes as fine and very fine sand-size particles; 40 percent gravel and 2 percent cobbles; moderately acid; gradual smooth boundary.
E and Bt3—22 to 32 inches; yellowish brown (10YR 5/4) very gravelly sandy loam, strong brown (7.5YR 4/6) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; two continuous wavy lamellae 1 cm. thick; clay coatings on fine and medium sand; sandy clay loam, strong brown (7.5YR 4/6); common visible mica flakes as fine and very fine sand-size particles; 40 percent gravel and 5 percent cobbles; moderately acid; gradual smooth boundary.
E and Bt4—32 to 59 inches; strong brown (7.5YR 5/6) very gravelly sandy loam, strong brown (7.5YR 4/6) moist; weak fine subangular blocky structure; slightly hard, very friable, nonsticky and nonplastic; three continuous and discontinuous lamellae, 1 cm. thick; sandy clay loam, strong brown (7.5YR 5/6); many visible mica flakes as fine and very fine sand-size particles; 30 percent gravel and 10 percent cobbles; slightly acid; gradual wavy boundary.
C—59 to 67 inches; strong brown (7.5YR 4/6) stony loamy coarse sand, brown (7.5YR 4/4) moist, weak medium subangular blocky structure; soft, very friable, nonsticky and nonplastic; many visible mica flakes as fine and very fine sand-size particles; 10 percent cobbles and 20 percent stones; moderately acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 37 to 42 degrees F.
Average summer soil temperature: 36 to 40 degrees F.

Particle-size control section (weighted average):
Rock fragment content: 35 to 75 percent
Clay content: 10 to 27 percent
Sand content: 45 to 66 percent

A or E horizon:
Hue: 10YR or7.5YR
Value: 4 to 7 dry, 2 to 6 moist
Chroma: 1 to 4
Texture: loamy sand, sandy loam, coarse sandy loam
Reaction: strongly acid to slightly acid

E and Bt horizons:
Hue: 7.5YR or 10YR
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 2 to 4
Texture: loamy sand, sandy loam, loam, sandy clay loam (lamellae)
Reaction: strongly acid to slightly acid
Silicate clays: Have accumulated in lamellae, but their thickness does not total 6 inches in the upper 2 meters of the soil profile. In this profile, the total thickness of lamellae is 4 inches (10 cm).

C horizon:
Hue: 5YR or 7.5YR
Texture: loamy coarse sand, coarse sandy loam, sandy loam
Reaction: very strongly acid to moderately acid

Ohman Series

Depth class: moderately deep
Drainage class: well drained
Permeability: moderately rapid
Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Elevation: 7,400 to 10,800 feet
Slope: 15 to 60 percent
Climatic data:
Average annual precipitation: 18 to 32 inches
Average annual temperature: 36 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Lamellic Dystrocryepts

Typical Pedon

Map unit in which located: Ohman very stony sandy loam, in an area of Mammoth-Ohman-Bendemeere complex, 15 to 30 percent slopes
Location in survey area: about 100 feet south and 675 feet west of the northeast corner of sec. 30, T. 4 S., R. 72 W.

The soil surface is covered by about 6 percent stones and boulders.

Oi—0 to 2 inches; slightly decomposed needles, twigs, bark, and leaves.
A—2 to 5 inches; very pale brown (10YR 7/3) very stony sandy loam, dark grayish brown (10YR 4/2) moist; moderate fine granular structure; soft, very friable, nonsticky and nonplastic; common mica particles as fine and medium-size sand; 18 percent gravel, 10 percent angular cobbles, and 19 percent stones; strongly acid; abrupt wavy boundary.
E—5 to 13 inches; pink (7.5YR 7/4) very gravelly sandy loam, brown (7.5YR 4/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common mica particles as fine and medium-size sand; 40 percent angular and rounded gravel and 10 percent angular cobbles; strongly acid; clear wavy boundary.
E and Bt1—13 to 21 inches; reddish yellow (7.5YR 7/6) very gravelly sandy loam, yellowish red (5YR 5/6) moist; weak fine subangular blocky structure; loose, nonsticky and nonplastic; fine (less than 1.5 cm. in size) brittle spots; common manganese-iron nodes or concretions less than 0.5 cm. in size; one discontinuous lamellae 1-1.5 cm. thick; reddish brown (5YR 4/4) sandy loam; common mica particles as fine and medium-size sand; 50 percent subangular gravel and 2 percent angular cobbles; strongly acid; gradual wavy boundary.
E and Bt2—21 to 35 inches; reddish yellow (7.5YR 6/6) extremely gravelly sandy loam, yellowish red (5YR 4/6) moist; moderate medium and fine platy structure; loose, nonsticky and nonplastic; 65 percent discontinuous brittle lenses; few manganese-iron concretions; four lamellae 0.5-1 cm. thick; reddish brown (5YR 4/4) sandy loam; common mica particles as fine- and medium-size sand; 55 percent angular gravel, 10 percent angular cobbles, and 1 percent stones; strongly acid; clear smooth boundary.
Cr—35 to 39 inches; weathered granite.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 38 to 42 degrees F.
Average summer soil temperature: 36 to 40 degrees F.
Depth to paralithic contact: 20 to 40 inches
Thickness of the lamellae: 3 cm. to 5.5 cm.
Base saturation: ranges from 25 to 55 percent in the texture control section

A horizon:
Hue: 7.5YR or 10YR
Value: 5 to 7 dry, 3 to 6 moist
Chroma: 1 to 3
Texture: sandy loam, loamy sand
Clay content: 5 to 14 percent
Rock fragments: 20 to 55 percent
Kind: mainly gravel
Reaction: strongly acid to slightly acid

E horizon:
Hue: 5YR or 7.5YR
Value: 5 to 7 dry, 3 to 5 moist
Chroma: 1 to 4
Texture: loamy sand, sandy loam, coarse sandy loam
Clay content: 3 to 14 percent
Rock fragments:
Kind: mainly gravel
Reaction: very strongly acid to slightly acid
Silicate clays: lamellae may be present and discontinuous

E and Bt horizons:
Hue: 5YR or 7.5YR
Value: 4 to 7 dry, 3 to 5 moist
Chroma: 3 to 6
Texture: sandy loam
Clay content: 12 to 17 percent
Rock fragments: 35 to 75 percent
Kind: mainly gravel and cobbles
Reaction: very strongly acid to slightly acid
Lamellae: Do not exceed 6 inches in total thickness

NOTE: The Ohman series as used in map unit 58 is outside of the range in characteristics of the official series description (OSD). In this map unit, the precipitation is as high as 32 inches (the OSD is 24 inches), the elevation is as high as 10,800 feet (the OSD is 10,500 feet), and the frost-free period is as low as 25 days (the OSD is 35 days). These differences do not affect the taxonomic placement or use and management. The OSD was not revised for this one map unit.

Peeler Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderately slow
Landform: North-facing mountain slopes
Position on landform: footslopes
Parent material: colluvium and/or slope alluvium derived from igneous and metamorphic rock
Elevation: 7,200 to 9,500 feet
Slope: 15 to 30 percent
Climatic data:
Average annual precipitation: 18 to 20 inches
Average annual temperature: 41 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Fine-loamy, mixed, superactive Ustic Glossocryalfs

Typical Pedon

Map unit in which located: Peeler stony sandy loam, in an area of Grimstone-Peeler-Rock outcrop complex, 15 to 30 percent slopes
Location in survey area: about 200 feet west and 400 feet south of the northeast corner of sec. 11, T. 5 S., R. 71 W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) stony sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, loose, nonsticky and nonplastic; 15 percent gravel and 10 percent stones; slightly acid; clear smooth boundary.

E—4 to 10 inches; pale brown (10YR 6/3) gravelly loamy sandy, brown (10YR 5/3) moist; weak medium granular structure; soft, loose, nonsticky and nonplastic; 20 percent gravel; strongly acid; clear smooth boundary.

E/B—10 to 15 inches; light yellowish brown (10YR 6/4), gravelly loamy sand, yellowish brown (10YR 5/4) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common fine sand and very fine sand-size mica material; 20 percent gravel and 2 percent cobbles; very strongly acid; clear smooth boundary.

Bt1—15 to 29 inches; brown (7.5YR 5/4), gravelly sandy loam, brown (7.5YR 4/4) moist; weak medium prismatic structure parting to weak medium subangular; hard, friable, slightly sticky and slightly plastic; few faint clay films on mineral grains; common fine sand and very fine sand-size mica material; 20 percent gravel and 2 percent cobbles; very strongly acid; gradual smooth boundary.

Bt2—29 to 35 inches; strong brown (7.5YR 5/6) gravelly sandy clay loam, brown (7.5YR 4/4) moist; weak medium prismatic structure parting to weak medium subangular blocky; hard, friable, sticky and plastic; few faint clay films as bridges holding mineral grains together; common fine sand and very fine sand-size mica material; 20 percent gravel and 2 percent cobbles; very strongly acid; gradual smooth boundary.

BCt—35 to 60 inches; strong brown (7.5YR 5/6) gravelly sandy loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure; hard, friable, sticky and plastic; few faint clay films as bridges holding mineral grains together; common to many fine sand and very fine sand-size mica material; 20 percent gravel and 2 percent cobbles; strongly acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 36 to 42 degrees F.
Average summer soil temperature: 40 to 44 degrees F.

Particle-size control section (weighted average):
Rock fragment content: 0 to 35 percent

A horizon:
Hue: 7.5YR to 2.5Y
Value: 4 or 5 dry, 2 or 3 moist

Chroma: 2 or 3
Texture: sandy loam
Clay content: 8 to 18 percent
Reaction: moderately acid or slightly acid

E horizon:
Hue: 2.5Y to 7.5YR
Value: 5 to 8 dry, 4 to 7 moist
Chroma: 2 to 4
Texture: loamy sand or sandy loam
Clay content: 5 to 18 percent
Reaction: strongly acid to slightly acid

Bt horizons:
Hue: 7.5YR to 2.5Y
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 2 to 6
Texture: sandy clay loam or sandy loam
Clay content: 18 to 35 percent
Reaction: very strongly acid to slightly acid

C horizon: present in some pedons

Pettingell Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderately rapid
Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Elevation: 8,000 to 9,000 feet
Slope: 20 to 80 percent
Climatic data:
Average annual precipitation: 18 to 22 inches
Average annual temperature: 39 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Ustic Haplocryolls

Typical Pedon

Map unit in which located: Pettingell gravelly loam, in an area of Pettingell-Rogert-Rock outcrop complex, 30 to 80 percent slopes
Location in survey area: about 750 feet west and 800 feet north of the southeast corner of sec. 3, T. 4 S., R. 73 W.

The soil surface is covered by about 10 percent gravel, 3 percent cobbles, and 1 percent stones.

A1—0 to 4 inches; dark grayish brown (10YR 4/2), gravelly sandy loam, very dark brown (10YR 2/2) moist; moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine and few medium roots; common, visible mica as fine and medium sand-size particles; 20 percent gravel and 5 percent cobbles; neutral; clear smooth boundary.

A2—4 to 11 inches; brown (10YR 5/3) very gravelly loam, dark brown (10YR 3/3) moist; weak fine subangular blocky parting to moderate medium granular structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine, few medium and coarse roots; common, visible mica as fine and medium sand-size particles; 25 percent gravel, 10 percent cobbles, and 5 percent stones; slightly acid; clear wavy boundary.

Bw—11 to 18 inches; brown (10YR 5/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure; soft, friable, nonsticky and nonplastic; common very fine, few fine and coarse roots; common visible mica as fine and medium sand-size particles; 35 percent gravel, 15 percent cobbles, and 1 percent stones; slightly acid; gradual wavy boundary.

BC—18 to 37 inches; very pale brown (10YR 7/3) very cobbly coarse sandy loam, pale brown (10YR 6/3) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine and fine roots; common visible mica as fine and medium sand-size particles; 30 percent gravel, 20 percent cobbles, and 5 percent stones; slightly acid, gradual wavy boundary.

C—37 to 60 inches; pink (7.5YR 7/4) extremely stony sandy loam, reddish yellow (7.5YR 6/6) moist; massive; soft, very friable, slightly sticky and slightly plastic; few fine roots; many, visible mica as fine and medium sand-size particles; 30 percent gravel, 15 percent cobbles, and 20 percent stones; slightly acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 39 to 42 degrees F.
Depth to cambic horizon: 10 to 20 inches
Depth to base of cambic horizon: 16 to 27 inches

A horizon:
Hue: 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: sandy loam and loam
Clay content: 10 to 26 percent
Rock fragments: 25 to 45 percent
Reaction: slightly acid or neutral

B horizons:
Hue: 10YR
Value: 5 to 7 dry, 4 or 5 moist
Chroma: 1 to 4
Texture: sandy loam and coarse sandy loam
Clay content: 8 to 20 percent
Rock fragments: 35 to 75 percent
Reaction: moderately acid or slightly acid

C horizons:
Hue: 7.5YR or 10YR
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 3 to 6
Texture: sandy loam and coarse sandy loam
Clay content: 5 to 15 percent
Rock fragments: 35 to 75 percent
Reaction: moderately acid or slightly acid
NOTE: In some pedons, this horizon may exhibit 10 to 25 percent rock structure.

Raleigh Series

Depth class: shallow
Drainage class: somewhat excessively drained
Slowest permeability class: moderately rapid
Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Elevation: 7,700 to 10,000 feet
Slope: 3 to 70 percent
Climatic data:
Average annual precipitation: 17 to 22 inches
Average annual temperature: 41 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous, shallow Ustic Haplocryolls

Typical Pedon

Map unit in which located: Raleigh very gravelly sandy loam, 30 to 50 percent slopes
Location in survey area: about 450 feet north and 2,750 east of the southwest corner of sec. 16, T. 5 S., R. 72 W.

The soil surface is covered by about 7 percent stones.

0i—0 to 1 inch; slightly decomposed needles, grass, leaves, and bark.
A—1 inch to 6 inches; very dark grayish brown (10YR 3/2) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; common visible mica flakes as fine and medium sand-size particles; 30 percent gravel and 10 percent cobbles; neutral; abrupt wavy boundary.
Bw—6 to 15 inches; brown (10YR 5/3) very gravelly sandy loam, brown (10YR 4/3) moist; weak medium subangular blocky structure and weak fine subangular blocky; soft, very friable, nonsticky and nonplastic; many visible mica flakes as fine and medium sand-size particles; 45 percent gravel; neutral; clear smooth boundary.
Cr—15 to 19 inches; decomposing granite.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 36 to 42 degrees F.
Average summer soil temperature: 48 to 57 degrees F.
Depth to paralithic contact: 10 to 20 inches
Thickness of the mollic epipedon: 5 to 10 inches

Particle-size control section (weighted average):
Rock fragment content: 35 to 80 percent

A horizon:
Hue: 7.5YR or 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 2 or 3
Texture: sandy loam
Reaction: slightly acid or neutral

Bw horizon:
Hue: 7.5YR or 10YR
Value: 3 to 6 dry, 2 to 4 moist
Chroma: 2 or 3
Clay content: 8 to 16 percent
Texture: sandy loam
Reaction: moderately acid to neutral

C horizon: If present, the hue is 7.5YR or 10YR.

Redfeather Taxadjunct

Depth class: shallow
Drainage class: well drained
Slowest permeability class: moderate
Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Elevation: 7,800 to 9,500 feet
Slope: 12 to 70 percent
Climatic data:
Average annual precipitation: 16 to 20 inches

Average annual temperature: 41 to 45 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Lithic Glossocryalfs

Typical Pedon

Map unit in which located: Redfeather gravelly sandy loam, in an area of Redfeather-Legault-Tolvar complex, 12 to 30 percent slopes.
Location in survey area: about 1,450 feet north and 150 feet west of the southeast corner of sec. 35, T. 5 S., R. 72 W.

Oi—0 to 3 inches; slightly decomposed roots, twigs, needles, and bark.
A—3 to 4 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; many very fine, common medium and coarse roots; common mica flakes visible as fine and very fine sand-size particles; 20 percent gravel, 10 percent cobbles, and 2 percent stones; slightly acid; clear smooth boundary.
E—4 to 8 inches; pink (7.5YR 7/3) gravelly sandy loam, brown (7.5YR 5/2) moist; weak fine granular structure; soft, very friable, nonsticky and nonplastic; common very fine and fine and few medium roots; common mica flakes visible as fine and very fine sand-size particles; 20 percent gravel, 8 percent cobbles, and 3 percent stones; moderately acid; clear smooth boundary.
E/B—8 to 12 inches; 60 percent light brown (7.5YR 6/4) and 40 percent brown (10YR 5/3) very gravelly sandy loam, 60 percent brown (7.5YR 4/4) and 40 percent brown (10YR 4/3) moist, colors appear in blotchy patches and streaks between and around coarse fragments; weak fine subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine, few fine and medium roots; common to many mica flakes visible as fine and very fine sand-size material; 25 percent gravel, 10 percent cobbles, and 4 percent stones; moderately acid; clear wavy boundary.
Bt—12 to 18 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, brown (7.5YR 4/4) moist; weak medium and fine subangular blocky structure; slightly hard, friable, sticky and plastic; few very fine, fine and medium roots; 2 to 6 percent faint continuous clay films on ped faces and along pore channels; many mica flakes visible as fine and very fine sand-size particles; 30 percent gravel, 15 percent cobbles, and 10 percent stones; moderately acid; clear smooth boundary.
R—18 to 23 inches; granite.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 42 to 44 degrees F.
Average summer soil temperature: 52 to 56 degrees F.
Depth to lithic contact: 10 to 20 inches
Thickness of the mollic colors: 1 to 4 inches

A horizon:
Hue: 7.5YR or 10YR
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: sandy loam
Clay content: 12 to 18 percent
Rock fragments: 30 to 85 percent
Reaction: moderately acid or slightly acid

E and E/B horizons:
Hue: 7.5YR or 10YR
Value: 5 to 7 dry, 4 or 5 moist
Chroma: 1 to 3
Texture: sandy loam
Clay content: 15 to 18 percent
Rock fragments: 30 to 80
Kind: dominantly gravel-size
Reaction: strongly acid or moderately acid

Bt horizon:
Hue: 5YR or 7.5YR
Value: 4 to 6 dry, 3 to 4 moist
Chroma: 3 or 4
Texture: sandy clay loam
Clay content: 20 to 30 percent
Rock fragments: 35 to 80
Kind: dominantly gravel-size
Reaction: moderately acid to neutral

NOTE: The Redfeather soils in this survey area are taxadjuncts in map units 40 and 41 because of paramicaceous mineralogy. This difference, however, does not significantly affect the use, management, or interpretations of the soils.

Resort Series

Depth class: very shallow, shallow
Drainage class: somewhat excessively drained
Slowest permeability class: moderately rapid
Landform: mountain slopes, ridges
Position on landform: shoulders

Parent material: micaceous sandy residuum weathered from igneous and metamorphic rock
Elevation: 7,000 to 8,800 feet
Slope: 3 to 80 percent
Climatic data:
Average annual precipitation: 17 to 20 inches
Average annual temperature: 43 to 46 degrees F.
Frost-free period: 70 to 100 days

Taxonomic class: Sandy-skeletal, paramicaceous, frigid, shallow Entic Haplustolls

Typical Pedon

Map unit in which located: Resort very gravelly sandy loam, 15 to 30 percent south slopes.
Location in survey area: about 1,250 feet east and 1,100 feet south of the northwest corner of sec. 17, T. 5 S., R. 72 W.

Oi—0 to 1 inch; slightly decomposed needles, twigs, and cones.
A1—1 inch to 7 inches; brown (10YR 4/3) very gravelly sandy loam, very dark brown (10YR 2/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine and fine roots; common mica as visible fine and medium-size sand particles; 35 percent gravel and 5 percent stones; slightly acid; clear smooth boundary.
A2—7 to 14 inches; yellowish brown (10YR 5/4) extremely cobbly loamy sand, dark yellowish brown (10YR 4/4) moist; massive; soft, very friable, nonsticky and nonplastic; few very fine roots; mica is visible as fine and medium-size sand particles; 20 percent gravel and 65 percent cobbles; slightly acid; clear smooth boundary.
Cr—14 to 18 inches; fractured granite and schist.

Range in Characteristics

Soil moisture: typic ustic
Average annual soil temperature: 44 to 46 degrees F.
Average summer soil temperature: 59 to 64 degrees F.
Depth to lithic contact: 10 to 20 inches
Thickness of the mollic epipedon: 7 to 10 inches

A horizon: an AC subhorizon may be present
Hue: 7.5YR or 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 2 or 3
Texture: sandy loam, loamy sand, loamy coarse sand
Clay content: 2 to 17 percent
Rock fragments: 35 to 85 percent
Reaction: slightly acid or neutral

Cr horizon: Fractured weathered granitic rock are greater than 15 inches apart and the width of the cracks are less than 1 inch, with grus-like material imbedded in the cracks.

Rogert Series

Depth class: very shallow, shallow
Drainage class: well drained
Permeability: moderately rapid
Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Elevation: 7,600 to 9,600 feet
Slope: 3 to 80 percent
Climatic data:
Average annual precipitation: 18 to 21 inches
Average annual temperature: 39 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, mixed, superactive Lithic Haplocryolls

Typical Pedon

Map unit in which located: Rogert extremely cobbly sandy loam, in an area of Rogert-Herbman-Rock outcrop complex, 30 to 70 percent slopes
Location in survey area: about 400 feet north and 300 feet east of the southwest corner of sec. 25, T. 2 S., R. 71 W.

The soil surface is covered by about 6 percent stones.

A—0 to 8 inches; brown (10YR 5/3) extremely cobbly sandy loam, dark brown (10YR 3/3) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine and medium roots; common very fine and fine sand mica flakes; 30 percent gravel, 30 percent cobbles, and 15 percent stones; neutral; clear wavy boundary.
C—8 to 16 inches; yellowish brown (10YR 5/4) extremely gravelly sandy loam, dark yellowish brown (10YR 4/4) moist; massive; loose, nonsticky and nonplastic; many very fine and fine, few coarse roots; common very fine and fine sand mica flakes; 40 percent gravel, 10 percent

cobbles, and 15 percent stones; neutral; clear irregular boundary.

R—16 to 20 inches; hard fractured granite.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 36 to 42 degrees F.
Average summer soil temperature: 43 to 46 degrees F.
Depth to lithic contact: 10 to 20 inches
Reaction: slightly acid or neutral

A horizon:
Hue: 7.5YR or 10YR
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 1 to 3
Texture: sandy loam
Clay content: 10 to 18 percent

C horizon:
Hue: 2.5YR to 7.5YR
Texture: sandy loam
Clay content: 10 to 18 percent
Rock fragments: 35 to 85

NOTE: The Rogert soils in this survey area are taxadjuncts in map units 36 and 60 because they are paramicaceous. This difference, however, does not significantly affect the use, management, or interpretations of the soils. In these map units the Rogert soils are loamy-skeletal, paramicaceous Lithic Haplocryolls.

Sprucedale Series

Depth class: shallow
Drainage class: well drained
Slowest permeability class: moderate
Landform: mountain slopes, ridges
Position on landform: shoulders
Parent material: micaceous residuum weathered from igneous and metamorphic rock
Elevation: 7,600 to 9,500 feet
Slope: 3 to 50 percent
Climatic data:
Average annual precipitation: 17 to 23 inches
Average annual temperature: 41 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy, paramicaceous, shallow Ustic Argicryolls

Typical Pedon

Map unit in which located: Sprucedale gravelly sandy loam, in an area of Troutdale-Sprucedale gravelly sandy loams, 3 to 15 percent slopes
Location in survey area: about 1,400 feet east and 824 feet north of the southwest corner of sec. 29, T. 4 S., R. 71 W.

A—0 to 6 inches; dark grayish brown (10YR 4/2) gravelly sandy loam, very dark brown (10YR 2/2) moist; moderate fine granular structure; soft, loose, slightly sticky and nonplastic; 20 percent gravel; neutral; clear smooth boundary.

Bt—6 to 12 inches; brown (10YR 4/3) sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium prismatic structure parting to weak medium subangular blocky; hard, very friable, slightly sticky and nonsticky; few faint clay films on the face of peds; 10 percent gravel; neutral; clear wavy boundary.

Cr—12 to 16 inches; dark grayish brown (2.5Y 4/2) weathered micaceous schist.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 41 to 45 degrees F.
Average summer soil temperature: 46 to 54 degrees F.
Depth to paralithic contact: 10 to 20 inches
Thickness of the mollic epipedon: 7 to 16 inches
Reaction: slightly acid or neutral

Particle-size control section (weighted average):
Clay content: 7 to 18 percent
Rock fragment content: 10 to 35 percent (In some areas, rock fragments range to 45 percent.)

A horizon:
Hue: 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 2 or 3
Texture: sandy loam

Bt horizons:
Hue: 10YR
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 2 to 4
Texture: sandy loam, loam

Cr horizons: Material is weathered micaceous schist, gneiss or granitic rocks

Tahana Series

Depth class: moderately deep
Drainage class: somewhat excessively drained
Slowest permeability class: moderately rapid

Landform: mountain slopes
Position on landform: backslopes
Parent material: micaceous sandy slope alluvium or colluvium over residuum weathered from igneous and metamorphic rock
Elevation: 7,400 to 9,500 feet
Slope: 5 to 70 percent
Climatic data:
Average annual precipitation: 18 to 25 inches
Average annual temperature: 36 to 41 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Sandy-skeletal, paramicaceous Ustic Eutrocryepts

Typical Pedon

Map unit in which located: Tahana gravelly sandy loam, in an area of Tahana -Legault-Rock outcrop complex, 30 to 70 percent slopes
Location in survey area: about 1,800 feet south and 1,100 west of the northeast corner of sec. 22, T. 5 S., R. 72 W.

The soil surface is covered by about 8 percent stones.

Oi—0 to 1 inch; slightly decomposed needles, twigs, bark, and moss.
OE—1 inch to 2 inches; moderately decomposed needles.
Bw—2 to 8 inches; pinkish gray (7.5YR 6/2) (35 percent) and pale brown (10YR 6/3) (65 percent) gravelly sandy loam, brown (7.5YR 4/4) moist; moderate coarse granular structure; soft, very friable, nonsticky and nonplastic; visible mica as fine and medium sand particles; 15 percent gravel and 1 percent cobbles; strongly acid; clear wavy boundary.
BC—8 to 20 inches; pinkish gray (7.5YR 6/2) (20 percent) and brown (7.5YR 5/4) (80 percent) very gravelly loamy sand, brown (7.5YR 4/4) moist; weak fine subangular blocky structure; soft and loose, very friable, nonsticky and nonplastic; visible mica as fine and medium sand particles; 35 percent gravel, 2 percent cobbles, and 1 percent stones; strongly acid; clear wavy boundary.
C—20 to 24 inches; light brown (7.5YR 6/4) extremely gravelly loamy sand, brown (7.5YR 5/4) moist; massive; loose, nonsticky and nonplastic; 35 to 40 percent rock structure remaining; 80 percent gravel and 5 percent cobbles; very strongly acid; gradual wavy boundary.
Cr—24 to 28 inches; partially decomposed granitic rock.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average summer soil temperature: 47 to 56 degrees F.
Depth to paralithic contact: 20 to 40 inches
Depth to cambic horizon: 2 to 21 inches

Particle-size control section (weighted average):
Rock fragment content: 35 to 85 percent

A horizon: If present
Hue: 7.5YR or 10YR
Value: 4 to 7 dry, 2 to 5 moist
Chroma: 2 to 4
Reaction: strongly acid to slightly acid

Bw horizon:
Hue: 7.5YR or 10YR
Value: 4 to 7 dry, 3 to 5 moist
Chroma: 2 to 4
Clay content: 2 to 12 percent
Reaction: very strongly acid to slightly acid

BC horizon:
Hue: 7.5YR or 10YR
Value: 4 to 7 dry, 4 or 5 moist
Chroma: 1 to 4
Clay content: 2 to 8 percent
Reaction: very strongly acid to slightly acid

C horizon:
Hue: 7.5YR or 10YR
Clay content: 2 to 6 percent
Reaction: very strongly acid to slightly acid

Tolland Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderately rapid
Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous sandy colluvium and/or slope alluvium derived from igneous and metamorphic rock
Elevation: 8,200 to 10,700 feet
Slope: 9 to 80 percent
Climatic data:
Average annual precipitation: 17 to 23 inches
Average annual temperature: 39 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Sandy-skeletal, paramicaceous Ustic Eutrocryepts

Typical Pedon

Map unit in which located: Tolland cobbly sandy loam, in an area of Tolland-Rock outcrop complex, 30 to 80 percent slopes
Location in survey area: about 950 feet south and 450 feet west of the northeast corner of sec. 20, T. 4 S., R. 74 W.

The soil surface is covered by about 15 percent cobbles and 2 percent stones.

Oi—0 to 1 inch; slightly decomposed lichens, moss, and needles.
OE—1 inch to 2 inches; moderately decomposed needles, twigs, and bark.
A—2 to 5 inches; brown (10YR 5/3), cobbly sandy loam, dark yellowish brown (10YR 3/4) moist; moderate medium granular structure; soft, very friable, nonsticky and nonplastic; many fine, few medium and coarse roots; common visible mica as fine and medium sand particles; 15 percent gravel, 15 percent cobbles, and 1 percent stones; moderately acid; clear wavy boundary.
BE—5 to 11 inches; light brownish gray (10YR 6/2), very gravelly coarse sandy loam, dark yellowish brown (10YR 4/4) moist; weak fine subangular blocky structure; soft, very friable, nonsticky and nonplastic; many very fine, common fine, few medium and coarse roots; common visible mica as fine and medium sand particles; 35 percent gravel, 10 percent cobbles, and 1 percent stones; strongly acid; clear wavy boundary.
C1—11 to 50 inches; light yellowish brown (10YR 6/4) extremely gravelly loamy coarse sand, dark yellowish brown (10YR 4/4) moist; single grained, loose, nonsticky and nonplastic; many very fine and fine roots; common visible mica as fine and medium sand particles; 45 percent gravel, 20 percent cobbles, and 2 percent stones; strongly acid; gradual wavy boundary.
C2—50 to 69 inches; light yellowish brown (10YR 6/4) extremely cobbly loamy coarse sand, yellowish brown (10YR 5/4) moist; single grained, loose, nonsticky and nonplastic; many very fine and fine roots; very pale brown (10YR 7/3) silt coatings on top of coarse fragments 0.5 to 1.0 cm. thick; many visible mica as fine and medium sand particles; 40 percent gravel, 25 percent cobbles, and 5 percent stones; strongly acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 35 to 41 degrees F.
Average summer soil temperature: 39 to 46 degrees F.

A horizon:
Hue: 10YR
Value: 4 or 5 dry, 2 or 3 moist
Chroma: 1 to 4
Texture: sandy loam or loamy sand
Clay content: 5 to 12 percent
Rock fragments: 10 to 80 percent
Reaction: moderately acid or slightly acid

BE horizon:
Hue: 10YR
Value: 6 or 7 dry, 4 to 6 moist
Chroma: 2 to 4
Texture: sandy loam, coarse sandy loam, and loamy sand
Clay content: 2 to 7 percent
Rock fragments: 35 to 80 percent
Reaction: strongly acid to slightly acid
NOTE: Bleached sand grains may occur in blotches and patches within this soil horizon.

C horizons:
Hue: 10YR or 7.5YR
Texture: loamy coarse sand
Clay content: 3 to 5 percent
Rock fragments: 35 to 80 percent
Reaction: strongly acid or moderately acid
NOTE: In some pedons, this horizon may exhibit 15 to 40 percent rock structure.

Tolvar Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderate
Landform: mountain slopes
Position on landform: footslopes, toeslopes
Parent material: Slope alluvium derived from igneous and metamorphic rock
Elevation: 7,800 to 9,500 feet
Slope: 12 to 30 percent
Climatic data:
Average annual precipitation: 20 to 25 inches
Average annual temperature: 36 to 39 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, mixed, superactive Ustollic Glossocryalfs

Typical Pedon

Map unit in which located: Tolvar gravelly coarse

sandy loam, in an area of Redfeather-Legault-Tolvar complex, 12 to 30 percent slopes

Location in survey area: about 1,410 feet north and 150 feet east of the southwest corner of sec. 36, T. 2 S., R. 73 W.

The soil surface is covered by about 1 percent stones.

Oi—0 to 1 inch; slightly decomposed needles, twigs, bark, and cones.

A—1 inch to 4 inches; dark grayish brown (10YR 4/2) gravelly coarse sandy loam, very dark grayish brown (10YR 3/2) moist; weak medium granular structure; soft, very friable, nonsticky and nonplastic; many fine, few medium and coarse roots; 20 percent gravel; moderately acid; clear smooth boundary.

E—4 to 14 inches; pale brown (10YR 6/3) gravelly coarse sandy loam, brown (10YR 5/3) moist; bleached silt and fine sand coatings, light gray (10YR 7/2); weak medium subangular blocky structure; soft, very friable, slightly sticky and nonplastic; many fine, few medium, and common coarse roots; 30 percent gravel and 2 percent cobbles; slightly acid; clear wavy boundary.

E/B—14 to 19 inches; 75 percent pale brown (10YR 6/3), 25 percent brown (7.5YR 5/4) very gravelly sandy loam, 75 percent dark yellowish brown (10YR 4/6) and 25 percent strong brown (7.5YR 4/6)moist; weak coarse subangular blocky parting to weak fine subangular blocky structure; slightly hard, firm, slightly sticky and plastic; tongues at 3 to 4 inches as irregular shapes both horizontal and vertical; few fine, common medium, and few coarse roots; common mica flakes as fine and very fine sand-size particles; 30 percent gravel and 10 percent cobbles; very few faint clay films in and around pores of the matrix of the B material; slightly acid; irregular wavy boundary.

B/E—19 to 26 inches; 80 percent of matrix is (B material), light reddish brown (5YR 6/4), 20 percent of the matrix is (E material), light brown (7.5YR 6/3), very cobbly sandy clay loam; 80 percent is a yellowish red (5YR 5/6) and 20 percent is a brown (7.5YR 5/4) moist; weak fine subangular blocky structure; hard, firm, sticky and plastic; very few faint clay films on faces of peds in the B part of the matrix; tongues are dominantly vertical 6 inches by 1.5 inches wide; few fine, medium, and coarse roots; common mica flakes as fine and very fine sand-size particles; 30 percent gravel, 20 percent cobbles, and 5 percent stones; slightly acid; gradual wavy boundary.

Bt1—26 to 48 inches; reddish brown (5YR 5/4) very gravelly sandy clay loam, yellowish red (5YR 4/6) moist; weak medium subangular blocky structure; extremely hard, firm, sticky and plastic; few faint clay films on all faces of peds and few faint clay films in and around pores; few fine, medium, and coarse roots; common mica flakes as fine and very fine sand-size particles; 30 percent gravel, 10 percent cobbles, and 1 percent stones; slightly acid; clear wavy boundary.

Bt2—48 to 70 inches; brown (7.5YR 5/4) very gravelly sandy clay loam, strong brown (7.5YR 4/6) moist; weak coarse subangular blocky structure; extremely hard, firm, very sticky and very plastic; common, faint clay films on all faces of peds and few faint clay films in and around pores; few fine and medium roots; common mica flakes as fine and very fine sand-size particles; 45 percent gravel and 10 percent cobbles; slightly acid.

Range in Characteristics

Soil moisture: udic bordering on ustic

Average annual soil temperature: 38 to 41 degrees F.

Average summer soil temperature: 42 to 44 degrees F.

Depth to argillic horizon: 15 to 33 inches

Reaction: moderately acid or slightly acid

A horizon:

Hue: 10YR or 7.5YR
Value: 4 or 5 dry, 2 or 3 moist
Texture: coarse sandy loam
Clay content: 12 to 18 percent
Rock fragments: 15 to 70 percent

E horizon:

Hue: 7.5YR or 10YR
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 1 to 4
Texture: coarse sandy loam
Clay content: 12 to 18 percent
Rock fragments: 35 to 70 percent

E/B and B/E horizons:

Hue: 5YR to 7.5YR
Value: 5 to 7 dry, 4 to 6 moist
Chroma: 1 to 6
Texture: sandy loam or sandy clay loam
Clay content: 15 to 27 percent
Rock fragments: 35 to 80 percent

Bt horizons:

Hue: 5YR or 7.5YR
Texture: sandy clay loam
Clay content: 20 to 27 percent
Rock fragments: 35 to 80 percent

NOTE: In these horizons this soil exhibits "hard to extremely hard settings" when dry, similar to densic properties in the summer and early fall months.

Tonahutu Taxadjunct

Depth class: Deep
Drainage class: well drained
Slowest permeability class: moderate
Landform: mountain slopes
Position on landform: footslopes
Parent material: micaceous colluvium derived from igneous and metamorphic rock
Elevation: 9,800 to 11,400 feet
Slope: 30 to 60 percent
Climatic data:
Average annual precipitation: 24 to 32 inches
Average annual temperature: 37 to 41 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Loamy-skeletal, paramicaceous Lamellic Haplocryalfs

Typical Pedon

Map unit in which located: Tonahutu coarse sandy loam, in an area of Tonahutu-Ohman complex, 30 to 60 percent slopes
Location in survey area: about 2,300 feet west and 550 feet north of the southwest corner of sec. 31, T. 4 S., R. 73 W.

The soil surface is covered by about 1 percent stones.

Oi—0 to 1 inch; slightly decomposed needles, twigs, bark, and leaves.
E—1 inch to 4 inches; light brown (7.5YR 6/3) coarse sandy loam, brown (7.5YR 4/3) moist; moderate fine granular structure; soft, very friable, slightly sticky, and nonplastic; few very fine, common fine, and, few medium and coarse roots; common mica particles as fine and medium-size sand; 10 percent gravel; moderately acid; clear smooth boundary.
E/B—4 to 16 inches; light reddish brown (5YR 6/4) coarse sandy loam, 70percent of the matrix is yellowish red (5YR 4/6) and 30percent of the matrix is dark reddish brown (5YR 3/4) moist; weak fine subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; visible tonguing of E material extends 10 to 20 cm. into this horizon, the tongues are 8 to 17 cm. wide and tapering to a point at the deepest point; few very fine, common fine, and few medium roots; common mica particles as fine and medium-size sand; 10 percent gravel and 2 percent cobbles; in the lower part of this horizon, eye-shaped pockets of reddish brown (5YR 5/4) or yellowish red (5YR 4/6) material occurs; strongly acid; abrupt smooth boundary.
E and Bt—16 to 24 inches; brown (7.5YR 5/4) very gravelly coarse sandy loam, dark brown (7.5YR 3/4) moist and aggregate color is dark reddish brown (5YR 3/4) moist; weak medium and fine subangular blocky structure; soft, very friable, nonsticky, and nonplastic; fourteen 0.5 to 1.5 cm. thick discontinuous lamellae, brown (7.5YR 5/4), loam texture, 20 percent clay, few faint patchy clay films on faces and in pores, one 1.0 cm. thick continuous lamellae, brown (7.5YR 4/3), sandy loam texture, 15 percent clay, common clay bridging; few very fine, fine, and medium roots; common mica particles as fine and medium-size sand; 32 percent gravel and 5 percent cobbles; strongly acid; clear wavy boundary.
C1—24 to 38 inches; yellowish brown (10YR 5/4), very gravelly coarse sandy loam, crushed color is dark yellowish brown (10YR 3/4) aggregate color is dark brown (10YR 3/3) moist; single grained; loose, nonsticky and nonplastic; few very fine and fine roots; common mica particles as fine and medium-size sand; 30 percent gravel, 10 percent cobbles, and 1 percent stones; strongly acid; gradual wavy boundary.
C2—38 to 48 inches; strong brown (7.5YR 5/6) very gravelly loamy coarse sand, strong brown (7.5YR 4/6) moist; single grained; loose, nonsticky and nonplastic; few medium roots; 45 percent gravel and 5 percent cobbles; very strongly acid; clear smooth boundary.
Cr—48 to 52 inches; weathering granite.

Range in Characteristics

Soil moisture: udic
Average annual soil temperature: 36 degrees 40 F.
Average summer soil temperature: 43 degrees 47 F.
Depth to lamellae: 6 to 24 inches
Depth to paralithic contact: 40 to 60 inches

A horizon:
Hue: 10YR or 7.5YR
Value: 5 to 7 dry, 3 to 6 moist
Chroma: 1 to 3
Texture: coarse sandy loam
Clay content: 8 to 18 percent
Rock fragments: 20 to 55 percent
Kind: mainly gravel
Reaction: strongly acid to slightly acid

E horizon:
Hue: 7.5YR or 5YR
Value: 5 to 7 dry, 3 to 5 moist
Chroma: 1 to 4
Texture: coarse sandy loam
Clay content: 8 to 18 percent
Rock fragments: 10 to 40 percent
Kind: mainly gravel-size
Reaction: strongly acid to slightly acid
Lamellae: lamellae may be present and discontinuous

E and Bt horizons:
Hue: 7.5YR or 5YR
Value: 4 to 7 dry, 3 to 5 moist
Chroma: 3 to 6
Texture: coarse sandy loam
Clay content: 8 to 17 percent
Rock fragments: 35 to 75 percent
Kind: mainly gravel- and cobble-size
Reaction: very strongly acid to slightly acid
Lamellae: continuous and discontinuous with loam and sandy loam textures

C horizons: may occur

NOTE: The Tonahutu soils in this survey area are a taxadjunct in map unit 58 because of paramicaceous mineralogy. Depth to bedrock is deep (40 to 60 inches) in this area vs. very deep (greater than 60 inches) on the official series description. The soil color in the E and Bt horizons is redder than the official series description. These differences, however, do not significantly affect the use, management, or interpretations of the soils.

Trag Series

Depth class: very deep
Drainage class: well drained
Slowest permeability class: moderately slow
Landform: mountain slopes
Position on landform: footslopes
Parent material: alluvium and/or slope alluvium derived from igneous and metamorphic rock
Elevation: 7,400 to 8,600 feet
Slope: 3 to 30 percent
Climatic data:
Average annual precipitation: 18 to 20 inches
Average annual temperature: 43 to 46 degrees F.
Frost-free period: 70 to 100 days

Taxonomic class: Fine-loamy, mixed, superactive, frigid Typic Argiustolls

Typical Pedon

Map unit in which located: Trag gravelly sandy loam, 3 to 15 percent slopes
Location in survey area: about 1,600 feet west and 500 feet north of the southeast corner of sec. 2, T. 4 S., R. 72 W.

A1—0 to 4 inches; dark brown (10YR 3/3) gravelly sandy loam, very dark brown (10YR 2/2) moist; weak fine subangular blocky structure parting to moderate fine granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine roots; common visible mica as fine and very fine sand-size material; 15 percent gravel and and 5 percent cobbles; neutral; clear smooth boundary.

A2—4 to 14 inches; dark brown (10YR 3/3) gravelly sandy clay loam, very dark brown (10YR 2/2) moist; moderate fine and medium angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; few very fine tubular pores; common visible mica as fine and very fine sand-size material; 15 percent gravel and and 5 percent cobbles; neutral; abrupt smooth boundary.

Bt1—14 to 21 inches; yellowish brown (10YR 5/4) cobbly sandy clay loam, brown (10YR 4/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine roots; common very fine tubular pores; few faint clay films on ped faces throughout; common visible mica as fine and very fine sand-size material; 10 percent gravel and and 10 percent cobbles; neutral; clear smooth boundary.

Bt2—21 to 27 inches; brown (7.5YR 5/4) cobbly sandy clay loam, dark yellowish brown (10YR 4/4) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and plastic; few fine roots; few very fine tubular pores; common, faint clay films on vertical faces of peds; 10 percent gravel and 10 percent cobbles; neutral; clear smooth boundary.

Bt3—27 to 45 inches; strong brown (7.5YR 5/6) cobbly clay loam, brown (7.5YR 4/4) moist; moderate medium prismatic structure parting to moderate medium subangular blocky; hard, firm, slightly sticky and plastic; few very fine roots; common very fine tubular pores; many faint clay films on vertical faces of peds; 10 percent gravel and 10 percent cobbles; neutral; gradual smooth boundary.

Bt4—45 to 60 inches; yellowish red (5YR 5/6) gravelly sandy clay loam, brown (7.5YR 4/4) moist; weak medium subangular blocky structure;

slightly hard, friable, slightly sticky and plastic; few very fine roots; few very fine tubular pores; few faint clay films on vertical faces of peds; 15 percent gravel and 5 percent cobbles; neutral.

Range in Characteristics

Soil moisture: typic ustic
Average annual soil temperature: 45 to 47 degrees F.
Average summer soil temperature: 59 to 60 degrees F.
Thickness of the mollic epipedon: 7 to 16 inches

A horizon:
Hue: 7.5YR or 10YR
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 2 or 3
Texture: loam and sandy clay loam
Clay content: 14 to 25 percent
Rock fragments: 0 to 30 percent

Bt horizons:
Hue: 7.5YR or 10YR
Value: 4 to 6 dry, 3 to 5 moist
Chroma: 2 to 4
Texture: sandy clay loam and clay loam
Clay content: 20 to 34 percent
Rock fragments average: 5 to 30 percent

C horizon: When present
Hue: 7.5YR or 10YR
Clay content: 20 to 30 percent
Rock fragments: 0 to 35 percent

Troutdale Series

Depth class: moderately deep
Drainage class: well drained
Slowest permeability class: moderately slow
Landform: mountain slopes, ridges
Position on landform: backslopes
Parent material: micaceous colluvium over residuum weathered from igneous and metamorphic rock
Elevation: 7,600 to 9,600 feet
Slope: 3 to 50 percent
Climatic data:
Average annual precipitation: 17 to 20 inches
Average annual temperature: 41 to 43 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Fine-loamy, paramicaceous Ustic Argicryolls

Typical Pedon

Map unit in which located: Troutdale sandy loam, in an area of Troutdale-Rogert-Kittredge complex, 3 to 15 percent slopes

Location in survey area: about 150 feet west and 320 feet south of the northeast corner of the southeast quarter of sec. 24, T. 4 S., R. 72 W.

A—0 to 4 inches; dark grayish brown (10YR 4/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak fine granular structure; soft, friable, slightly sticky and nonplastic; 5 percent gravel; neutral; clear smooth boundary.

BA—4 to 8 inches; dark grayish brown (10YR 4/2) sandy loam, very dark grayish brown (10YR 3/2) moist; weak coarse subangular blocky structure; hard, friable, slightly sticky and slightly plastic; 5 percent gravel; neutral; clear smooth boundary.

Bt1—8 to 14 inches; brown (10YR 4/3) sandy clay loam, dark brown (10YR 3/3) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common faint clay films on vertical faces of peds; common fine and very fine sand-size mica flakes; 5 percent gravel; neutral; clear smooth boundary.

Bt2—14 to 18 inches; brown (7.5YR 4/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common faint clay films on vertical faces of peds; common fine and very fine sand-size mica flakes; 10 percent gravel; neutral; clear smooth boundary.

BCt—18 to 29 inches; brown (7.5YR 4/4) sandy clay loam, brown (7.5YR 4/4) moist; moderate medium prismatic parting to moderate medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few faint clay films on vertical faces of peds; common to many fine and very fine sand-size mica flakes; 10 percent gravel; neutral; clear wavy boundary.

Cr—29 to 33 inches; weathered schist.

Range in Characteristics

Soil moisture: udic bordering on ustic
Average annual soil temperature: 43 to 47 degrees F.
Average summer soil temperature: 45 to 50 degrees F.
Depth to paralithic contact: 20 to 40 inches
Thickness of the mollic epipedon: 9 to 15 inches
Reaction: slightly acid or neutral

A horizon:
Hue: 7.5YR to 2.5Y
Value: 3 to 5 dry, 2 or 3 moist
Chroma: 2 or 3
Texture: sandy loam

Clay content: 10 to 20 percent
Rock fragments: 0 to 25 percent

Bt horizons:
Hue: 7.5YR to 2.5Y
Value: 4 or 5 dry, 3 or 4 moist
Chroma: 2 to 4
Texture: sandy clay loam
Clay content: 20 to 35 percent
Rock fragments: 5 to 15 percent

Cr horizon: weathered schist

Typic Cryaquents

Depth class: very deep
Drainage class: poorly drained
Slowest permeability class: moderately slow
Landform: flood plains, oxbows
Parent material: alluvium derived from igneous and metamorphic rock
Elevation: 8,000 to 8,600 feet
Slope: 0 to 3 percent
Climatic data:
Average annual precipitation: 18 to 21 inches
Average annual temperature: 41 to 45 degrees F.
Frost-free period: 25 to 75 days

Taxonomic class: Typic Cryaquents

Typical Pedon

Map unit in which located: Typic Cryaquents fine sandy loam, in an area of Typic Cryaquents-Cumulic Cryaquolls complex, 0 to 3 percent slopes
Location in survey area: about 1,700 feet east and 350 feet north of the southwest corner of sec. 27, T. 4 S., R. 74 W.

A—0 to 3 inches; dark gray (10YR 4/1) fine sandy loam, black (10YR 2/1) moist; weak medium granular structure; soft, very friable, non sticky and slightly plastic; many very fine roots and few coarse roots; 12 percent gravel; slightly acid; clear wavy boundary.
C1g—3 to 18 inches; grayish brown (10YR 5/2) cobbly sand, dark gray (10YR 4/1) and brown (10YR 4/3) moist; common fine and medium distinct iron concentrations, strong brown (7.5YR 5/6); single grained; loose, nonsticky and nonplastic; common very fine and fine roots, common mica visible as fine and very fine sand-size material; 7 percent gravel and 10 percent cobbles; slightly acid; clear wavy boundary.
C2g—18 to 23 inches; gray (2.5Y 5/1) loam, very dark gray (2.5Y 3/1) moist; common medium prominent iron concentrations, red (2.5YR 4/8); massive; soft, very friable, nonsticky and plastic; common fine roots; slightly acid; clear smooth boundary.
C3g—23 to 29 inches; very dark gray (2.5Y 3/1) loam, black (2.5Y 2.5/1) moist; common medium prominent iron concentrations, red (2.5YR 4/8); massive; soft, very friable, slightly sticky and slightly plastic; few fine and medium roots; common mica visible as fine and very fine sand-size material; moderately acid; gradual wavy boundary.
C4g—29 to 32 inches; olive gray (5Y 5/2) clay loam, black (5Y 2.5/2) moist; few medium prominent iron concentrations, dark reddish brown (5YR 3/4); weak medium subangular blocky structure; slightly hard, friable, sticky and plastic; few fine roots; common mica visible as fine and very fine sand-size material; moderately acid; clear wavy boundary.
2Cg—32 to 44 inches; olive (5Y 5/3) sand, dark olive gray (5Y 3/2) moist; single grained, discontinuous lenses of coarse sand and gravelly sand; loose, nonsticky and nonplastic; moderately acid; gradual wavy boundary.
3Cg—44 to 60 inches; light yellowish brown (2.5Y 6/3) very gravelly sand, light olive brown (2.5Y 5/4) moist; single grained; loose, nonsticky and nonplastic; 55 percent gravel; moderately acid.

Range in Characteristics

Soil moisture: udic bordering on ustic
Depth to the lithologic discontinuity: 32 to 58 inches
Depth to water table: 3 to greater than 18 inches
Thickness of the organic layers: 2 to 7 inches

Particle-size control section (weighted average):
Rock fragment content: 0 to 25 percent
Reaction: strongly acid to slightly alkaline
Flooding: this soil floods frequently

A horizon:
Hue: 2.5Y or 10YR
Texture: fine sandy loam
Overwash: Some profiles have an overwash of mine detritus up to 8 inches thick over the top of the A horizon.

C horizon:
Hue: 5Y to 10YR
Texture: sand, loam, or clay loam

2C horizon:
Thickness: ranges from 35 to 60 inches
Texture: sand
Rock fragment content: 35 to 70 percent

Figure 13.--A typical profile of Grimstone sandy loam. The numbers on the tape represent feet.

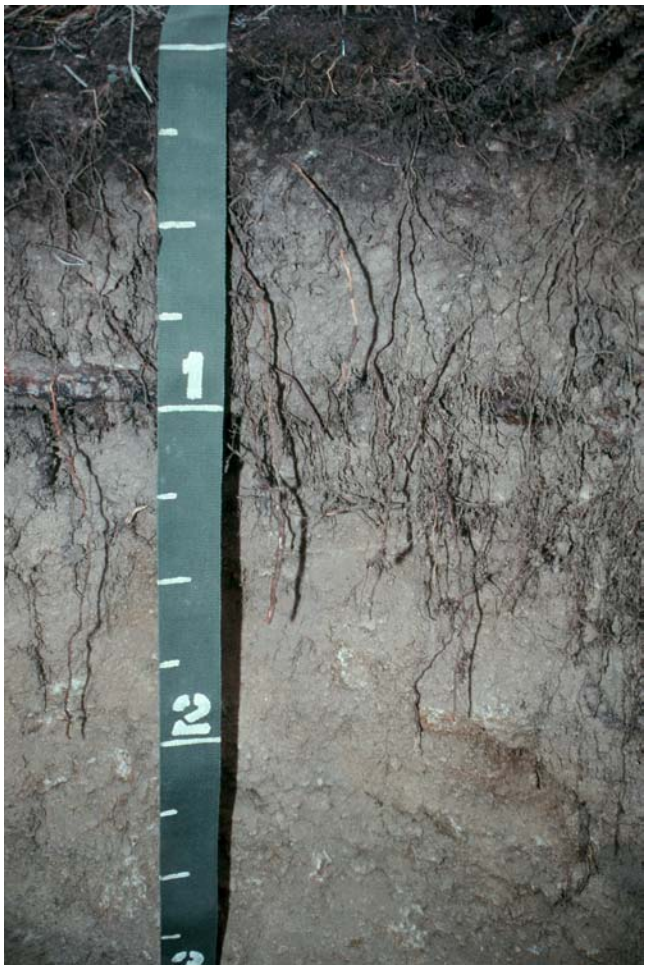

Figure 14.--A typical profile of the Mammoth very gravelly sandy loam. The numbers on the tape represent feet.

Figure 15.--A typical profile of the Pettingell gravelly sandy loam. The numbers on the tape represent feet.

Figure 16.--A typical profile of the Tolland gravelly sandy loam from an area of Bendemeere-Tolland complex, 30 to 70 percent slopes. The numbers on the tape represent feet.

Formation of the Soils

Five important factors determine the rate and nature of soil development and the separate soil horizons. These factors are the composition of the parent material; the climate under which the soil material accumulated and weathered; living organisms on and in the soil; relief, or the lay of the land; and the length of time that the forces of soil formation have acted upon the soil material. The relative effect of these factors varies from one locale to another.

Climate and vegetation are the dynamic and active factors of soil formation: they alter the accumulated soil material and bring about the development of genetically related soil horizons. *Relief*, mainly through its influence on temperature and runoff or run-on, modifies the effects of climate and vegetation. The parent material also affects the kind of profile that forms and, in extreme cases, determines it nearly in its entirety. Lastly, time is needed to modify the parent material into a soil. A long period of time generally is required for the development of distinct soil horizons.

Parent material undergoes many changes over time. Soil begins to form into a sequence of distinct horizons as soon as the parent material is deposited, settled and stabilized with adaptive vegetation. The horizons vary in color, texture, chemical characteristics, structure, and other properties. The basic processes of horizon differentiation include additions, removals, transfers, and transformations of substances in the soil. Some forms of these processes promote differentiation, and others retard or slow those processes down.

In the early stages of soil formation, the soil properties largely are inherited from the parent material. Organic matter accumulates in the surface layer if conditions favor stability of humus, and the A horizon darkens with this accumulation. As time passes, a B horizon develops if the landform remains stable and the climate favorable. In a B horizon, the soil material collectively aggregates into a cohesive structure (blocky) and generally becomes more clayey as a result of the accumulation of silicate clays in these subsoil horizons. These subsoil horizons usually tend to become redder in hue as a result of the enrichment of iron oxides. Leaching effects from downward percolation of water from snowmelt and/or rainwater will affect the pH level of each horizon in relation to other horizons.

Many other chemical and physical changes occur in parent material and in young soils, thus affecting the soil development. The rate of maturation varies greatly from place to place; for instance, the soils in this survey area vary from north-facing to south-facing slopes. In some positions on the landscape, the soils may not have an opportunity to age.

Parent Material

A wide diversity of color, mineralogy, reaction, and other physical and chemical properties are evident in the parent materials in the Georgetown soil survey area. This diversity is due to chemical reactions and leaching from precipitation downward into the soil profiles. Igneous and metamorphic rocks are the dominant rock sources. The method of material accumulation also is a factor in determining such soil characteristics as the content of rocks and stratification.

In the survey area there are two main kinds of parent material: residual and transported. The residual materials result from decomposition and the weathering of rocks in place. The transported materials include alluvium, colluvium, periglacial frost action, glacial outwash, and glacial till.

Alluvium is the most extensively transported material in the survey area. The flood plains and terraces of the streams consist of deposited Pleistocene age materials and recently deposited alluvium of Holocene age.

Examples of soils that formed in recent alluvium are Cumulic Cryaquolls and Typic Cryaquents. These soils reflect the variety of strata laid down periodically, one on top of another, by streams. Typic Cryaquents occur closest to the stream channels and have a wide variety of stratification with clays, fine sands, and coarse gravel to depths of 60 inches or more. The Cumulic Cryaquolls have an irregular decrease of organic material in the upper 16 to 20 inches, consistent saturation due to a high water table, and

generally are dark in color due to the dense grass and grass-like vegetation returning high quantities of organic material to the soil profile. The underlying material consists of very or extremely gravelly sands with some thin strata of finer material.

An example of Georgetown area soils that formed in Pleistocene alluvium is the Lone Rock soil. This soil occurs on slightly higher positions along the stream channels, has better internal drainage (lacking water table concerns), and generally has 10 to 28 inches of finer materials overlying coarser material of extremely gravelly sand. This soil has a high content of quartzite and micaceous sands derived from the felsic and mafic rocks of the Silver Plume and Boulder Creek granites. This soil depicts a slight degree of difference of soil development than those soils formed in more recent materials with some profiles exhibiting B subhorizons.

Colluvium is an important type of parent material on steep mountain slopes and fans. On some of the steepest mountain slopes, this material is less than 20 inches thick. More commonly, however, it is 60 inches thick or more.

Colluvium generally includes a high content of rock fragments. The fragments are derived from igneous and metamorphic rocks. The fine-earth portion and, therefore, most physical and chemical characteristics of the material are determined by the kind of source rock. For example, colluvium derived from igneous and metamorphic rocks is generally more sandy than material derived from eolian materials.

Woodland soils on mountain slopes include Gateview, Peeler, Pettingell, Tolland, and Tolvar. These are moderately deep to very deep soils that show significant degrees of soil development. Grimstone, Bullwark family, Ivywild, Ohman, and Tahana are moderately deep soils. Breece, Guanella, Kataka, Kittredge, Lininger, Trag, Troutdale, and Sprucedale soils are examples of mixed grass-woodland alluvial and/or colluvial soils.

Residuum is a dominant type of parent material in many areas of the mountains of the survey area. It is extensive on mountain slopes, backslopes, ridges, and mountaintops. Schist, gneiss, and granite are particularly important rock types in the soil survey area. The nature of the residual parent material and of the soils that formed in it depends to a great extent upon the source rock. Schist and granites yield a relatively high proportion of sand, limited quantities of clay, and a relatively low amount of silt. Examples of these types of soils are Cathedral, Hiwan, Resort, Rogert, and Legault.

Periglacial parent material is characteristic of a past, much colder climate. They can demonstrate extreme freeze-thaw features on the landscape. Surficial features on mountain slopes and ridges depict patterned ground: large soil polygons with assorted rock stripes (rocks oriented in narrow channels) alongside polygons, solifluction terraces, talus cones, and cryoturbation flow structures called stone-lobed terraces (Bennedict, 1970). Examples of these soils are Ivywild, Tolland, Mammoth, Ohman, and Tonahutu.

Glacial Outwash and Till are types of parent material of limited extent in the survey area. The materials generally consist of a high volume content of rounded cobbles, stones, and pebbles. The fine-earth fraction has a high content of sand, a relatively low content of silt, and limited amounts of clay. Some of these soils exhibit lamella, which is clay movement into thin lenses in the subsoils. Examples of these soils are Bendemeere, Mammoth, and Tonahutu.

Climate

Climate affects soil formation through its influence on the kind and amount of vegetation that grows, on the rate at which minerals weather, on the activity level of the micro-organisms, and on runoff and erosion.

Precipitation and temperature are the most important climatic factors, but wind frequency and velocity, humidity, and the amount of cloud cover also can and do impact soil formation.

The amount of precipitation that infiltrates downward in the soil profile is critical to the rate of weathering. Water is the medium in which chemical reactions take place. It is also the main source of hydrogen, a principal agent of weathering. Downward-moving water carries end products of chemical and biochemical reactions. The depth of weathering and the depth to which materials move through the soil depend to a great extent upon the effective precipitation. Temperature directly influences the rates of chemical and biological processes. In the higher elevations, many of the chemical and biologic reactions are slowed dramatically.

The survey area includes two distinct climatic zones. These are the lower mountains *(montane)*, and the subalpine zone of the high mountains.

The precipitation on the montane ranges from 16 to about 19 inches per year. The growing season is 75 to 100 days. South-facing slopes have shrubs, forbs, and grasses with scattered overstory of ponderosa pine and Rocky Mountain juniper. North-

facing slopes will be cooler with less grass and shrubs in the understory and more Rocky Mountain Douglas-fir and ponderosa pine.

On the soils of the high mountains *(subalpine)*, the average annual precipitation ranges from 19 to 23 inches. There are areas above 10,000 feet in elevation that have 23 to 35 inches or more of annual precipitation. The average temperature is cool, and effective precipitation is greater than on those slopes less than 8,200 feet in elevation due to less evaporation and transpiration. In most years the growing season is less than 75 days. Soil development, that specific to diagnostic sub-horizons, may be slower in development due to the colder soils and slowed chemical reactions. Decomposition of organic materials such as needles and leaves also is slowed, creating duff layers as thick as 4 inches. E horizons can be indicative of higher effective precipitation and of acidic leaching processes in the high mountain soils.

Living Organisms

Plants and animals are important factors of soil development. Dead plants and animals are decomposed by microorganisms and other soil fauna as food and then returned to the soil material. These processes result in the recycling of the nutrients used by plants, the addition of organic matter, and a darkening of the color in the upper part of the soil. Small animals, earthworms, and insects can retard the development of distinct soil horizons by mixing soil layers with burrowing activities. Soil microorganisms influence the development of soil structure. Nitrogen is added to the soil by microorganisms alone or in association with specific plant species that fix nitrogen on the plant roots.

Living vegetation helps to control erosion by stabilizing the soil surface with roots and rhizome structures, and is a host for fungi hyphae that exude polysaccharide-compounds that hold soil aggregates together. Plant roots form nearly vertical channels and increase the penetration of water and air into the soil. The canopy cover of trees and shrubs shades the soil and reduces soil temperature. In turn, the rate of evaporation of soil moisture is reduced, although cooler soil temperatures result in slower chemical processes and biochemical reactions.

Coniferous forests are dominant in the mountains at the higher elevations where the annual precipitation is 19 to 23 inches. The acidic litter of the conifers causes the leaching of silicate clays, some silt, and other minerals. Organic matter in this environment usually breaks down rapidly and only small amounts accumulate. These factors result in the formation of Alfisols and Inceptisols, such as Peeler, Tolvar, Bullwark family, Grimstone, Mammoth, Bendemeere, and Ohman soils.

Different soils have developed in the adjacent areas that support grasses instead of trees. Organic matter, or humus, resulting from decomposition of the grasses is more stable than that resulting from the needles from trees. This type of organic material accumulates more readily as vegetation is recycled. Soils in these areas have thicker, dark surface layers and are classified as Mollisols. Guanella, Pettingell, Gateview, Kittredge, and the Cumulic Cryaquolls soils are examples of Mollisols.

Soils in the lower montane zone commonly have a cover of grasses, shrubs, forbs, and scattered trees. The precipitation is less than in the subalpine zone, but more biomass can be returned to the soil. The shallow to bedrock soils will have a dark colored surface layer, but it will not be as thick as that on deep or very deep soils. Resort, Herbman, Cathedral and Rogert soils are examples. The deeper soils are Lone Rock, Kataka, Lininger, and Trag soils.

Relief

Relief affects the development of distinct soil horizons through its influence on soil drainage, erosion or deposition, soil temperature, and effective precipitation and runoff. The relief of the soil survey area is diverse, ranging from nearly level stream terraces to very steep mountains.

The potential for runoff and water erosion is low in the less sloping areas. Rainfall in these areas tends to percolate down through the soil profile. The movement of relatively greater amounts of water through the soil affects the differentiation of the profile into distinct horizons and results in changes in the mineralogy. Therefore, in soils that formed in the same parent material, the influence of relief can be seen in the differences in soil color, in the thickness of the solum, and in the degree of horizonation.

Low-lying areas often receive both surface runoff and excess moisture from the surrounding mountains or from streams. Some soils in flood plains and on low-lying terraces have fluctuating water tables and poor drainage, which results in reddish colored accumulations (mottles) and a grayish soil matrix. A

fluctuating water table, however, retards such genetic processes as the development of a clayey subsoil. For example, the Cumulic Cryaquolls have grayish colors and do not have a clayey subsoil. In marshy areas where stagnant water collects, the breakdown of organic matter is slowed dramatically and layers of peat build up.

The effective precipitation in low-lying areas results in lush grassy and grass-like vegetation. If the soil is well drained, natural recycling of vegetation results in a thick surface layer darkened by the buildup of humus. Breece soils, for example, have a thick dark surface layer.

In areas that have steep slopes, the potential for runoff and erosion is greater than in the lesser sloping areas. Shallow soils are common in the steeper areas because the soil material may erode almost as rapidly as it weathers from the underlying bedrock. Soils of the Hiwan, Raleigh, Cathedral, and Resort series are examples of shallow soils on steep slopes. Soils on steep slopes generally show less pedogenic development than soils in less sloping areas over the same period of time.

Aspect, a factor related to relief, influences soil formation through its effect on soil temperature and the capacity of soils to retain moisture. Soils on north-facing slopes are cooler and retain moisture longer than slopes on south-facing slopes. Therefore, the production of biomass is generally higher on north-facing slopes than on south-facing slopes.

Differences in soil temperature and moisture cause differences in the type of vegetation. For example, north-facing slopes in the mountains generally have a dense stand of conifers. Soils that have bleached subsurface layers, such as the Bendemeere soils, are common on north-facing slopes. On the warmer south-facing slopes, grasses and shrubs are the dominant type of vegetation. Kataka is an example of a soil on south-facing slopes.

Time

Compared to the cycle of human life, a long length of *time* is required for the genetic development of soils. In a geologic sense, however, soil genetic processes can be completed in a very short span of time. For example, the development of a thin argillic horizon, or of a subsoil in which the clay has accumulated, requires about 300 to 1,000 years.

The length of time required for a genetic process varies greatly from one soil to another because of the differences in climate, topography, parent material, and living organisms. Therefore, over a period of time a large degree of development may occur in one soil, but not in another. Conditions that favor a shorter period of time for development include a warm and humid climate, flat or gently sloping terrain, good internal drainage, unconsolidated parent material such as alluvial or glacial deposits, a moderate amount of clay, low pH, and vegetation that produces acidic residue. Characteristics used to compare the maturity of soils include color, degree of structure in the subsoil, evidence of clay movement, and the thickness of the surface layer and subsoil.

In the Georgetown area, differences in pedogenic development in relation to age are apparent in comparing Lone Rock and Lininger soils. Both soils formed under the same climate and support similar kinds of vegetation. Lone Rock soils, however, formed in more recent alluvium. These soils are young because little profile development has taken place, and the underlying material shows little or no evidence of clay accumulation. Lininger soils formed in older alluvium on the mountain slopes and valley side slopes. The greater amount of time since the deposit has resulted in a greater degree of development than in the Lone Rock soils. Clays and hydrous oxides have been leached from the surface materials and have accumulated in the subsoil of the Lininger soils.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon. Commonly, such soil formed in recent alluvium or on steep, rocky slopes.

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 cone. The material washed down the sides of mountains and hills by ephemeral streams and deposited at the mouth of gorges in the form of a moderately steep, conical mass descending equally in all directions from the point of issue.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha, alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for one month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction in which a slope faces.

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 position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

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 the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar

material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Canyon. A long, deep, narrow, very steep sided valley with high, precipitous walls in an area of high local relief.

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or "chain," of soils on a landscape that formed in similar kinds of parent material but have different characteristics as a result of differences in relief and drainage.

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 by the soil, expressed in terms of milliequivalents per 100 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.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Cirque. A semicircular, concave, bowllike area that has steep faces primarily resulting from glacial ice and snow abrasion.

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.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

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 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

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.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Congeliturbate. Soil material disturbed by frost action.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance

to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

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 and 40 or 80 inches.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

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.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of 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.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

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. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

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*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothill. A steeply sloping upland that has relief of as much as 1,000 feet (300 meters) and fringes a mountain range or high-plateau escarpment.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

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.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey

and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

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 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 is 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. An explanation of the subdivisions is given in the "Soil Survey Manual." 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.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

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.

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, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it 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 potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

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 the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

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.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Kame. An irregular, short ridge or hill of stratified glacial drift.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) 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.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

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.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

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. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

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.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

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. 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 above surrounding lowlands, commonly of restricted summit area (relative to a plateau) and generally having steep sides. A mountain can occur as a single, isolated mass or in a group forming a chain or range.

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.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nose slope. A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent.

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

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.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

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 meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permafrost. Layers of soil, or even bedrock, occurring in arctic or subarctic regions, in which a temperature below freezing has existed continuously for a long time.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 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, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on 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.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

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.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

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	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly 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

Redoximorphic concentrations. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill generally is a few inches deep and not wide enough to be an obstacle to farm machinery.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant 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.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

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.

Saprolite. Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

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.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell potential (in map unit descriptions). A measure of the potential expansion of a soil upon wetting, also termed "linear extensibility." It is the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is expressed as the volume change, as a percent of the whole soil, from the water content of a clod at 1/3-bar tension (33kPa) to oven dryness. As used in the map unit descriptions, classes of shrink-swell potential are based on the thickest layer between a depth of 10 and 60 inches. The classes and their respective values of percent linear extensibility are:

Low	0 to 3
Moderate	3 to 6
High	6 to 9
Very high	more than 9

Side slope. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

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.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

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.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

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.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

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 material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

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 grained* (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.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

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 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the 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 that is too thin for the specified use.

Till plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which 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.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

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.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and precipitation data

TAPS Station: Cabin Creek, CO1186
Starting year: 1968
Ending year.: 1990
Temperature: 23 years available out of 23 requested in this analysis
Precipitation: 23 years available out of 23 requested in this analysis

Month	Temperature (Degrees F.) avg. daily max.	avg. daily min.	avg.	2 yrs.in 10 will have max. temp. >than	2 yrs.in 10 will have min. temp. <than	avg. # of grow. deg. days*	Precipitation (Inches) avg.	2 yrs.in 10 will have less than	2 yrs.in 10 will have more than	avg. # of days w/.1 or more	avg. total snow fall
January	31.0	10.3	20.7	51	-19	0	0.66	0.22	1.02	2	12.0
February	33.0	11.4	22.2	50	-16	0	0.73	0.32	1.08	2	13.5
March	36.5	14.4	25.4	55	-11	2	1.47	0.82	2.04	4	24.2
April	43.3	21.4	32.4	60	-4	19	1.91	1.22	2.53	5	20.6
May	52.8	30.3	41.5	68	13	116	2.25	0.76	3.49	5	9.7
June	64.1	38.6	51.4	78	23	343	1.58	0.51	2.45	4	2.3
July	68.8	43.3	56.1	80	34	489	2.55	1.70	3.34	7	0.0
August	67.0	42.0	54.5	76	31	450	2.61	1.56	3.55	8	0.0
September	60.4	35.8	48.1	74	17	258	1.67	0.85	2.38	5	3.4
October	50.0	27.2	38.6	66	3	75	1.34	0.67	1.92	3	11.2
November	38.0	16.7	27.3	58	-9	7	1.02	0.56	1.43	3	15.6
December	32.2	12.2	22.2	52	-14	0	0.82	0.38	1.20	2	14.3
Yearly											
Average	48.1	25.3	36.7	---	---	---	----	----	----	---	---
Extreme	84	-28	---	82	-23	---	----	----	----	---	---
Total	---	---	---	---	---	1760	18.60	15.64	21.37	50	126.7

Average # of days per year with at least 1 inch of snow on the ground: 101

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minumum 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 deg. F)

Table 1.--Temperature and precipitation data--Continued

TAPS Station: Evergreen, CO2790
Starting year: 1961
Ending year: 1990
Temperature: 30 years available out of 30 requested in this analysis
Precipitation: 30 years available out of 30 requested in this analysis

Month	Temperature (Degrees F.)						Precipitation (Inches)				
	avg. daily max.	avg. daily min.	avg.	2 yrs.in 10 will have max. temp. >than	2 yrs.in 10 will have min. temp. <than	avg. # of grow. deg. days*	avg.	2 yrs.in 10 will have less than	2 yrs.in 10 will have more than	avg. # of days w/.1 or more	avg. total snow fall
January	44.2	9.2	26.7	65	-22	5	0.50	0.17	0.77	1	8.0
February	45.5	12.0	28.7	66	-17	11	0.72	0.32	1.06	2	10.8
March	48.9	17.1	33.0	72	-10	31	1.60	0.70	2.36	4	19.3
April	56.8	25.3	41.0	76	1	112	1.97	1.19	2.81	4	12.8
May	64.7	33.0	48.9	83	18	286	2.79	1.14	4.18	6	3.9
June	75.2	40.6	57.9	90	29	536	2.22	1.07	3.21	5	0.2
July	81.2	46.2	63.7	92	35	730	2.47	1.23	3.55	6	0.0
August	79.0	44.7	61.8	90	34	677	2.19	1.08	3.15	6	0.0
September	71.6	36.5	54.1	86	20	427	1.48	0.52	2.28	3	1.5
October	62.5	26.5	44.5	79	6	184	1.33	0.35	2.11	2	7.8
November	51.0	17.8	34.4	71	-6	38	0.97	0.28	1.52	2	12.8
December	44.8	10.4	27.6	65	-19	8	0.77	0.32	1.20	2	9.5
Yearly											
Average	60.4	26.6	43.5	---	---	---	----	----	----	---	---
Extreme	95	-38	---	93	-25	---	----	----	----	---	---
Total	---	---	---	---	---	3045	19.00	14.10	21.46	43	86.5

Average # of days per year with at least 1 inch of snow on the ground: 21

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minumum 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 deg. F)

Table 2.--Freeze dates

FROST Station: Cabin Creek, CO1186
Starting year: 1968
Ending year: 1990
Requested years of data: 23
Available years of data: 23

Spring:			
Years of missing data	24°: 1	28°: 1	32°: 1
Years with no occurrence	24°: 0	28°: 0	32°: 0
Data years used	24°: 22	28°: 22	32°: 22
Fall:			
Years of missing data	24°: 0	28°: 0	32°: 0
Years with no occurrence	24°: 0	28°: 0	32°: 0
Data years used	24°: 23	28°: 23	32°: 23

	Temperature		
Probability	24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	June 4	June 22	July 5
2 years in 10 later than--	May 29	June 17	June 30
5 years in 10 later than--	May 19	June 7	June 19
First freezing temperature in fall:			
1 yr. in 10 earlier than--	September 8	September 4	August 27
2 yrs. in 10 earlier than--	September 15	September 9	September 1
5 yrs. in 10 earlier than--	September 28	September 20	September 10

Table 2.--Freeze dates--Continued

FROST Station : Evergreen, CO2790
Starting year: 1961
Ending year: 1990
Requested years of data: 30
Available years of data: 30

Spring:			
Years of missing data	24°: 3	28°: 3	32°: 1
Years with no occurrence	24°: 0	28°: 0	32°: 0
Data years used	24°: 27	28°: 27	32°: 29
Fall:			
Years of missing data	24°: 3	28°: 3	32°: 3
Years with no occurrence	24°: 0	28°: 0	32°: 0
Data years used	24°: 27	28°: 27	32°: 27

	Temperature		
Probability	24°F or lower	28°F or lower	32°F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 20	June 5	June 21
2 years in 10 later than--	May 15	May 31	June 16
5 years in 10 later than--	May 5	May 21	June 6
First freezing temperature in fall:			
1 year in 10 earlier than--	September 21	September 9	August 28
2 years in 10 earlier than-	September 25	September 13	September 2
5 years in 10 earlier than-	October 4	September 22	September 13

Table 3.--Growing season

GROWTH Station: Cabin Creek, CO1186
Starting year: 1968
Ending year: 1990
Requested years of data: 23
Available years of data: 23
Years with missing data 24°: 1 28°: 1 32°: 1
Years with no occurrence 24°: 0 28°: 0 32°: 0
Data years used 24°: 22 28°: 22 32°: 22

	Daily Minimum Temperature		
Probability	# days > 24°F	# days > 28°F	# days > 32°F
9 years in 10	104	86	60
8 years in 10	114	93	68
5 years in 10	132	105	83
2 years in 10	150	117	98
1 year in 10	160	123	106

GROWTH Station: Evergreen, CO2790
Starting year: 1961
Ending year: 1990
Requested years of data: 30
Available years of data: 30
Years with missing data 24°: 4 28°: 4 32°: 3
Years with no occurrence 24°: 0 28°: 0 32°: 0
Data years used 24°: 26 28°: 26 32°: 27

	Daily Minimum Temperature		
Probability	# days > 24°F	# days > 28°F	# days > 32°F
9 years in 10	130	99	72
8 years in 10	137	108	81
5 years in 10	151	124	98
2 years in 10	166	140	115
1 year in 10	173	148	124

Table 4.--Acreage and proportionate extent of the soils

Map symbol	Soil name	Clear Creek County	Gilpin County	Park County	Total Area	Total Extent
		Acres	Acres	Acres	Acres	Pct.
1	Arents-Dumps, mine complex, 5 to 80 percent slopes	435	368	0	803	0.7
2	Bendemeere-Tolland complex, 30 to 70 percent slopes	5,443	350	0	5,793	5.0
3	Breece gravelly sandy loam, 3 to 40 percent slopes	322	25	0	347	0.3
4	Cathedral-Rock outcrop complex, 5 to 30 percent slopes	100	298	0	398	0.3
5	Cathedral-Rock outcrop complex, 30 to 70 percent slopes	5,478	1,816	0	7,294	6.2
6	Cumulic Cryaquolls, 0 to 3 percent slopes	741	525	0	1,266	1.1
7	Gateview-Kittredge complex, 20 to 45 percent slopes	238	314	40	592	0.5
8	Grimstone-Bullwark family complex, 9 to 30 percent slopes	0	271	0	271	0.2
9	Grimstone-Bullwark family complex, 30 to 60 percent slopes	3	1,289	0	1,292	1.1
10	Grimstone-Hiwan-Rock outcrop complex, 30 to 60 percent slopes	0	720	0	720	0.6
11	Grimstone-Peeler-Rock outcrop complex, 15 to 30 percent slopes	0	807	0	807	0.7
12	Herbman gravelly sandy loam, 3 to 9 percent slopes	0	259	0	259	0.2
13	Herbman-Rock outcrop complex, 9 to 15 percent slopes	95	217	0	312	0.3
14	Herbman-Rock outcrop complex, 15 to 30 percent slopes	444	470	0	914	0.8
15	Hiwan-Rock outcrop-Bendemeere complex, 30 to 70 percent slopes	404	0	0	404	0.3
16	Ivywild-Legault-Rock outcrop complex, 30 to 60 percent slopes	652	0	71	723	0.6
17	Ivywild-Mammoth-Legault complex, 30 to 60 percent slopes	811	0	12	823	0.7
18	Kataka-Resort-Rock outcrop complex, 30 to 70 percent slopes	858	640	0	1,498	1.3
19	Kittredge-Guanella complex, 3 to 9 percent slopes	371	608	0	979	0.8
20	Kittredge-Guanella complex, 9 to 30 percent slopes	603	247	0	850	0.7
21	Legault very gravelly sandy loam, 5 to 15 percent slopes	331	2,537	0	2,868	2.5
22	Legault very gravelly sandy loam, 15 to 30 percent slopes	566	2,399	0	2,965	2.5

See footnote at end of table.

Table 4.--Acreage and proportionate extent of the soils--Continued

Map symbol	Soil name	Clear Creek County	Gilpin County	Park County	Total	
					Area	Extent
		Acres	Acres	Acres	Acres	Pct.
23	Legault-Rock outcrop complex, 30 to 80 percent slopes	1,948	5,691	47	7,686	6.6
24	Lininger-Breece gravelly sandy loams, 3 to 12 percent slopes	663	450	29	1,142	1.0
25	Lininger-Resort complex, 5 to 15 percent slopes	255	124	0	379	0.3
26	Lininger-Trag gravelly sandy loams, 15 to 30 percent slopes	390	17	0	407	0.3
27	Lone Rock-Breece gravelly sandy loams, 2 to 9 percent slopes	1,145	0	0	1,145	1.0
28	Lone Rock-Breece gravelly sandy loams, 9 to 15 percent slopes	354	16	0	370	0.3
30	Mammoth-Ohman-Bendemeere complex, 15 to 30 percent slopes	1,573	122	0	1,695	1.5
31	Mammoth-Ohman-Bendemeere complex, 30 to 60 percent slopes	6,049	57	0	6,106	5.2
32	Mammoth-Ohman-Rock outcrop complex, 30 to 60 percent slopes	4,481	0	0	4,481	3.8
33	Ohman-Ivywild very gravelly sandy loams, 30 to 60 percent slopes	1,433	0	0	1,433	1.2
34	Ohman-Legault very gravelly sandy loams, 15 to 30 percent slopes	396	1,095	0	1,491	1.3
35	Ohman-Legault very gravelly sandy loams, 30 to 60 percent slopes	7,307	4,355	0	11,662	10.0
36	Pettingell-Rogert-Rock outcrop complex, 30 to 80 percent slopes	830	0	0	830	0.7
37	Raleigh very gravelly sandy loam, 9 to 15 percent slopes	46	36	0	82	*
38	Raleigh very gravelly sandy loam, 15 to 30 percent slopes	348	9	0	357	0.3
39	Raleigh very gravelly sandy loam, 30 to 50 percent slopes	994	97	0	1,091	0.9
40	Raleigh-Rock outcrop complex, 50 to 70 percent slopes	1,563	6	0	1,569	1.3
41	Redfeather-Legault complex, 30 to 70 percent slopes	1,032	292	291	1,615	1.4
42	Redfeather-Legault-Tolvar complex, 12 to 30 percent slopes	324	46	150	520	0.4
43	Resort very gravelly sandy loam, 3 to 10 percent slopes	0	261	0	261	0.2
44	Resort very gravelly sandy loam, 10 to 30 percent slopes	229	1,075	0	1,304	1.1
45	Resort very gravelly sandy loam, 15 to 30 percent south slopes	1,611	26	0	1,637	1.4

See footnote at end of table.

Table 4.--Acreage and proportionate extent of the soils--Continued

Map symbol	Soil name	Clear Creek County	Gilpin County	Park County	Total Area	Total Extent
		Acres	Acres	Acres	Acres	Pct.
46	Resort very stony sandy loam, 30 to 50 percent slopes	477	433	0	910	0.8
47	Resort-Cathedral complex, 30 to 60 percent slopes	52	1,514	0	1,566	1.3
48	Resort-Cathedral-Rubble land complex, 30 to 60 percent slopes	2,155	4,612	0	6,767	5.8
49	Rock outcrop, 30 to 100 percent slopes	234	118	0	352	0.3
50	Rock outcrop-Cathedral-Resort complex, 30 to 70 percent slopes	3,913	345	0	4,258	3.6
51	Rock outcrop-Resort complex, 30 to 80 percent slopes	809	0	0	809	0.7
52	Rock outcrop-Rubble land-Cathedral complex, 15 to 40 percent slopes	173	0	0	173	0.1
53	Rock outcrop-Rubble land-Cathedral complex, 40 to 100 percent slopes	1,829	7	0	1,836	1.6
54	Rock outcrop-Tolland complex, 30 to 100 percent slopes	1,340	0	0	1,340	1.1
55	Rogert-Herbman-Rock outcrop complex, 30 to 70 percent slopes	1,724	753	0	2,477	2.1
56	Tahana-Legault-Rock outcrop complex, 30 to 70 percent slopes	11,579	1,891	0	13,470	11.5
57	Tolland-Rock outcrop complex, 30 to 80 percent slopes	1,576	0	0	1,576	1.3
58	Tonahutu-Ohman complex, 30 to 60 percent slopes	428	0	0	428	0.4
59	Trag gravelly sandy loam, 3 to 15 percent slopes	243	0	0	243	0.2
60	Troutdale-Rogert-Kittredge complex, 3 to 15 percent slopes	137	242	0	379	0.3
61	Troutdale-Sprucedale gravelly sandy loams, 3 to 15 percent slopes	165	4	0	169	0.1
62	Typic Cryaquents-Cumulic Cryaquolls complex, 0 to 3 percent slopes	481	0	0	481	0.4
63	Urban land-Breece complex, 0 to 9 percent slopes	0	26	0	26	*
64	Water	119	60	0	179	0.2
	Total	78,300	37,940	640	116,880	100.0

* Less than 0.1 percent.

Table 5.--Ecological sites and characteristic native vegetation

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Canopy cover
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		Pct.
1:								
Arents----------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Dumps, mine-----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
2:								
Bendemeere------	PSME/JAAM (Rocky Mountain Douglas-fir, cliffbush)	Favorable	400	cliffbush		15	Rocky Mountain Douglas-fir	35
		Normal	250	common juniper		10	lodgepole pine	5
		Unfavorable	175	kinnikinnick		8	ponderosa pine	5
				Ross' sedge		5		
				Woods' rose		5		
				mallow ninebark		5		
				prairie sagewort		5		
				quaking aspen		2		
Tolland---------	ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)	Favorable	300	Ross' sedge		7	subalpine fir	15
		Normal	200	common juniper		7	lodgepole pine	10
		Unfavorable	125	Woods' rose		5	Engelmann's spruce	5
				kinnikinnick		5	Rocky Mountain Douglas-fir	5
				dwarf blueberry		3		
				heartleaf arnica		2		
3:								
Breece----------	Loamy Park	Favorable	2,000	Parry's danthonia	25		---	---
		Normal	1,600	Arizona fescue	15			
		Unfavorable	1,300	Letterman's needlegrass	15			
				mountain muhly	10			
				needleandthread	5			
				slender wheatgrass	5			
				muttongrass	4			
				elk sedge	2			
4:								
Cathedral-------	Stony Loam	Favorable	1,600	mountain muhly	20		---	---
		Normal	1,150	Arizona fescue	15			
		Unfavorable	800	Griffith wheatgrass	10			
				Parry's danthonia	10			
				mountain mahogany	6			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
				yucca	3			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
5:								
Cathedral-------	Stony Loam	Favorable	1,600	mountain muhly	20		---	---
		Normal	1,250	Arizona fescue	15			
		Unfavorable	800	Griffith wheatgrass	10			
				Parry's danthonia	10			
				mountain mahogany	6			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
				yucca	3			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
6:								
Cumulic cryaquolls-----	Mountain Meadow	Favorable	4,000	tufted hairgrass	40		---	---
		Normal	3,000	Nebraska sedge	30			
		Unfavorable	2,400	Baltic rush	10			
				American mannagrass	3			
				smallwing sedge	2			
7:								
Gateview--------	PICO/SHCA (lodgepole pine, russet buffaloberry)	Favorable	850	russet buffaloberry		20	lodgepole pine	20
		Normal	550	Thurber's fescue		10	quaking aspen	20
		Unfavorable	375	common juniper		10	Rocky Mountain Douglas-fir	10
				spike trisetum		7		
				Woods' rose		5		
				Ross' sedge		3		
Kittredge-------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
8:								
Grimstone-------	PICO/ARUV (lodgepole pine, kinnikinnick)	Favorable	250	kinnikinnick		10	lodgepole pine	35
		Normal	175	common juniper		8	Rocky Mountain Douglas-fir	10
		Unfavorable	100	Ross' sedge		5	quaking aspen	3
				Woods' rose		5		
				bluegrass		5		
				spike fescue		3		
Bullwark family-	PICO/JUCO (lodgepole pine, common juniper)	Favorable	300	common juniper		15	lodgepole pine	35
		Normal	200	kinnikinnick		10	Rocky Mountain Douglas-fir	10
		Unfavorable	100	Ross' sedge		5		
				bluegrass		5		
				Woods' rose		4		
				spike fescue		3		
				mountain thermopsis		1		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
9:								
Grimstone-------	PICO/ARUV (lodgepole pine, kinnikinnick)	Favorable	250	kinnikinnick		10	lodgepole pine	35
		Normal	175	common juniper		8	Rocky Mountain Douglas-fir	10
		Unfavorable	100	Ross' sedge		5	quaking aspen	3
				Woods' rose		5		
				bluegrass		5		
				spike fescue		3		
Bullwark family-	PICO/JUCO (lodgepole pine, common juniper)	Favorable	300	common juniper		15	lodgepole pine	35
		Normal	200	kinnikinnick		10	Rocky Mountain Douglas-fir	10
		Unfavorable	100	Ross' sedge		5		
				bluegrass		5		
				Woods' rose		4		
				spike fescue		3		
				mountain thermopsis		1		
10:								
Grimstone-------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	300	dwarf blueberry		10	subalpine fir	25
		Normal	200	grouse whortleberry		10	Engelmann's spruce	10
		Unfavorable	125	Ross' sedge		5	lodgepole pine	10
				common juniper		5		
				kinnikinnick		3		
Hiwan-----------	PICO/ARUV (lodgepole pine, kinnikinnick)	Favorable	225	kinnikinnick		10	lodgepole pine	30
		Normal	150	bluegrass		5	Rocky Mountain Douglas-fir	10
		Unfavorable	100	common juniper		5		
				sedge		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
11:								
Grimstone-------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	300	grouse whortleberry		10	subalpine fir	25
		Normal	225	Oregongrape		5	lodgepole pine	17
		Unfavorable	125	common juniper		5	Engelmann's spruce	10
				kinnikinnick		5	Rocky Mountain Douglas-fir	3
Peeler----------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	400	grouse whortleberry		10	subalpine fir	30
		Normal	250	Oregongrape		5	lodgepole pine	20
		Unfavorable	175	Ross' sedge		5	Engelmann's spruce	10
				common juniper		5	Rocky Mountain Douglas-fir	3
				kinnikinnick		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
12:								
Herbman---------	PSME/ARUV-JUCO (Rocky Mountain Douglas/kinnikinnick-fir/common juniper)	Favorable	1,200	bluebunch wheatgrass		15	Rocky Mountain Douglas-fir	5
		Normal	1,000	needlegrass		15	ponderosa pine	5
		Unfavorable	800	bluegrass		10		
				fescue		10		
				kinnikinnick		10		
				common juniper		5		
				other shrubs		5		
				pine dropseed		5		
				prairie sagewort		5		
				sedge		5		
				snowberry		5		
				other perennial forbs		3		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
13:								
Herbman---------	PSME/ARUV-JUCO (Rocky Mountain Douglas/kinnikinnick-fir/common juniper)	Favorable	1,200	bluebunch wheatgrass		15	Rocky Mountain Douglas-fir	5
		Normal	800	needlegrass		15	ponderosa pine	5
		Unfavorable	700	bluegrass		10	quaking aspen	3
				fescue		10		
				kinnikinnick		10		
				common juniper		5		
				other perennial forbs		5		
				pine dropseed		5		
				sedge		5		
				snowberry		5		
				other shrubs		3		
				prairie sagewort		2		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
14:								
Herbman---------	PSME/ARUV-JUCO (Rocky Mountain Douglas/kinnikinnick-fir/common juniper)	Favorable	1,200	bluebunch wheatgrass		15	Rocky Mountain Douglas-fir	5
		Normal	1,000	needlegrass		15	quaking aspen	5
		Unfavorable	850	bluegrass		10	ponderosa pine	3
				fescue		10		
				kinnikinnick		10		
				common juniper		5		
				other perennial forbs		5		
				pine dropseed		5		
				sedge		5		
				snowberry		5		
				other shrubs		3		
				prairie sagewort		2		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
15:								
Hiwan----------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	200	common juniper		20	lodgepole pine	50
		Normal	150	Woods' rose		10	limber pine	5
		Unfavorable	100	quaking aspen		7		
				bluegrass		5		
				mallow ninebark		5		
				mountain snowberry		4		
				kinnikinnick		2		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Bendemeere------	PSMEG/JUCO (Rocky Mountain Douglas-fir, common juniper)	Favorable	300	common juniper		15	Rocky Mountain Douglas-fir	25
		Normal	200	Woods' rose		5	lodgepole pine	15
		Unfavorable	125	kinnikinnick		5	ponderosa pine	2
				quaking aspen		5		
				mountain snowberry		4		
				mallow ninebark		2		
				lupine		1		
16:								
Ivywild---------	PICO/VASC (lodgepole pine, grouse whortleberry)	Favorable	300	whortleberry		15	lodgepole pine	25
		Normal	200	dwarf blueberry		10	Engelmann's spruce	10
		Unfavorable	100	common juniper		3	subalpine fir	10
				kinnikinnick		2		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Canopy cover
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		Pct.
16:								
Legault---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	250	common juniper		20	lodgepole pine	20
		Normal	150	kinnikinnick		5	Rocky Mountain Douglas-fir	15
		Unfavorable	90	lupine		3		
				arnica		2		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
17:								
Ivywild---------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	400	grouse whortleberry		15	subalpine fir	35
		Normal	275	common juniper		5	Engelmann's spruce	15
		Unfavorable	150	dwarf blueberry		5	lodgepole pine	10
				kinnikinnick		2		
Mammoth---------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	450	grouse whortleberry		20	subalpine fir	35
		Normal	300	common juniper		5	Engelmann's spruce	15
		Unfavorable	200	dwarf blueberry		5	lodgepole pine	10
				elk sedge		2		
				lupine		2		
				kinnikinnick		1		
Legault---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	300	common juniper		25	lodgepole pine	25
		Normal	150	whortleberry		5	Engelmann's spruce	10
		Unfavorable	100	cliffbush		3	subalpine fir	10
				russet buffaloberry		2		
				kinnikinnick		1		
18:								
Kataka----------	Brushy Loam	Favorable	1,600	mountain muhly	25		---	---
		Normal	1,200	Arizona fescue	15			
		Unfavorable	900	Parry's danthonia	10			
				mountain mahogany	10			
				western wheatgrass	10			
				western snowberry	8			
				common chokecherry	5			
				other perennial forbs	4			
				Woods' rose	3			
Resort----------	Stony Loam	Favorable	2,000	Arizona fescue	15		---	---
		Normal	1,400	mountain muhly	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
19:								
Kittredge-------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
Guanella--------	Loamy Park	Favorable	2,000	Parry's danthonia	25		---	---
		Normal	1,600	Arizona fescue	15			
		Unfavorable	1,300	Letterman's needlegrass	15			
				mountain muhly	10			
				needleandthread	5			
				slender wheatgrass	5			
				muttongrass	4			
				elk sedge	2			
20:								
Kittredge-------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
Guanella--------	Loamy Park	Favorable	2,000	Parry's danthonia	25		---	---
		Normal	1,600	Arizona fescue	15			
		Unfavorable	1,300	Letterman's needlegrass	15			
				mountain muhly	10			
				needleandthread	5			
				slender wheatgrass	5			
				muttongrass	4			
				elk sedge	2			
21:								
Legault---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	200	common juniper		20	lodgepole pine	35
		Normal	150	cliffbush		5	Rocky Mountain Douglas-fir	10
		Unfavorable	100	whortleberry		5		
				elk sedge		3		
				kinnikinnick		3		
				spike fescue		3		
22:								
Legault---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	200	common juniper		20	lodgepole pine	35
		Normal	150	cliffbush		5	Rocky Mountain Douglas-fir	10
		Unfavorable	100	whortleberry		5		
				elk sedge		3		
				kinnikinnick		3		
				spike fescue		3		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
23:								
Legault---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	200	common juniper		20	lodgepole pine	40
		Normal	150	cliffbush		5	subalpine fir	10
		Unfavorable	100	whortleberry		5	Engelmann's spruce	5
				elk sedge		3		
				kinnikinnick		3		
				spike fescue		3		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
24:								
Lininger--------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
Breece----------	Loamy Park	Favorable	2,000	Parry's danthonia	25		---	---
		Normal	1,600	Arizona fescue	15			
		Unfavorable	1,300	Letterman's needlegrass	15			
				mountain muhly	10			
				needleandthread	5			
				slender wheatgrass	5			
				muttongrass	4			
				elk sedge	2			
25:								
Lininger--------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
Resort----------	Stony Loam	Favorable	2,000	Arizona fescue	15		---	---
		Normal	1,400	mountain muhly	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Canopy cover
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		Pct.
26:								
Lininger--------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
Trag----------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
27:								
Lone rock-------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
Breece----------	Loamy Park	Favorable	2,000	Parry's danthonia	25		---	---
		Normal	1,600	Arizona fescue	15			
		Unfavorable	1,300	Letterman's needlegrass	15			
				mountain muhly	10			
				needleandthread	5			
				slender wheatgrass	5			
				muttongrass	4			
				elk sedge	2			
28:								
Lone rock-------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
Breece----------	Loamy Park	Favorable	2,000	Parry's danthonia	25		---	---
		Normal	1,600	Arizona fescue	15			
		Unfavorable	1,300	Letterman's needlegrass	15			
				mountain muhly	10			
				needleandthread	5			
				slender wheatgrass	5			
				muttongrass	4			
				elk sedge	2			

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Canopy cover
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		Pct.
30:								
Mammoth---------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	350	whortleberry		15	lodgepole pine	30
		Normal	250	common juniper		5	subalpine fir	15
		Unfavorable	150	dwarf blueberry		5	Engelmann's spruce	8
				elk sedge		5		
				russet buffaloberry		5		
				lupine		2		
Ohman----------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	300	whortleberry		15	lodgepole pine	30
		Normal	225	dwarf blueberry		10	subalpine fir	15
		Unfavorable	150	common juniper		8	Engelmann's spruce	7
				elk sedge		5	Rocky Mountain Douglas-fir	3
				russet buffaloberry		5		
				lupine		2		
Bendemeere------	ABLA-PIEN/VACE (subalpine fir, Engelmann's spruce, dwarf blueberry)	Favorable	400	dwarf blueberry		10	lodgepole pine	40
		Normal	250	russet buffaloberry		8	subalpine fir	10
		Unfavorable	150	common juniper		5	Engelmann's spruce	5
				elk sedge		5		
				lupine		3		
31:								
Mammoth---------	PICO/SHCA (lodgepole pine, russet buffaloberry)	Favorable	450	russet buffaloberry		15	lodgepole pine	55
		Normal	325	dwarf blueberry		12	Rocky Mountain Douglas-fir	5
		Unfavorable	250	common juniper		5		
				lupine		5		
				elk sedge		3		
				kinnikinnick		3		
Ohman----------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	400	grouse whortleberry		15	lodgepole pine	25
		Normal	300	russet buffaloberry		15	Engelmann's spruce	10
		Unfavorable	200	dwarf blueberry		10	subalpine fir	10
				common juniper		5		
				lupine		5		
				elk sedge		3		
				kinnikinnick		2		
Bendemeere------	PICO/SHCA (lodgepole pine, russet buffaloberry)	Favorable	500	dwarf blueberry		15	lodgepole pine	40
		Normal	350	russet buffaloberry		15	Engelmann's spruce	15
		Unfavorable	225	common juniper		5	subalpine fir	15
				mallow ninebark		5		
				elk sedge		3		
				Woods' rose		2		
				lupine		2		
				quaking aspen		2		
				heartleaf arnica		1		
32:								
Mammoth---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	400	common juniper		20	lodgepole pine	30
		Normal	250	grouse whortleberry		10	subalpine fir	20
		Unfavorable	150	whortleberry		5		
				russet buffaloberry		3		
				elk sedge		1		
				kinnikinnick		1		
				lupine		1		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
32:								
Ohman----------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	350	grouse whortleberry		15	lodgepole pine	25
		Normal	250	common juniper		10	subalpine fir	15
		Unfavorable	175	heartleaf arnica		8	Engelmann's spruce	5
				russet buffaloberry		3		
				lupine		2		
				elk sedge		1		
				kinnikinnick		1		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
33:								
Ohman----------	ABLA-PIEN/ARCO9 (subalpine fir, Engelmann's spruce, heartleaf arnica)	Favorable	350	dwarf blueberry		20	Engelmann's spruce	30
		Normal	250	common juniper		5	subalpine fir	20
		Unfavorable	125	elk sedge		5		
				grouse whortleberry		5		
				lupine		3		
Ivywild---------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	300	dwarf blueberry		20	Engelmann's spruce	25
		Normal	200	grouse whortleberry		10	lodgepole pine	10
		Unfavorable	100	common juniper		5	subalpine fir	10
				lupine		3		
34:								
Ohman----------	ABLA-PIEN/VACE (subalpine fir, Engelmann's spruce, dwarf blueberry)	Favorable	300	dwarf blueberry		25	lodgepole pine	35
		Normal	225	elk sedge		10	subalpine fir	15
		Unfavorable	150	common juniper		5	Engelmann's spruce	10
				lupine		3		
Legault---------	PICO/VASC (lodgepole pine, grouse whortleberry)	Favorable	250	dwarf blueberry		15	lodgepole pine	45
		Normal	125	grouse whortleberry		10	subalpine fir	10
		Unfavorable	75	elk sedge		8	Rocky Mountain Douglas-fir	4
				common juniper		7		
				Oregongrape		5		
				lupine		5		
35:								
Ohman----------	ABLA-PIEN/VACE (subalpine fir, Engelmann's spruce, dwarf blueberry)	Favorable	300	dwarf blueberry		25	lodgepole pine	25
		Normal	225	elk sedge		10	subalpine fir	20
		Unfavorable	150	common juniper		5	Engelmann's spruce	15
				lupine		3		
Legault---------	PICO/VASC (lodgepole pine, grouse whortleberry)	Favorable	250	grouse whortleberry		15	lodgepole pine	45
		Normal	125	common juniper		10	subalpine fir	10
		Unfavorable	75	lupine		7	Rocky Mountain Douglas-fir	3
				Oregongrape		5		
				elk sedge		3		
36:								
Pettingell------	Stony Loam	Favorable	2,000	mountain muhly	25		---	---
		Normal	1,400	Arizona fescue	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
36:								
Rogert----------	Stony Loam	Favorable	2,000	mountain muhly	25		---	---
		Normal	1,400	Arizona fescue	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
37:								
Raleigh---------	Shallow Loam	Favorable	650	mountain mahogany	35		---	---
		Normal	500	Arizona fescue	15			
		Unfavorable	400	prairie sagewort	10			
				common juniper	5			
				pussytoes	5			
38:								
Raleigh---------	Shallow Loam	Favorable	650	mountain mahogany	35		---	---
		Normal	500	Arizona fescue	15			
		Unfavorable	400	prairie sagewort	10			
				common juniper	5			
				pussytoes	5			
39:								
Raleigh---------	Shallow Loam	Favorable	650	mountain mahogany	35		---	---
		Normal	500	Arizona fescue	15			
		Unfavorable	400	prairie sagewort	10			
				common juniper	5			
				pussytoes	5			
40:								
Raleigh---------	Shallow Loam	Favorable	650	mountain mahogany	35		---	---
		Normal	500	Arizona fescue	15			
		Unfavorable	400	prairie sagewort	10			
				common juniper	5			
				pussytoes	5			
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
41:								
Redfeather------	PICO/VACE (lodgepole pine, dwarf blueberry)	Favorable	325	russet buffaloberry		30	lodgepole pine	40
		Normal	225	common juniper		10	Rocky Mountain Douglas-fir	25
		Unfavorable	165	dwarf blueberry		10		
				kinnikinnick		10		
				elk sedge		3		
				lupine		2		
Legault---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	200	common juniper		25	lodgepole pine	30
		Normal	150	whortleberry		3	Rocky Mountain Douglas-fir	10
		Unfavorable	75	elk sedge		2		
				cliffbush		1		
				kinnikinnick		1		
				russet buffaloberry		1		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
42:								
Redfeather------	PICO/VACE (lodgepole pine, dwarf blueberry)	Favorable	325	common juniper		15	lodgepole pine	45
		Normal	225	dwarf blueberry		5	Rocky Mountain Douglas-fir	20
		Unfavorable	165	elk sedge		5		
				grouse whortleberry		5		
				kinnikinnick		5		
				russet buffaloberry		5		
				lupine		2		
Legault---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	200	common juniper		25	lodgepole pine	30
		Normal	150	whortleberry		5	Rocky Mountain Douglas-fir	10
		Unfavorable	75	cliffbush		2		
				elk sedge		2		
				kinnikinnick		1		
				russet buffaloberry		1		
Tolvar----------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	325	grouse whortleberry		10	subalpine fir	25
		Normal	200	common juniper		5	Engelmann's spruce	20
		Unfavorable	90	lupine		2	lodgepole pine	5
				elk sedge		1		
				kinnikinnick		1		
				russet buffaloberry		1		
43:								
Resort----------	Stony Loam	Favorable	2,000	Arizona fescue	15		---	---
		Normal	1,400	mountain muhly	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
44:								
Resort----------	Stony Loam	Favorable	2,000	Arizona fescue	15		---	---
		Normal	1,400	mountain muhly	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
45:								
Resort----------	PIPO/PUTR (ponderosa pine, antelope bitterbrush)	Favorable	1,200	mountain muhly		30	ponderosa pine	15
		Normal	900	Arizona fescue		10	Rocky Mountain Douglas-fir	5
		Unfavorable	650	Parry's danthonia		10		
				sheep fescue		10		
				Letterman's needlegrass		5		
				elk sedge		3		
				wax currant		3		
				Rocky Mountain juniper		2		
				antelope bitterbrush		2		
				true mountain mahogany		2		
				western snowberry		2		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Canopy cover
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		Pct.
46:								
Resort----------	PIPO/PUTR (ponderosa pine, antelope bitterbrush)	Favorable	1,200	mountain muhly		30	ponderosa pine	15
		Normal	900	Arizona fescue		10	Rocky Mountain Douglas-fir	5
		Unfavorable	650	Parry's danthonia		10		
				sheep fescue		10		
				Letterman's needlegrass		5		
				elk sedge		3		
				wax currant		3		
				Rocky Mountain juniper		2		
				antelope bitterbrush		2		
				true mountain mahogany		2		
				western snowberry		2		
47:								
Resort----------	Stony Loam	Favorable	2,000	Arizona fescue	15		---	---
		Normal	1,400	mountain muhly	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
Cathedral-------	Stony Loam	Favorable	1,600	mountain muhly	25		---	---
		Normal	1,150	Arizona fescue	15			
		Unfavorable	900	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
48:								
Resort----------	Stony Loam	Favorable	2,000	Arizona fescue	15		---	---
		Normal	1,400	mountain muhly	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
Cathedral-------	Stony Loam	Favorable	1,600	mountain muhly	25		---	---
		Normal	1,150	Arizona fescue	15			
		Unfavorable	900	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
Rubble land-----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
49:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
50:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Cathedral-------	Stony Loam	Favorable	1,250	mountain muhly	20		---	---
		Normal	950	Arizona fescue	15			
		Unfavorable	700	Griffith wheatgrass	10			
				Parry's danthonia	10			
				mountain mahogany	6			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
Resort----------	Stony Loam	Favorable	2,000	Arizona fescue	15		---	---
		Normal	1,400	mountain muhly	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
51:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Resort----------	PIPO/PUTR (ponderosa pine, antelope bitterbrush)	Favorable	1,200	mountain muhly		30	ponderosa pine	10
		Normal	900	Arizona fescue		10	Rocky Mountain Douglas-fir	5
		Unfavorable	650	Parry's danthonia		10		
				sheep fescue		10		
				Letterman's needlegrass		5		
				elk sedge		3		
				wax currant		3		
				Rocky Mountain juniper		2		
				antelope bitterbrush		2		
				true mountain mahogany		2		
				western snowberry		2		
52:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Rubble land-----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production		Characteristic native vegetation	Composition		Common trees	Canopy cover
		Kind of year	Dry weight		Range-land	Forest		
			Lb/acre		Pct.	Pct.		Pct.
52:								
Cathedral-------	Stony Loam	Favorable	1,600	mountain muhly	20		---	---
		Normal	1,150	Arizona fescue	15			
		Unfavorable	800	Griffith wheatgrass	10			
				Parry's danthonia	10			
				mountain mahogany	6			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
				yucca	3			
53:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Rubble land-----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Cathedral-------	Stony Loam	Favorable	1,600	mountain muhly	20		---	---
		Normal	1,150	Arizona fescue	15			
		Unfavorable	800	Griffith wheatgrass	10			
				Parry's danthonia	10			
				mountain mahogany	6			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
				yucca	3			
54:								
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Tolland---------	ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)	Favorable	300	elk sedge		10	subalpine fir	15
		Normal	200	common juniper		6	Engelmann's spruce	10
		Unfavorable	125	kinnikinnick		5	lodgepole pine	10
				dwarf blueberry		2	Rocky Mountain Douglas-fir	5
				lupine		2		
				quaking aspen		2		
55:								
Rogert----------	Stony Loam	Favorable	2,000	mountain muhly	25		---	---
		Normal	1,400	Arizona fescue	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
55:								
Herbman---------	PICO/ARUV (lodgepole pine, kinnikinnick)	Favorable	500	bluebunch wheatgrass		15	ponderosa pine	15
		Normal	325	kinnikinnick		15	Rocky Mountain Douglas-fir	3
		Unfavorable	250	needlegrass		15		
				bluegrass		10		
				fescue		10		
				other shrubs		10		
				common juniper		5		
				prairie sagewort		5		
				sedge		5		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
56:								
Tahana----------	PSME/ARUV-JUCO (Rocky Mountain Douglas-fir, kinnikinnick, common juniper)	Favorable	250	common juniper		10	Rocky Mountain Douglas-fir	20
		Normal	150	kinnikinnick		10	lodgepole pine	15
		Unfavorable	75	Oregongrape		8	subalpine fir	5
				quaking aspen		5		
				Woods' rose		2		
				wax currant		2		
				yarrow		2		
				golden currant		1		
Legault---------	PICO/JUCO (lodgepole pine, common juniper)	Favorable	200	common juniper		10	lodgepole pine	20
		Normal	125	kinnikinnick		3	Rocky Mountain Douglas-fir	12
		Unfavorable	75	mallow ninebark		3		
				Woods' rose		2		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
57:								
Tolland---------	ABLA-PIEN/CAGE (subalpine fir, Engelmann's spruce, elk sedge)	Favorable	300	common juniper		10	lodgepole pine	20
		Normal	200	kinnikinnick		10	subalpine fir	20
		Unfavorable	125	elk sedge		6	Engelmann's spruce	15
				spike trisetum		5	Rocky Mountain Douglas-fir	5
				white spirea		5		
				Oregongrape		3		
				lupine		3		
Rock outcrop----	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
58:								
Tonahutu--------	PIEN/VASC (Engelmann's spruce, grouse whortleberry)	Favorable	200	grouse whortleberry		20	Engelmann's spruce	40
		Normal	150	dwarf blueberry		10	subalpine fir	15
		Unfavorable	100	Ross' sedge		5	lodgepole pine	5
				common juniper		5		
Ohman----------	ABLA-PIEN/VASC (subalpine fir, Engelmann's spruce, grouse whortleberry)	Favorable	200	grouse whortleberry		20	subalpine fir	25
		Normal	150	Ross' sedge		5	Engelmann's spruce	20
		Unfavorable	100	common juniper		5	lodgepole pine	10
				lupine		5		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
59:								
Trag----------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
60:								
Troutdale-------	PIPO-PSME/MUMO (ponderosa pine-Rocky Mountain Douglas-fir/mountain muhly)	Favorable	---	bluegrass		20	ponderosa pine	30
		Normal	---	Arizona fescue		15	Rocky Mountain Douglas-fir	8
		Unfavorable	---	sedge		15		
				mountain brome		10		
				prairie Junegrass		10		
				mountain muhly		5		
				pine dropseed		5		
				western wheatgrass		5		
Rogert----------	Stony Loam	Favorable	2,000	mountain muhly	25		---	---
		Normal	1,400	Arizona fescue	15			
		Unfavorable	1,100	Griffith wheatgrass	10			
				Parry's danthonia	10			
				antelope bitterbrush	5			
				other perennial forbs	5			
				wax currant	5			
				western wheatgrass	5			
				western snowberry	3			
Kittredge-------	Mountain Loam	Favorable	1,800	mountain muhly	30		---	---
		Normal	1,500	Arizona fescue	20			
		Unfavorable	1,200	Parry's danthonia	15			
				Letterman's needlegrass	5			
				Sandberg bluegrass	5			
				western wheatgrass	5			
				antelope bitterbrush	3			
				slender wheatgrass	2			
				wax currant	2			
61:								
Troutdale-------	PIPO-PSME/MUMO (ponderosa pine-Rocky Mountain Douglas-fir/mountain muhly)	Favorable	650	bluegrass		20	ponderosa pine	20
		Normal	400	Arizona fescue		15	Rocky Mountain Douglas-fir	5
		Unfavorable	300	sedge		15		
				mountain brome		10		
				prairie Junegrass		10		
				mountain muhly		5		
				pine dropseed		5		
				western wheatgrass		5		
Sprucedale------	PIPO-PSME/MUMO (ponderosa pine-Rocky Mountain Douglas-fir/mountain muhly)	Favorable	500	Arizona fescue		15	ponderosa pine	20
		Normal	350	mountain muhly		15	Rocky Mountain Douglas-fir	5
		Unfavorable	250	western wheatgrass		15		
				Parry's danthonia		10		
				slender wheatgrass		10		
				mountain brome		5		
				prairie Junegrass		5		
				prairie sagewort		5		

Table 5.--Ecological sites and characteristic native vegetation--Continued

Map symbol and soil name	Ecological site	Total production: Kind of year	Total production: Dry weight	Characteristic native vegetation	Composition: Range-land	Composition: Forest	Common trees	Canopy cover
			Lb/acre		Pct.	Pct.		Pct.
62:								
Typic cryaquents	POAN3/SAEX (narrowleaf cottonwood/coyote willow)	Favorable	800	golden willow		10	narrowleaf cottonwood	50
		Normal	500	sandbar willow		8	peachleaf willow	15
		Unfavorable	350	prunus		5		
Cumulic cryaquolls-----	Mountain Meadow	Favorable	2,500	Nebraska sedge	20		---	---
		Normal	1,500	Baltic rush	15			
		Unfavorable	1,000	golden willow	10			
				tufted hairgrass	10			
				American mannagrass	5			
				peachleaf willow	5			
				smallwing sedge	5			
				prunus	3			
63:								
Urban land------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					
Breece----------	Loamy Park	Favorable	2,000	Parry's danthonia	25		---	---
		Normal	1,600	Arizona fescue	15			
		Unfavorable	1,300	Letterman's needlegrass	15			
				mountain muhly	10			
				needleandthread	5			
				slender wheatgrass	5			
				muttongrass	4			
				elk sedge	2			
64:								
Water-----------	---	Favorable	---				---	---
		Normal	---					
		Unfavorable	---					

Table 6.--Recreation (A)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents	45	Not rated		Not rated		Not rated	
Dumps, mine	35	Not rated		Not rated		Not rated	
2:							
Bendemeere	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Tolland	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
3:							
Breece	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.09	Gravel content	0.09	Slope	1.00
						Content of large stones	0.20
4:							
Cathedral	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.35	Content of large stones	0.35	Content of large stones	1.00
						Gravel content	0.80
Rock outcrop	20	Not rated		Not rated		Not rated	
5:							
Cathedral	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
		Content of large stones	0.74	Content of large stones	0.74	Content of large stones	1.00
						Gravel content	0.04
Rock outcrop	20	Not rated		Not rated		Not rated	
6:							
Cumulic Cryaquolls	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00			Flooding	0.60
7:							
Gateview	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
						Content of large stones	0.32

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7:							
Kittredge----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
8:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.20
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
9:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.20
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
10:							
Grimstone----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Too stony	0.76
						Depth to bedrock	0.06
Hiwan----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too sandy	0.89	Too sandy	0.89	Content of large stones	1.00
		Content of large stones	0.18	Content of large stones	0.18		
						Too sandy	0.89
						Gravel content	0.11
Rock outcrop--------	20	Not rated		Not rated		Not rated	
11:							
Grimstone----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Too stony	0.76
						Depth to bedrock	0.06
Peeler----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.14	Content of large stones	0.14	Content of large stones	1.00
						Gravel content	0.14
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.50	Gravel content	0.50	Gravel content	1.00
		Too stony	0.19	Too stony	0.19	Slope	1.00
						Too stony	0.19
						Content of large stones	0.01

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
13:							
Herbman----------	70	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to bedrock	1.00
		Gravel content	0.50	Gravel content	0.50	Gravel content	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
						Content of large stones	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.50	Gravel content	0.50	Gravel content	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
						Content of large stones	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15:							
Hiwan----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Rock outcrop--------	30	Not rated		Not rated		Not rated	
Bendemeere----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
16:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.90
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
17:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.90
Mammoth----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Legault----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	0.04	Too stony	0.04	Too stony	0.04

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18:							
Kataka	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.92	Gravel content	0.92	Slope	1.00
		Too stony	0.19	Too stony	0.19	Content of large stones	0.54
						Depth to bedrock	0.35
						Too stony	0.19
Resort	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
19:							
Kittredge	60	Not limited		Not limited		Very limited	
						Slope	1.00
Guanella	25	Not limited		Not limited		Very limited	
						Slope	1.00
						Gravel content	0.12
						Content of large stones	0.05
20:							
Kittredge	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Guanella	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Content of large stones	0.01
21:							
Legault	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
22:							
Legault	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
23:							
Legault	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
24:							
Lininger	45	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.20	Gravel content	0.20	Gravel content	1.00
						Slope	1.00
						Content of large stones	0.01
						Depth to bedrock	0.01

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
24:							
Breece----------	40	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.09	Gravel content	0.09	Gravel content	1.00
						Slope	1.00
						Content of large stones	0.20
25:							
Lininger----------	45	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.20	Gravel content	0.20	Gravel content	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
						Content of large stones	0.01
						Depth to bedrock	0.01
Resort----------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	0.19	Too stony	0.19	Slope	1.00
		Slope	0.04	Slope	0.04	Too stony	0.19
26:							
Lininger----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.20	Gravel content	0.20	Gravel content	1.00
						Content of large stones	0.01
						Depth to bedrock	0.01
Trag----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Gravel content	1.00
		Gravel content	0.16	Gravel content	0.16	Too stony	0.19
						Content of large stones	0.03
27:							
Lone Rock----------	55	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.13	Gravel content	0.13	Gravel content	1.00
						Slope	1.00
						Content of large stones	0.08
Breece----------	35	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.09	Gravel content	0.09	Gravel content	1.00
						Slope	1.00
						Content of large stones	0.20
28:							
Lone Rock----------	55	Very limited		Very limited		Very limited	
		Too stony	1.00	Too stony	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Too stony	1.00
		Gravel content	0.13	Gravel content	0.13	Gravel content	1.00
						Content of large stones	0.08
Breece----------	35	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.09	Gravel content	0.09	Gravel content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
						Content of large stones	0.20

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
30:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.04	Too stony	0.04	Depth to bedrock	0.10
						Too stony	0.04
Bendemeere----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
31:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
						Depth to bedrock	0.10
Bendemeere----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
32:							
Mammoth----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.04	Too stony	0.04	Too stony	0.04
Ohman----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
						Depth to bedrock	0.10
Rock outcrop--------	15	Not rated		Not rated		Not rated	
33:							
Ohman----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
						Depth to bedrock	0.10
Ivywild----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Depth to bedrock	0.95
						Too stony	0.76
34:							
Ohman----------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.10
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35:							
Ohman----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.10
Legault----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
36:							
Pettingell----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Gravel content	1.00
		Gravel content	0.09	Gravel content	0.09	Content of large stones	0.20
						Too stony	0.19
Rogert----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Content of large stones	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00		
		Too stony	1.00	Too stony	1.00	Slope	1.00
		Content of large stones	0.42	Content of large stones	0.42	Depth to bedrock	1.00
						Too stony	1.00
						Gravel content	0.73
Rock outcrop--------	15	Not rated		Not rated		Not rated	
37:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to bedrock	1.00
38:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
39:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
40:							
Raleigh----------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
41:							
Redfeather----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42:							
Redfeather----------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
Legault----------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Too stony	1.00
Tolvar----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
43:							
Resort----------	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
44:							
Resort----------	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
45:							
Resort----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
46:							
Resort----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
47:							
Resort----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Cathedral----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	0.76	Too stony	0.76	Content of large stones	1.00
		Content of large stones	0.35	Content of large stones	0.35	Gravel content	0.80
						Too stony	0.76
48:							
Resort----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48:							
Cathedral----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	0.76	Too stony	0.76	Content of large stones	1.00
		Content of large stones	0.35	Content of large stones	0.35	Gravel content	0.80
						Too stony	0.76
Rubble land---------	20	Not rated		Not rated		Not rated	
49:							
Rock outcrop--------	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Cathedral----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
		Content of large stones	0.01	Content of large stones	0.01	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Content of large stones	1.00
Resort----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
		Content of large stones	0.01	Content of large stones	0.01	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Content of large stones	1.00
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53:							
Cathedral----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
		Content of large stones	0.01	Content of large stones	0.01	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Content of large stones	1.00
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Too stony	0.76
55:							
Rogert----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Herbman----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	0.04	Too stony	0.04	Gravel content	0.80
						Content of large stones	0.61
						Too stony	0.04
Rock outcrop--------	15	Not rated		Not rated		Not rated	
56:							
Tahana----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
						Depth to bedrock	0.90
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Too stony	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
57:							
Tolland----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Too stony	0.76
Rock outcrop--------	25	Not rated		Not rated		Not rated	
58:							
Tonahutu----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Too stony	0.19

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
58:							
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.04	Too stony	0.04	Depth to bedrock	0.10
						Too stony	0.04
59:							
Trag----------	70	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.16	Gravel content	0.16	Gravel content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
						Content of large stones	0.03
60:							
Troutdale----------	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Depth to bedrock	0.54
Rogert----------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Gravel content	1.00
		Gravel content	1.00	Gravel content	1.00	Depth to bedrock	1.00
		Too stony	0.19	Too stony	0.19	Slope	1.00
		Slope	0.04	Slope	0.04	Too stony	0.19
						Content of large stones	0.01
Kittredge----------	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
61:							
Troutdale----------	45	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
						Depth to bedrock	0.54
Sprucedale----------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.20	Gravel content	0.20	Gravel content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
						Content of large stones	0.01
62:							
Typic Cryaquents----	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Flooding	0.40	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
						Content of large stones	0.03
Cumulic Cryaquolls--	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to	1.00			Flooding	0.60
		Depth to saturated zone	1.00				
63:							
Urban land----------	55	Not rated		Not rated		Not rated	

Table 6.--Recreation (A)--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
63:							
Breece	35	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.09	Gravel content	0.09	Gravel content	1.00
						Content of large stones	0.20
						Slope	0.12
64:							
Water	95	Not rated		Not rated		Not rated	

Table 7.--Recreation (B)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents	45	Not rated		Not rated		Not rated	
Dumps, mine	35	Not rated		Not rated		Not rated	
2:							
Bendemeere	50	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Slope	1.00
		Too stony	1.00	Slope	1.00	Droughty	1.00
Tolland	35	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Slope	1.00
		Too stony	1.00	Slope	1.00	Droughty	1.00
3:							
Breece	80	Somewhat limited		Not limited		Very limited	
		Slope	0.68			Slope	1.00
						Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
4:							
Cathedral	65	Very limited		Very limited		Very limited	
		Too stony	1.00	Too stony	1.00	Depth to bedrock	1.00
		Content of large stones	0.35	Content of large stones	0.35	Droughty	1.00
		Slope	0.02			Content of large stones	1.00
						Slope	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
5:							
Cathedral	65	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.74	Content of large stones	0.74	Droughty	1.00
						Content of large stones	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
6:							
Cumulic Cryaquolls	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Flooding	0.60
						Droughty	0.02
7:							
Gateview	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.94	Slope	1.00
						Droughty	0.82
						Content of large stones	0.32
						Gravel content	0.07

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7:							
Kittredge----------	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.56	Slope	1.00
8:							
Grimstone----------	45	Somewhat limited		Not limited		Very limited	
		Slope	0.41			Slope	1.00
						Depth to bedrock	0.20
						Droughty	0.12
Bullwark family-----	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.41	Too stony	0.19	Slope	1.00
		Too stony	0.19			Droughty	0.55
9:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.20
						Droughty	0.12
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Droughty	0.55
10:							
Grimstone----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Droughty	0.41
						Depth to bedrock	0.06
Hiwan----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Too sandy	0.89	Too sandy	0.89	Slope	1.00
		Content of large stones	0.18	Content of large stones	0.18	Droughty	1.00
						Content of large stones	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
11:							
Grimstone----------	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Too stony	0.76	Slope	1.00
		Too stony	0.76			Droughty	0.49
						Depth to bedrock	0.06
Peeler----------	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Content of large stones	0.14	Slope	1.00
		Content of large stones	0.14			Content of large stones	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Somewhat limited		Somewhat limited		Very limited	
		Too stony	0.19	Too stony	0.19	Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	0.50
						Content of large stones	0.01

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
13:							
Herbman----------	70	Somewhat limited		Somewhat limited		Very limited	
		Too stony	0.19	Too stony	0.19	Depth to bedrock	1.00
						Droughty	1.00
						Slope	0.63
						Gravel content	0.50
						Content of large stones	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Too stony	0.19	Depth to bedrock	1.00
		Too stony	0.19			Slope	1.00
						Droughty	1.00
						Gravel content	0.50
						Content of large stones	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15:							
Hiwan----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
Rock outcrop--------	30	Not rated		Not rated		Not rated	
Bendemeere----------	20	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.96	Slope	1.00
						Droughty	1.00
16:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
						Depth to bedrock	0.90
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
17:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
						Depth to bedrock	0.90
Mammoth----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Slope	1.00
		Too stony	1.00	Slope	1.00	Droughty	0.93
Legault----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Too stony	0.04	Too stony	0.04	Slope	1.00
						Droughty	1.00

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
18:							
Kataka	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Droughty	0.94
						Gravel content	0.92
						Content of large stones	0.54
						Depth to bedrock	0.35
Resort	25	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
19:							
Kittredge	60	Not limited		Not limited		Not limited	
Guanella	25	Not limited		Not limited		Somewhat limited	
						Content of large stones	0.05
20:							
Kittredge	45	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
Guanella	40	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50			Content of large stones	0.01
21:							
Legault	80	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Slope	0.16
22:							
Legault	75	Very limited		Very limited		Very limited	
		Too stony	1.00	Too stony	1.00	Depth to bedrock	1.00
		Slope	0.92			Slope	1.00
						Droughty	1.00
23:							
Legault	70	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
24:							
Lininger	45	Not limited		Not limited		Somewhat limited	
						Gravel content	0.20
						Content of large stones	0.01
						Depth to bedrock	0.01

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
24:							
Breece	40	Not limited		Not limited		Somewhat limited	
						Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
25:							
Lininger	45	Not limited		Not limited		Somewhat limited	
						Gravel content	0.20
						Slope	0.16
						Content of large stones	0.01
						Depth to bedrock	0.01
Resort	40	Somewhat limited		Somewhat limited		Very limited	
		Too stony	0.19	Too stony	0.19	Depth to bedrock	1.00
						Droughty	1.00
						Slope	0.04
26:							
Lininger	50	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Slope	1.00
						Gravel content	0.20
						Content of large stones	0.01
						Depth to bedrock	0.01
Trag	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Too stony	0.19	Slope	1.00
		Too stony	0.19			Gravel content	0.16
						Content of large stones	0.03
27:							
Lone Rock	55	Not limited		Not limited		Very limited	
						Droughty	1.00
						Gravel content	0.13
						Content of large stones	0.08
Breece	35	Not limited		Not limited		Somewhat limited	
						Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
28:							
Lone Rock	55	Very limited		Very limited		Very limited	
		Too stony	1.00	Too stony	1.00	Droughty	1.00
						Slope	0.63
						Gravel content	0.13
						Content of large stones	0.08
Breece	35	Not limited		Not limited		Somewhat limited	
						Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
						Slope	0.04

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
30:							
Mammoth----------	40	Somewhat limited		Not limited		Very limited	
		Slope	0.88			Slope	1.00
						Droughty	0.93
Ohman----------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Too stony	0.04	Slope	1.00
		Too stony	0.04			Droughty	1.00
						Depth to bedrock	0.10
Bendemeere----------	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.92	Too stony	0.19	Slope	1.00
		Too stony	0.19			Droughty	1.00
31:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Droughty	0.93
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Slope	1.00
		Too stony	1.00	Slope	1.00	Droughty	1.00
						Depth to bedrock	0.10
Bendemeere----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Slope	1.00
		Too stony	1.00	Slope	1.00	Droughty	1.00
32:							
Mammoth----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.04	Too stony	0.04	Droughty	0.93
Ohman----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Slope	1.00
		Too stony	1.00	Slope	1.00	Droughty	1.00
						Depth to bedrock	0.10
Rock outcrop--------	15	Not rated		Not rated		Not rated	
33:							
Ohman----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Slope	1.00
		Too stony	1.00	Slope	1.00	Droughty	1.00
						Depth to bedrock	0.10
Ivywild----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Droughty	1.00
						Depth to bedrock	0.95
34:							
Ohman----------	55	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Slope	1.00
						Droughty	1.00
						Depth to bedrock	0.10
Legault----------	35	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35:							
Ohman----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
						Depth to bedrock	0.10
Legault----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
36:							
Pettingell----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Droughty	0.82
						Content of large stones	0.20
						Gravel content	0.09
Rogert----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.42	Content of large stones	0.42	Content of large stones	1.00
						Droughty	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
37:							
Raleigh----------	85	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Slope	0.63
38:							
Raleigh----------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
39:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
40:							
Raleigh----------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Slope	1.00
						Droughty	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
41:							
Redfeather----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
41:							
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
42:							
Redfeather----------	40	Somewhat limited		Not limited		Very limited	
		Slope	0.68			Depth to bedrock	1.00
						Droughty	1.00
						Slope	1.00
Legault----------	25	Very limited		Very limited		Very limited	
		Too stony	1.00	Too stony	1.00	Depth to bedrock	1.00
		Slope	0.68			Droughty	1.00
						Slope	1.00
Tolvar----------	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.68	Too stony	0.19	Slope	1.00
		Too stony	0.19			Droughty	0.69
43:							
Resort----------	80	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
44:							
Resort----------	80	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Droughty	1.00
						Slope	1.00
45:							
Resort----------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
46:							
Resort----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
47:							
Resort----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
Cathedral----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Too stony	0.76	Too stony	0.76	Slope	1.00
		Content of large stones	0.35	Content of large stones	0.35	Droughty	1.00
						Content of large stones	1.00

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48:							
Resort----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
Cathedral----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Too stony	0.76	Too stony	0.76	Slope	1.00
		Content of large stones	0.35	Content of large stones	0.35	Droughty	1.00
						Content of large stones	1.00
Rubble land---------	20	Not rated		Not rated		Not rated	
49:							
Rock outcrop--------	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Cathedral----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Droughty	1.00
						Content of large stones	1.00
						Gravel content	0.01
Resort----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Too stony	0.19	Too stony	0.19	Slope	1.00
						Droughty	1.00
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Very limited		Very limited		Very limited	
		Too stony	1.00	Too stony	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	0.06	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Droughty	1.00
						Content of large stones	1.00
						Gravel content	0.01
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53:							
Cathedral----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Too stony	1.00	Too stony	1.00	Slope	1.00
		Content of large stones	0.01	Content of large stones	0.01	Droughty	1.00
						Content of large stones	1.00
						Gravel content	0.01
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Droughty	1.00
55:							
Rogert----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
						Content of large stones	1.00
Herbman----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Too stony	0.04	Too stony	0.04	Slope	1.00
						Droughty	1.00
						Content of large stones	0.61
Rock outcrop--------	15	Not rated		Not rated		Not rated	
56:							
Tahana----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Slope	1.00
		Too stony	1.00	Slope	1.00	Droughty	1.00
						Depth to bedrock	0.90
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Too stony	1.00	Depth to bedrock	1.00
		Too stony	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
57:							
Tolland----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.76	Too stony	0.76	Droughty	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
58:							
Tonahutu----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.19	Too stony	0.19	Droughty	0.60

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
58:							
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too stony	0.04	Too stony	0.04	Droughty	1.00
						Depth to bedrock	0.10
59:							
Trag----------	70	Not limited		Not limited		Somewhat limited	
						Gravel content	0.16
						Slope	0.04
						Content of large stones	0.03
60:							
Troutdale----------	40	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Droughty	0.06
						Slope	0.04
Rogert----------	25	Somewhat limited		Somewhat limited		Very limited	
		Too stony	0.19	Too stony	0.19	Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	1.00
						Slope	0.04
						Content of large stones	0.01
Kittredge----------	20	Not limited		Not limited		Somewhat limited	
						Slope	0.04
61:							
Troutdale----------	45	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.54
						Droughty	0.34
						Gravel content	0.25
						Slope	0.04
Sprucedale----------	40	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	0.20
						Slope	0.04
						Content of large stones	0.01
62:							
Typic Cryaquents----	50	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
						Content of large stones	0.03
Cumulic Cryaquolls--	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Flooding	0.60
						Droughty	0.02
63:							
Urban land----------	55	Not rated		Not rated		Not rated	

Table 7.--Recreation (B)--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
63:							
Breece	35	Not limited		Not limited		Somewhat limited	
						Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
64:							
Water	95	Not rated		Not rated		Not rated	

Table 8.--Forestland management (A)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents	45	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
				Sandiness	0.50		
Dumps, mine	35	Not rated		Not rated		Not rated	
2:							
Bendemeere	50	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
		Stoniness	0.50	Rock fragments	1.00		
Tolland	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
				Sandiness	0.50		
3:							
Breece	80	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Strength	0.50
4:							
Cathedral	65	Severe		Poorly suited		Slight	
		Restrictive layer	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
		Slope	0.50	Sandiness	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
5:							
Cathedral	65	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
				Sandiness	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
6:							
Cumulic Cryaquolls	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Wetness	0.50	Strength	1.00
		Strength	0.50	Flooding	0.50		
				Strength	0.50		
7:							
Gateview	50	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
Kittredge	30	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
		Strength	0.50				
8:							
Grimstone	45	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Strength	0.50
		Stickiness/slope	0.50				

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
8:							
Bullwark family-----	40	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Strength	0.50
		Sandiness	0.50	Rock fragments	0.50		
9:							
Grimstone----------	45	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
Bullwark family-----	40	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
				Rock fragments	0.50		
10:							
Grimstone----------	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
Hiwan----------	30	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Sandiness	0.50		
Rock outcrop--------	20	Not rated		Not rated		Not rated	
11:							
Grimstone----------	40	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
Peeler----------	25	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Strength	0.50
		Strength	0.50				
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Slight		Moderately suited		Slight	
				Rock fragments	0.50	Strength	0.10
				Slope	0.50		
13:							
Herbman----------	70	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
				Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15:							
Hiwan----------	40	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
				Sandiness	0.50		
Rock outcrop--------	30	Not rated		Not rated		Not rated	

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
15:							
Bendemeere----------	20	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
16:							
Ivywild----------	40	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Sandiness	0.50		
Legault----------	35	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
				Sandiness	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
17:							
Ivywild----------	40	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Sandiness	0.50		
Mammoth----------	25	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
				Sandiness	0.50		
Legault----------	20	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
				Sandiness	0.50		
18:							
Kataka----------	40	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
				Rock fragments	0.50		
Resort----------	25	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
19:							
Kittredge----------	60	Slight		Moderately suited		Moderate	
				Slope	0.50	Strength	0.50
Guanella----------	25	Moderate		Moderately suited		Severe	
		Strength	0.50	Strength	0.50	Strength	1.00
				Slope	0.50		
20:							
Kittredge----------	45	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Strength	0.50
Guanella----------	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Strength	1.00
		Sandiness	0.50	Strength	0.50		

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21:							
Legault----------	80	Moderate		Moderately suited		Slight	
		Sandiness	0.50	Slope	0.50	Strength	0.10
				Sandiness	0.50		
22:							
Legault----------	75	Moderate		Poorly suited		Slight	
		Slope	0.50	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
		Sandiness	0.50	Sandiness	0.50		
23:							
Legault----------	70	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
				Sandiness	0.50		
Rock outcrop--------	20	Not rated		Not rated		Not rated	
24:							
Lininger----------	45	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
Breece----------	40	Slight		Moderately suited		Moderate	
				Slope	0.50	Strength	0.50
25:							
Lininger----------	45	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
Resort----------	40	Severe		Moderately suited		Slight	
		Stoniness	1.00	Slope	0.50	Strength	0.10
		Sandiness	0.50	Rock fragments	0.50		
26:							
Lininger----------	50	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Strength	0.50				
Trag----------	35	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Strength	0.50
				Rock fragments	0.50		
27:							
Lone Rock----------	55	Slight		Moderately suited		Slight	
				Slope	0.50	Strength	0.10
Breece----------	35	Slight		Moderately suited		Moderate	
				Slope	0.50	Strength	0.50
28:							
Lone Rock----------	55	Moderate		Poorly suited		Slight	
		Stoniness	0.50	Rock fragments	1.00	Strength	0.10
				Slope	0.50		
Breece----------	35	Slight		Moderately suited		Moderate	
				Slope	0.50	Strength	0.50

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
30:							
Mammoth----------	40	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Sandiness	0.50	Sandiness	0.50		
Ohman----------	35	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Sandiness	0.50	Sandiness	0.50		
				Rock fragments	0.50		
Bendemeere----------	20	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Strength	0.50
		Sandiness	0.50	Rock fragments	0.50		
31:							
Mammoth----------	40	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
				Sandiness	0.50		
Ohman----------	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
				Sandiness	0.50		
Bendemeere----------	15	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
32:							
Mammoth----------	50	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
				Sandiness	0.50		
Ohman----------	25	Severe		Poorly suited		Slight	
		Stoniness	1.00	Rock fragments	1.00	Strength	0.10
		Slope	1.00	Slope	1.00		
				Sandiness	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
33:							
Ohman----------	45	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
				Sandiness	0.50		
Ivywild----------	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
				Sandiness	0.50		
34:							
Ohman----------	55	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Sandiness	0.50	Sandiness	0.50		
Legault----------	35	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Sandiness	0.50	Sandiness	0.50		

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35:							
Ohman	50	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Sandiness	0.50		
Legault	45	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Sandiness	0.50		
36:							
Pettingell	50	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
				Rock fragments	0.50		
Rogert	20	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
Rock outcrop	15	Not rated		Not rated		Not rated	
37:							
Raleigh	85	Moderate		Moderately suited		Slight	
		Sandiness	0.50	Slope	0.50	Strength	0.10
				Sandiness	0.50		
38:							
Raleigh	85	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Sandiness	0.50	Sandiness	0.50		
39:							
Raleigh	85	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
				Sandiness	0.50		
40:							
Raleigh	60	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
				Sandiness	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
41:							
Redfeather	45	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Legault	30	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
				Sandiness	0.50		
42:							
Redfeather	40	Severe		Poorly suited		Slight	
		Restrictive layer	1.00	Slope	1.00	Strength	0.10
		Slope	0.50				

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42:							
Legault----------	25	Moderate		Poorly suited		Slight	
		Stoniness	0.50	Rock fragments	1.00	Strength	0.10
		Slope	0.50	Slope	1.00		
		Sandiness	0.50	Sandiness	0.50		
Tolvar----------	20	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Strength	0.50
		Sandiness	0.50	Sandiness	0.50		
				Rock fragments	0.50		
43:							
Resort----------	80	Moderate		Moderately suited		Slight	
		Sandiness	0.50	Sandiness	0.50	Strength	0.10
				Slope	0.50		
44:							
Resort----------	80	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Sandiness	0.50	Sandiness	0.50		
45:							
Resort----------	85	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
		Sandiness	0.50	Sandiness	0.50		
46:							
Resort----------	85	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	1.00		
47:							
Resort----------	50	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	0.50		
Cathedral----------	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
				Sandiness	0.50		
48:							
Resort----------	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	0.50		
Cathedral----------	30	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
				Sandiness	0.50		
Rubble land---------	20	Not rated		Not rated		Not rated	
49:							
Rock outcrop--------	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50:							
Cathedral----------	25	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	0.50		
				Sandiness	0.50		
Resort----------	20	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Severe		Poorly suited		Slight	
		Restrictive layer	1.00	Rock fragments	1.00	Strength	0.10
		Slope	0.50	Slope	1.00		
		Stoniness	0.50	Sandiness	0.50		
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
				Sandiness	0.50		
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
				Rock fragments	0.50		
55:							
Rogert----------	45	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
Herbman----------	30	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
				Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
56:							
Tahana----------	40	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
56:							
Legault----------	30	Severe		Poorly suited		Slight	
		Slope	1.00	Rock fragments	1.00	Strength	0.10
		Stoniness	0.50	Slope	1.00		
				Sandiness	0.50		
Rock outcrop--------	25	Not rated		Not rated		Not rated	
57:							
Tolland----------	45	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
				Rock fragments	0.50		
Rock outcrop--------	25	Not rated		Not rated		Not rated	
58:							
Tonahutu----------	50	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Strength	0.50
				Rock fragments	0.50		
Ohman----------	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
				Rock fragments	0.50		
				Sandiness	0.50		
59:							
Trag----------	70	Slight		Moderately suited		Moderate	
				Slope	0.50	Strength	0.50
60:							
Troutdale----------	40	Slight		Moderately suited		Moderate	
				Slope	0.50	Strength	0.50
Rogert----------	25	Severe		Moderately suited		Slight	
		Restrictive layer	1.00	Slope	0.50	Strength	0.10
		Sandiness	0.50	Sandiness	0.50		
				Rock fragments	0.50		
Kittredge----------	20	Slight		Moderately suited		Moderate	
				Slope	0.50	Strength	0.50
61:							
Troutdale----------	45	Slight		Moderately suited		Moderate	
				Slope	0.50	Strength	0.50
Sprucedale----------	40	Moderate		Moderately suited		Slight	
		Strength	0.50	Slope	0.50	Strength	0.10
62:							
Typic Cryaquents----	50	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Strength	0.50
		Sandiness	0.50	Wetness	1.00		
				Sandiness	0.50		
Cumulic Cryaquolls--	45	Moderate		Moderately suited		Severe	
		Flooding	0.50	Wetness	0.50	Strength	1.00
		Strength	0.50	Flooding	0.50		
				Strength	0.50		
63:							
Urban land----------	55	Not rated		Not rated		Not rated	

Table 8.--Forestland management (A)--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
63:							
Breece	35	Slight		Well suited		Moderate Strength	0.50
64:							
Water	95	Not rated		Not rated		Not rated	

Table 9.--Forestland management (B)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents----------	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
Dumps, mine---------	35	Not rated		Not rated		Not rated	
2:							
Bendemeere----------	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
Tolland----------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Sandiness	0.50
3:							
Breece----------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
4:							
Cathedral----------	65	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	
5:							
Cathedral----------	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	
6:							
Cumulic Cryaquolls--	85	Slight		Slight		Moderately suited	
						Wetness	0.50
						Flooding	0.50
						Strength	0.50
7:							
Gateview----------	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Kittredge----------	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
8:							
Grimstone----------	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00

Table 9.--Forestland management (B)--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8:							
Bullwark family-----	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
9:							
Grimstone----------	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Bullwark family-----	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
10:							
Grimstone----------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Hiwan----------	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	
11:							
Grimstone----------	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Peeler----------	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Rock fragments	0.50
						Slope	0.50
13:							
Herbman----------	70	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Rock fragments	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15:							
Hiwan----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Sandiness	0.50
Rock outcrop--------	30	Not rated		Not rated		Not rated	

Table 9.--Forestland management (B)--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15:							
Bendemeere----------	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
16:							
Ivywild----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Legault----------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
17:							
Ivywild----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Mammoth----------	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Sandiness	0.50
Legault----------	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
18:							
Kataka----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Resort----------	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
19:							
Kittredge----------	60	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Guanella----------	25	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Strength	0.50
						Slope	0.50
20:							
Kittredge----------	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Guanella----------	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Strength	0.50

Table 9.--Forestland management (B)--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21:							
Legault----------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
22:							
Legault----------	75	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
23:							
Legault----------	70	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	
24:							
Lininger----------	45	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Breece----------	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
25:							
Lininger----------	45	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Resort----------	40	Slight		Slight		Moderately suited	
						Slope	0.50
						Rock fragments	0.50
26:							
Lininger----------	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Trag----------	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
27:							
Lone Rock----------	55	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Breece----------	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
28:							
Lone Rock----------	55	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Rock fragments	1.00
						Slope	0.50
Breece----------	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
30:							
Mammoth----------	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50

Table 9.--Forestland management (B)--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
30:							
Ohman----------	35	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Sandiness	0.50
						Rock fragments	0.50
Bendemeere----------	20	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Rock fragments	0.50
31:							
Mammoth----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
Ohman----------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Sandiness	0.50
Bendemeere----------	15	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
32:							
Mammoth----------	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
Ohman----------	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
33:							
Ohman----------	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
Ivywild----------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
34:							
Ohman----------	55	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Legault----------	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50

Table 9.--Forestland management (B)--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
35:							
Ohman	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
Legault	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
36:							
Pettingell	50	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Rogert	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
37:							
Raleigh	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
38:							
Raleigh	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
39:							
Raleigh	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Sandiness	0.50
40:							
Raleigh	60	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
41:							
Redfeather	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Legault	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
42:							
Redfeather	40	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
Legault	25	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50

Table 9.--Forestland management (B)--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42:							
Tolvar	20	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Sandiness	0.50
						Rock fragments	0.50
43:							
Resort	80	Slight		Slight		Moderately suited	
						Sandiness	0.50
						Slope	0.50
44:							
Resort	80	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Sandiness	0.50
45:							
Resort	85	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Sandiness	0.50
46:							
Resort	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
47:							
Resort	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Cathedral	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
48:							
Resort	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Cathedral	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
Rubble land	20	Not rated		Not rated		Not rated	
49:							
Rock outcrop	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop	45	Not rated		Not rated		Not rated	
Cathedral	25	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50

Table 9.--Forestland management (B)--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50:							
Resort----------	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
55:							
Rogert----------	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
Herbman----------	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
56:							
Tahana----------	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
Legault----------	30	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
						Slope	1.00
						Sandiness	0.50
Rock outcrop--------	25	Not rated		Not rated		Not rated	

Table 9.--Forestland management (B)--Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
57:							
Tolland	45	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
58:							
Tonahutu	50	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Ohman	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
59:							
Trag	70	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
60:							
Troutdale	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Rogert	25	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Sandiness	0.50
						Rock fragments	0.50
Kittredge	20	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
61:							
Troutdale	45	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Sprucedale	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
62:							
Typic Cryaquents	50	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Sandiness	0.50
Cumulic Cryaquolls	45	Slight		Slight		Moderately suited	
						Wetness	0.50
						Flooding	0.50
						Strength	0.50
63:							
Urban land	55	Not rated		Not rated		Not rated	
Breece	35	Slight		Slight		Well suited	
64:							
Water	95	Not rated		Not rated		Not rated	

Table 10.--Forestland management (C)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents	45	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Dumps, mine	35	Not rated		Not rated		Not rated	
2:							
Bendemeere	50	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	0.75	Slope	1.00
Tolland	35	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	0.75	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
3:							
Breece	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
4:							
Cathedral	65	Unsuited		Poorly suited		Poorly suited	
		Restrictive layer	1.00	Rock fragments	0.75	Rock fragments	1.00
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
		Rock fragments	0.50	Sandiness	0.50		
Rock outcrop	20	Not rated		Not rated		Not rated	
5:							
Cathedral	65	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	0.75	Slope	1.00
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
		Slope	0.50				
Rock outcrop	20	Not rated		Not rated		Not rated	
6:							
Cumulic Cryaquolls	85	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Strength	0.50
7:							
Gateview	50	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75		
		Rock fragments	0.50	Sandiness	0.50		
Kittredge	30	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8:							
Grimstone----------	45	Well suited		Poorly suited		Well suited	
				Slope	0.75		
				Rock fragments	0.50		
Bullwark family-----	40	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Rock fragments	0.50
				Rock fragments	0.50		
9:							
Grimstone----------	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
Bullwark family-----	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Rock fragments	0.50
10:							
Grimstone----------	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Rock fragments	0.50
Hiwan----------	30	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Sandiness	0.50
		Rock fragments	0.50	Sandiness	0.50		
Rock outcrop--------	20	Not rated		Not rated		Not rated	
11:							
Grimstone----------	40	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Rock fragments	0.50
				Rock fragments	0.50	Slope	0.50
Peeler----------	25	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Rock fragments	0.50
				Slope	0.50		
13:							
Herbman----------	70	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Rock fragments	0.50
				Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Rock fragments	0.50
				Rock fragments	0.50	Slope	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15:							
Hiwan	40	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Rock outcrop	30	Not rated		Not rated		Not rated	
Bendemeere	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50		
16:							
Ivywild	40	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Sandiness	0.50
		Rock fragments	0.50	Sandiness	0.50		
Legault	35	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	0.75	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
17:							
Ivywild	40	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Sandiness	0.50
		Rock fragments	0.50	Sandiness	0.50		
Mammoth	25	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	0.75	Slope	1.00
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
Legault	20	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Rock fragments	0.50
				Sandiness	0.50	Sandiness	0.50
18:							
Kataka	40	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Rock fragments	0.50
		Rock fragments	0.50	Sandiness	0.50		
Resort	25	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
19:							
Kittredge	60	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Guanella	25	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Strength	0.50
				Slope	0.50		

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
20:							
Kittredge----------	45	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
Guanella----------	40	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Strength	0.50
				Rock fragments	0.50	Slope	0.50
21:							
Legault----------	80	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Rock fragments	0.50	Sandiness	0.50
				Slope	0.50		
				Sandiness	0.50		
22:							
Legault----------	75	Moderately suited		Poorly suited		Poorly suited	
		Sandiness	0.50	Slope	0.75	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
23:							
Legault----------	70	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	0.75	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	
24:							
Lininger----------	45	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Breece----------	40	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
25:							
Lininger----------	45	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Resort----------	40	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Rock fragments	1.00	Rock fragments	0.50
		Sandiness	0.50	Slope	0.50		
				Sandiness	0.50		
26:							
Lininger----------	50	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
Trag----------	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Rock fragments	0.50
				Rock fragments	0.50	Slope	0.50
27:							
Lone Rock----------	55	Moderately suited		Moderately suited		Well suited	
		Sandiness	0.50	Sandiness	0.50		
				Rock fragments	0.50		
				Slope	0.50		

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
27:							
Breece----------	35	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
28:							
Lone Rock----------	55	Moderately suited		Poorly suited		Poorly suited	
		Sandiness	0.50	Rock fragments	0.75	Rock fragments	1.00
		Rock fragments	0.50	Slope	0.50		
				Sandiness	0.50		
Breece----------	35	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
30:							
Mammoth----------	40	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
				Rock fragments	0.50		
Ohman----------	35	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
				Sandiness	0.50	Slope	0.50
Bendemeere----------	20	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
				Rock fragments	0.50	Slope	0.50
31:							
Mammoth----------	40	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Rock fragments	0.50
				Rock fragments	0.50	Sandiness	0.50
Ohman----------	35	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	0.75	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Bendemeere----------	15	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	0.75	Slope	1.00
32:							
Mammoth----------	50	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Rock fragments	0.50
				Rock fragments	0.50	Sandiness	0.50
Ohman----------	25	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
33:							
Ohman----------	45	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	0.75	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Ivywild----------	35	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Rock fragments	0.50
				Sandiness	0.50	Sandiness	0.50
34:							
Ohman----------	55	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Rock fragments	0.50	Slope	0.50
				Sandiness	0.50		
Legault----------	35	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Rock fragments	0.50	Slope	0.50
				Sandiness	0.50		
35:							
Ohman----------	50	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Sandiness	0.50
				Sandiness	0.50		
Legault----------	45	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50	Sandiness	0.50
				Sandiness	0.50		
36:							
Pettingell----------	50	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
Rogert----------	20	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	0.75	Slope	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
37:							
Raleigh----------	85	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Rock fragments	0.50	Sandiness	0.50
				Slope	0.50		
				Sandiness	0.50		
38:							
Raleigh----------	85	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Rock fragments	0.50	Slope	0.50
				Sandiness	0.50		
39:							
Raleigh----------	85	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	0.75	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40:							
Raleigh----------	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	0.75	Slope	1.00
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	
41:							
Redfeather----------	45	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.50		
		Rock fragments	0.50	Sandiness	0.50		
Legault----------	30	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
42:							
Redfeather----------	40	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50		
				Sandiness	0.50		
Legault----------	25	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	1.00
		Rock fragments	0.50	Slope	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
Tolvar----------	20	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Sandiness	0.50
				Rock fragments	0.50	Rock fragments	0.50
				Sandiness	0.50	Slope	0.50
43:							
Resort----------	80	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Rock fragments	1.00	Sandiness	0.50
		Sandiness	0.50	Sandiness	0.50		
				Slope	0.50		
44:							
Resort----------	80	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Rock fragments	1.00	Sandiness	0.50
		Sandiness	0.50	Slope	0.75	Slope	0.50
				Sandiness	0.50		
45:							
Resort----------	85	Poorly suited		Unsuited		Moderately suited	
		Rock fragments	0.75	Rock fragments	1.00	Sandiness	0.50
		Sandiness	0.50	Slope	0.75	Slope	0.50
				Sandiness	0.50		
46:							
Resort----------	85	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50		

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
47:							
Resort----------	50	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50		
Cathedral----------	35	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Rock fragments	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
		Slope	0.50				
48:							
Resort----------	35	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50		
Cathedral----------	30	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Rock fragments	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
		Slope	0.50				
Rubble land---------	20	Not rated		Not rated		Not rated	
49:							
Rock outcrop--------	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Cathedral----------	25	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	0.75	Rock fragments	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50
		Slope	0.50				
Resort----------	20	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50		
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50		
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Rock fragments	1.00
		Sandiness	0.50	Rock fragments	0.75	Slope	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Unsuited		Unsuited		Poorly suited	
		Restrictive layer	1.00	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	0.75	Slope	1.00
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
		Rock fragments	0.50				
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50		
55:							
Rogert----------	45	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	1.00	Slope	1.00
		Slope	0.50	Sandiness	0.50		
Herbman----------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Rock fragments	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
56:							
Tahana----------	40	Moderately suited		Unsuited		Poorly suited	
		Rock fragments	0.50	Slope	1.00	Rock fragments	1.00
		Slope	0.50	Rock fragments	0.75	Slope	1.00
Legault----------	30	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Rock fragments	1.00
		Rock fragments	0.50	Rock fragments	0.75	Slope	1.00
		Slope	0.50	Sandiness	0.50	Sandiness	0.50
Rock outcrop--------	25	Not rated		Not rated		Not rated	
57:							
Tolland----------	45	Poorly suited		Unsuited		Poorly suited	
		Rock fragments	0.75	Slope	1.00	Slope	1.00
		Sandiness	0.50	Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Sandiness	0.50		
Rock outcrop--------	25	Not rated		Not rated		Not rated	
58:							
Tonahutu----------	50	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Rock fragments	0.50
Ohman----------	35	Moderately suited		Unsuited		Poorly suited	
		Sandiness	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Rock fragments	0.75	Rock fragments	0.50
		Rock fragments	0.50	Sandiness	0.50	Sandiness	0.50

Table 10.--Forestland management (C)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59:							
Trag----------	70	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
60:							
Troutdale----------	40	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Rogert----------	25	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Rock fragments	0.50	Sandiness	0.50
				Sandiness	0.50	Rock fragments	0.50
				Slope	0.50		
Kittredge----------	20	Well suited		Moderately suited		Well suited	
				Slope	0.50		
61:							
Troutdale----------	45	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Sprucedale----------	40	Moderately suited		Moderately suited		Well suited	
		Restrictive layer	0.50	Slope	0.50		
				Rock fragments	0.50		
62:							
Typic Cryaquents----	50	Moderately suited		Moderately suited		Moderately suited	
		Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
				Rock fragments	0.50		
Cumulic Cryaquolls--	45	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Strength	0.50
63:							
Urban land----------	55	Not rated		Not rated		Not rated	
Breece----------	35	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
64:							
Water----------	95	Not rated		Not rated		Not rated	

Table 11.--Forestland management (D)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Arents	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Dumps, mine	35	Not rated		Not rated	
2:					
Bendemeere	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
Tolland	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
3:					
Breece	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
4:					
Cathedral	65	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
Rock outcrop	20	Not rated		Not rated	
5:					
Cathedral	65	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
Rock outcrop	20	Not rated		Not rated	
6:					
Cumulic Cryaquolls	85	Well suited		Well suited	
7:					
Gateview	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Kittredge	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
8:					
Grimstone	45	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Bullwark family	40	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50		

Table 11.--Forestland management (D)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
9:					
Grimstone----------	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Bullwark family-----	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
10:					
Grimstone----------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Hiwan----------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rock outcrop--------	20	Not rated		Not rated	
11:					
Grimstone----------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Peeler----------	25	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Rock outcrop--------	20	Not rated		Not rated	
12:					
Herbman----------	70	Poorly suited		Well suited	
		Rock fragments	0.50		
13:					
Herbman----------	70	Poorly suited		Well suited	
		Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
14:					
Herbman----------	70	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
15:					
Hiwan----------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
Rock outcrop--------	30	Not rated		Not rated	
Bendemeere----------	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
16:					
Ivywild----------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		

Table 11.--Forestland management (D)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
16:					
Legault----------	35	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
Rock outcrop--------	15	Not rated		Not rated	
17:					
Ivywild----------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Mammoth----------	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
Legault----------	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
18:					
Kataka----------	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Resort----------	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
Rock outcrop--------	15	Not rated		Not rated	
19:					
Kittredge----------	60	Well suited		Well suited	
Guanella----------	25	Well suited		Well suited	
20:					
Kittredge----------	45	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Guanella----------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
21:					
Legault----------	80	Well suited		Well suited	
22:					
Legault----------	75	Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50
23:					
Legault----------	70	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
Rock outcrop--------	20	Not rated		Not rated	
24:					
Lininger----------	45	Well suited		Well suited	

Table 11.--Forestland management (D)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
24:					
Breece	40	Well suited		Well suited	
25:					
Lininger	45	Well suited		Well suited	
Resort	40	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
26:					
Lininger	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Trag	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
27:					
Lone Rock	55	Well suited		Well suited	
Breece	35	Well suited		Well suited	
28:					
Lone Rock	55	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
Breece	35	Well suited		Well suited	
30:					
Mammoth	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Ohman	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Bendemeere	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
31:					
Mammoth	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Ohman	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
Bendemeere	15	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
32:					
Mammoth	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Ohman	25	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
		Slope	1.00	Slope	1.00

Table 11.--Forestland management (D)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
32:					
Rock outcrop--------	15	Not rated		Not rated	
33:					
Ohman----------	45	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
Ivywild----------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
34:					
Ohman----------	55	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Legault----------	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
35:					
Ohman----------	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Legault----------	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
36:					
Pettingell----------	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rogert----------	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
Rock outcrop--------	15	Not rated		Not rated	
37:					
Raleigh----------	85	Well suited		Well suited	
38:					
Raleigh----------	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
39:					
Raleigh----------	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
40:					
Raleigh----------	60	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
Rock outcrop--------	20	Not rated		Not rated	
41:					
Redfeather----------	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		

Table 11.--Forestland management (D)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
41:					
Legault----------	30	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
42:					
Redfeather----------	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Legault----------	25	Unsuited		Poorly suited	
		Rock fragments	1.00	Rock fragments	0.50
		Slope	0.50	Slope	0.50
Tolvar----------	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
43:					
Resort----------	80	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
44:					
Resort----------	80	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
		Slope	0.50	Slope	0.50
45:					
Resort----------	85	Unsuited		Unsuited	
		Rock fragments	1.00	Rock fragments	1.00
		Slope	0.50	Slope	0.50
46:					
Resort----------	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
47:					
Resort----------	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
Cathedral----------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
48:					
Resort----------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
Cathedral----------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rubble land---------	20	Not rated		Not rated	
49:					
Rock outcrop--------	85	Not rated		Not rated	

Table 11.--Forestland management (D)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
50:					
Rock outcrop--------	45	Not rated		Not rated	
Cathedral----------	25	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
Resort----------	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	1.00
51:					
Rock outcrop--------	45	Not rated		Not rated	
Resort----------	30	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	1.00
52:					
Rock outcrop--------	40	Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated	
Cathedral----------	20	Unsuited		Poorly suited	
		Rock fragments	1.00	Slope	0.50
		Slope	0.50	Rock fragments	0.50
53:					
Rock outcrop--------	40	Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated	
Cathedral----------	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	1.00	Rock fragments	0.50
54:					
Rock outcrop--------	60	Not rated		Not rated	
Tolland----------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
55:					
Rogert----------	45	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
Herbman----------	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
56:					
Tahana----------	40	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50

Table 11.--Forestland management (D)--Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
56:					
Legault----------	30	Unsuited		Unsuited	
		Rock fragments	1.00	Slope	1.00
		Slope	1.00	Rock fragments	0.50
Rock outcrop--------	25	Not rated		Not rated	
57:					
Tolland----------	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rock outcrop--------	25	Not rated		Not rated	
58:					
Tonahutu----------	50	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Ohman----------	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
59:					
Trag----------	70	Well suited		Well suited	
60:					
Troutdale----------	40	Well suited		Well suited	
Rogert----------	25	Poorly suited		Well suited	
		Rock fragments	0.50		
Kittredge----------	20	Well suited		Well suited	
61:					
Troutdale----------	45	Well suited		Well suited	
Sprucedale----------	40	Well suited		Well suited	
62:					
Typic Cryaquents----	50	Well suited		Well suited	
Cumulic Cryaquolls--	45	Well suited		Well suited	
63:					
Urban land----------	55	Not rated		Not rated	
Breece----------	35	Well suited		Well suited	
64:					
Water----------	95	Not rated		Not rated	

Table 12.--Forestland management (E)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Arents	45	High Texture/coarse fragments	1.00	Low	
Dumps, mine	35	Not rated		Not rated	
2:					
Bendemeere	50	High Texture/slope/surface depth/coarse fragments	1.00	Low	
Tolland	35	High Texture/slope/surface depth/coarse fragments	1.00	Low	
3:					
Breece	80	Low Texture/coarse fragments	0.10	Low	
4:					
Cathedral	65	Moderate Texture/surface depth/coarse fragments	0.50	Low	
Rock outcrop	20	Not rated		Not rated	
5:					
Cathedral	65	High Texture/slope/surface depth	1.00	Low	
Rock outcrop	20	Not rated		Not rated	
6:					
Cumulic Cryaquolls	85	Low Texture/coarse fragments	0.10	High Wetness	1.00
7:					
Gateview	50	Low		Low	
Kittredge	30	Low Texture/coarse fragments	0.10	Low	
8:					
Grimstone	45	Low		Low	

Table 12.--Forestland management (E)--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
8:					
Bullwark family-----	40	Low		Low	
9:					
Grimstone----------	45	High		Low	
		Texture/slope/ surface depth/coarse fragments	1.00		
Bullwark family-----	40	High		Low	
		Texture/slope/ surface depth/coarse fragments	1.00		
10:					
Grimstone----------	35	High		Low	
		Texture/slope/ surface depth/coarse fragments	1.00		
Hiwan----------	30	High		Low	
		Texture/slope/ surface depth	1.00		
Rock outcrop--------	20	Not rated		Not rated	
11:					
Grimstone----------	40	Low		Low	
Peeler----------	25	Low		Low	
Rock outcrop--------	20	Not rated		Not rated	
12:					
Herbman----------	70	Low		Low	
		Texture/coarse fragments	0.10		
13:					
Herbman----------	70	Low		Moderate	
		Texture/coarse fragments	0.10	Available water	0.50
Rock outcrop--------	15	Not rated		Not rated	
14:					
Herbman----------	70	Low		Low	
		Texture/coarse fragments	0.10		
Rock outcrop--------	15	Not rated		Not rated	
15:					
Hiwan----------	40	High		Low	
		Texture/slope/ surface depth/coarse fragments	1.00		

Table 12.--Forestland management (E)--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
15:					
Rock outcrop--------	30	Not rated		Not rated	
Bendemeere----------	20	High Texture/slope/ surface depth	1.00	Low	
16:					
Ivywild----------	40	Low		Low	
Legault----------	35	High Texture/slope/ surface depth/coarse fragments	1.00	Low	
Rock outcrop--------	15	Not rated		Not rated	
17:					
Ivywild----------	40	Low		Low	
Mammoth----------	25	Low		Low	
Legault----------	20	High Texture/slope/ surface depth	1.00	Low	
18:					
Kataka----------	40	Moderate Texture/slope/ coarse fragments	0.50	Low	
Resort----------	25	High Texture/slope/ coarse fragments	1.00	Low	
Rock outcrop--------	15	Not rated		Not rated	
19:					
Kittredge----------	60	Low Texture/coarse fragments	0.10	Low	
Guanella----------	25	Low Texture/coarse fragments	0.10	Low	
20:					
Kittredge----------	45	Low Texture/coarse fragments	0.10	Low	
Guanella----------	40	Low Texture/coarse fragments	0.10	Low	
21:					
Legault----------	80	High Texture/surface depth/coarse fragments	1.00	Moderate Available water	0.50

Table 12.--Forestland management (E)--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
22:					
Legault	75	High Texture/surface depth/coarse fragments	1.00	Low	
23:					
Legault	70	High Texture/slope/ surface depth	1.00	Low	
Rock outcrop	20	Not rated		Not rated	
24:					
Lininger	45	Low		Moderate Available water	0.50
Breece	40	Low Texture/coarse fragments	0.10	High Available water	1.00
25:					
Lininger	45	Low		Moderate Available water	0.50
Resort	40	Low		High Available water	1.00
26:					
Lininger	50	Low		Low	
Trag	35	Low		Low	
27:					
Lone Rock	55	Low Texture/coarse fragments	0.10	High Available water	1.00
Breece	35	Low Texture/coarse fragments	0.10	High Available water	1.00
28:					
Lone Rock	55	Low Texture/coarse fragments	0.10	High Available water	1.00
Breece	35	Low Texture/coarse fragments	0.10	High Available water	1.00
30:					
Mammoth	40	Low		Low	
Ohman	35	High Texture/surface depth/coarse fragments	1.00	Low	

Table 12.--Forestland management (E)--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
30:					
Bendemeere----------	20	High Texture/surface depth/coarse fragments	1.00	Low	
31:					
Mammoth----------	40	Low		Low	
Ohman----------	35	High Texture/slope/surface depth/coarse fragments	1.00	Low	
Bendemeere----------	15	High Texture/slope/surface depth/coarse fragments	1.00	Low	
32:					
Mammoth----------	50	Low		Low	
Ohman----------	25	High Texture/slope/surface depth/coarse fragments	1.00	Low	
Rock outcrop--------	15	Not rated		Not rated	
33:					
Ohman----------	45	High Texture/slope/surface depth/coarse fragments	1.00	Low	
Ivywild----------	35	Moderate Texture/slope/surface depth/coarse fragments	0.50	Low	
34:					
Ohman----------	55	High Texture/surface depth/coarse fragments	1.00	Low	
Legault----------	35	High Texture/surface depth/coarse fragments	1.00	Low	

Table 12.--Forestland management (E)--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
35:					
Ohman	50	High Texture/slope/surface depth/coarse fragments	1.00	Low	
Legault	45	High Texture/slope/surface depth/coarse fragments	1.00	Low	
36:					
Pettingell	50	Moderate Texture/slope/surface depth/coarse fragments	0.50	Low	
Rogert	20	Low		Low	
Rock outcrop	15	Not rated		Not rated	
37:					
Raleigh	85	Low		Moderate Available water	0.50
38:					
Raleigh	85	Low		Low	
39:					
Raleigh	85	Moderate Texture/slope/coarse fragments	0.50	Low	
40:					
Raleigh	60	Moderate Texture/slope/coarse fragments	0.50	Low	
Rock outcrop	20	Not rated		Not rated	
41:					
Redfeather	45	High Texture/slope/surface depth/coarse fragments	1.00	Low	
Legault	30	High Texture/slope/surface	1.00	Low	
42:					
Redfeather	40	Low		Low	
Legault	25	High Texture/surface depth/coarse fragments	1.00	Low	

Table 12.--Forestland management (E)--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
42:					
Tolvar	20	High Texture/surface depth/coarse fragments	1.00	Low	
43:					
Resort	80	Low		High Available water	1.00
44:					
Resort	80	Low		Low	
45:					
Resort	85	Moderate Texture/coarse fragments	0.50	High Available water	1.00
46:					
Resort	85	High Texture/slope/ coarse fragments	1.00	Low	
47:					
Resort	50	High Texture/slope/ coarse fragments	1.00	Low	
Cathedral	35	Low		Low	
48:					
Resort	35	High Texture/slope/ coarse fragments	1.00	Low	
Cathedral	30	Low		Low	
Rubble land	20	Not rated		Not rated	
49:					
Rock outcrop	85	Not rated		Not rated	
50:					
Rock outcrop	45	Not rated		Not rated	
Cathedral	25	Low		Low	
Resort	20	High Texture/slope/ coarse fragments	1.00	Low	
51:					
Rock outcrop	45	Not rated		Not rated	
Resort	30	High Texture/slope/ coarse fragments	1.00	Low	
52:					
Rock outcrop	40	Not rated		Not rated	

Table 12.--Forestland management (E)--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52:					
Rubble land---------	20	Not rated		Not rated	
Cathedral----------	20	Moderate Texture/surface depth/coarse fragments	0.50	Low	
53:					
Rock outcrop--------	40	Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated	
Cathedral----------	20	Low		Low	
54:					
Rock outcrop--------	60	Not rated		Not rated	
Tolland----------	30	High Texture/slope/surface depth/coarse fragments	1.00	Low	
55:					
Rogert----------	45	Low		Low	
Herbman----------	30	High Texture/slope/surface depth/coarse fragments	1.00	Low	
Rock outcrop--------	15	Not rated		Not rated	
56:					
Tahana----------	40	Low		Low	
Legault----------	30	High Texture/slope/surface depth	1.00	Low	
Rock outcrop--------	25	Not rated		Not rated	
57:					
Tolland----------	45	High Texture/slope/surface depth/coarse fragments	1.00	Low	
Rock outcrop--------	25	Not rated		Not rated	
58:					
Tonahutu----------	50	High Texture/slope/surface depth	1.00	Low	

Table 12.--Forestland management (E)--Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value
58:					
Ohman	35	High Texture/slope/surface depth/coarse fragments	1.00	Low	
59:					
Trag	70	Low		Moderate Available water	0.50
60:					
Troutdale	40	Low		Low	
Rogert	25	Moderate Texture/surface depth/coarse fragments	0.50	Moderate Available water	0.50
Kittredge	20	Low Texture/coarse fragments	0.10	Low	
61:					
Troutdale	45	Low Texture/coarse fragments	0.10	Low	
Sprucedale	40	Low Texture/coarse fragments	0.10	Low	
62:					
Typic Cryaquents	50	Low		High Wetness	1.00
Cumulic Cryaquolls	45	Low Texture/coarse fragments	0.10	High Wetness	1.00
63:					
Urban land	55	Not rated		Not rated	
Breece	35	Low Texture/coarse fragments	0.10	High Available water	1.00
64:					
Water	95	Not rated		Not rated	

Table 13.--Building site development (A)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.58	Content of large stones	0.58	Content of large stones	0.58
Dumps, mine	35	Not rated		Not rated		Not rated	
2:							
Bendemeere	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.13	Content of large stones	0.13	Content of large stones	0.13
Tolland	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
3:							
Breece	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
4:							
Cathedral	65	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.02	Content of large stones	0.02	Content of large stones	0.02
Rock outcrop	20	Not rated		Not rated		Not rated	
5:							
Cathedral	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.10	Content of large stones	0.10	Content of large stones	0.10
Rock outcrop	20	Not rated		Not rated		Not rated	
6:							
Cumulic Cryaquolls	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
7:							
Gateview	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.08
Kittredge	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.20		
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
9:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.20		
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
10:							
Grimstone----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.06		
Hiwan----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
11:							
Grimstone----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.06		
Peeler----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Somewhat limited		Very limited		Somewhat limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
						Slope	0.50
13:							
Herbman----------	70	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to soft bedrock	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
14:							
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15:							
Hiwan----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Rock outcrop--------	30	Not rated		Not rated		Not rated	
Bendemeere----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.13	Content of large stones	0.13	Content of large stones	0.13
16:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.90		
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
17:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.90		
Mammoth----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Legault----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
18:							
Kataka----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.94	Content of large stones	0.94	Content of large stones	0.94
				Depth to soft bedrock	0.35		
Resort----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
19:							
Kittredge	60	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Guanella	25	Not limited		Not limited		Somewhat limited	
						Slope	0.50
20:							
Kittredge	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Guanella	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
21:							
Legault	80	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
22:							
Legault	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
23:							
Legault	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
24:							
Lininger	45	Not limited		Somewhat limited		Somewhat limited	
				Depth to soft bedrock	0.01	Slope	0.88
Breece	40	Not limited		Not limited		Somewhat limited	
						Slope	0.88
25:							
Lininger	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
				Depth to soft bedrock	0.01		
Resort	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Content of large stones	1.00
26:							
Lininger	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.01		

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
26:							
Trag----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
27:							
Lone Rock----------	55	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Breece----------	35	Not limited		Not limited		Somewhat limited	
						Slope	0.50
28:							
Lone Rock----------	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
Breece----------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
30:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.07	Depth to soft bedrock	0.10	Content of large stones	0.07
				Content of large stones	0.07		
Bendemeere----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.13	Content of large stones	0.13	Content of large stones	0.13
31:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.07	Depth to soft bedrock	0.10	Content of large stones	0.07
				Content of large stones	0.07		
Bendemeere----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.21	Content of large stones	0.21	Content of large stones	0.21
32:							
Mammoth----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Ohman----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.07	Depth to soft bedrock	0.10	Content of large stones	0.07
				Content of large stones	0.07		

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
32:							
Rock outcrop--------	15	Not rated		Not rated		Not rated	
33:							
Ohman----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Depth to soft bedrock	0.10	Content of large stones	0.01
				Content of large stones	0.01		
Ivywild----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.95		
34:							
Ohman----------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Depth to soft bedrock	0.10	Content of large stones	0.01
				Content of large stones	0.01		
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
35:							
Ohman----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Depth to soft bedrock	0.10	Content of large stones	0.01
				Content of large stones	0.01		
Legault----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
36:							
Pettingell----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.84	Content of large stones	0.84	Content of large stones	0.84
Rogert----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.10	Content of large stones	0.10	Content of large stones	0.10
Rock outcrop--------	15	Not rated		Not rated		Not rated	

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
37:							
Raleigh----------	85	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to soft bedrock	1.00
38:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
39:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
40:							
Raleigh----------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
41:							
Redfeather----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	0.45	Content of large stones	0.45	Content of large stones	0.45
42:							
Redfeather----------	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
Legault----------	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to soft bedrock	1.00
		Content of large stones	0.45	Content of large stones	0.45	Content of large stones	0.45
Tolvar----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.08

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
43:							
Resort----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	0.81	Content of large stones	0.81	Content of large stones	0.81
						Slope	0.72
44:							
Resort----------	80	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to soft bedrock	1.00
		Content of large stones	0.81	Content of large stones	0.81	Content of large stones	0.81
45:							
Resort----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	0.81	Content of large stones	0.81	Content of large stones	0.81
46:							
Resort----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
47:							
Resort----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Cathedral----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.02	Content of large stones	0.02	Content of large stones	0.02
48:							
Resort----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Cathedral----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	0.02	Content of large stones	0.02	Content of large stones	0.02

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
48:							
Rubble land---------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
49:							
Rock outcrop--------	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Cathedral----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
Resort----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Cathedral----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Cathedral----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
55:							
Rogert----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
Herbman----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
56:							
Tahana----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.90		
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
57:							
Tolland----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
58:							
Tonahutu----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.07	Depth to soft bedrock	0.10	Content of large stones	0.07
				Content of large stones	0.07		
59:							
Trag----------	70	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
60:							
Troutdale----------	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.54	Slope	1.00
				Slope	0.04		

Table 13.--Building site development (A)--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60:							
Rogert----------	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Kittredge----------	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
61:							
Troutdale----------	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Depth to soft bedrock	0.54	Slope	1.00
				Slope	0.04		
Sprucedale----------	40	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
62:							
Typic Cryaquents----	50	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Cumulic Cryaquolls--	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
63:							
Urban land----------	55	Not rated		Not rated		Not rated	
Breece----------	35	Not limited		Not limited		Not limited	
64:							
Water----------	95	Not rated		Not rated		Not rated	

Table 14.--Building site development (B)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents----------	45	Not rated		Very limited		Not rated	
				Cutbanks cave	1.00		
				Slope	1.00		
				Content of large stones	0.58		
Dumps, mine---------	35	Not rated		Not rated		Not rated	
2:							
Bendemeere----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	1.00
		Content of large stones	0.13	Content of large stones	0.13		
Tolland----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	1.00
3:							
Breece----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
4:							
Cathedral----------	65	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Frost action	0.50	Cutbanks cave	0.10	Content of large stones	1.00
		Content of large stones	0.02	Content of large stones	0.02	Slope	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
5:							
Cathedral----------	65	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
		Content of large stones	0.10	Content of large stones	0.10	Content of large stones	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6:							
Cumulic Cryaquolls--	85	Not rated		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Droughty	0.02
7:							
Gateview----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.82
		Content of large stones	0.08	Content of large stones	0.08	Content of large stones	0.32
						Gravel content	0.07
Kittredge----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00		
8:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.20	Depth to bedrock	0.20
						Droughty	0.12
				Cutbanks cave	0.10		
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.55
9:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.20	Depth to bedrock	0.20
						Droughty	0.12
				Cutbanks cave	0.10		
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.55
10:							
Grimstone----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.41
				Depth to soft bedrock	0.06	Depth to bedrock	0.06
Hiwan----------	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
						Content of large stones	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11:							
Grimstone----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.49
				Depth to soft bedrock	0.06	Depth to bedrock	0.06
Peeler----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Content of large stones	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	1.00
				Cutbanks cave	0.10	Gravel content	0.50
						Content of large stones	0.01
13:							
Herbman----------	70	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
				Cutbanks cave	0.10	Gravel content	0.50
						Content of large stones	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00			Slope	1.00
				Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10	Gravel content	0.50
						Content of large stones	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15:							
Hiwan----------	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
						Slope	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Content of large stones	1.00	Content of large stones	1.00		
				Cutbanks cave	0.10		
Rock outcrop--------	30	Not rated		Not rated		Not rated	
Bendemeere----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	1.00
		Content of large stones	0.13	Content of large stones	0.13		

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.90	Depth to bedrock	0.90
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
17:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.90	Depth to bedrock	0.90
Mammoth----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.93
Legault----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10	Slope	1.00
18:							
Kataka----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.94	Content of large stones	0.94	Droughty	0.94
		Frost action	0.50	Depth to soft bedrock	0.35	Gravel content	0.92
				Cutbanks cave	0.10	Content of large stones	0.54
						Depth to bedrock	0.35
Resort----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Droughty	1.00
		Content of large stones	1.00	Content of large stones	1.00	Slope	1.00
				Cutbanks cave	0.10		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
19:							
Kittredge----------	60	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
Guanella----------	25	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Content of large stones	0.05

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
20:							
Kittredge----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00		
Guanella----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Content of large stones	0.01
21:							
Legault----------	80	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	1.00
		Slope	0.16	Slope	0.16	Slope	0.16
				Cutbanks cave	0.10		
22:							
Legault----------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00			Slope	1.00
				Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10		
23:							
Legault----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00			Slope	1.00
				Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10		
Rock outcrop--------	20	Not rated		Not rated		Not rated	
24:							
Lininger----------	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.20
				Depth to soft bedrock	0.01	Content of large stones	0.01
						Depth to bedrock	0.01
Breece----------	40	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
25:							
Lininger----------	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.16	Gravel content	0.20
		Slope	0.16	Cutbanks cave	0.10	Slope	0.16
				Depth to soft bedrock	0.01	Content of large stones	0.01
						Depth to bedrock	0.01
Resort----------	40	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
						Droughty	1.00
		Content of large stones	1.00	Content of large stones	1.00	Slope	0.04
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
26:							
Lininger----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.20
				Depth to soft bedrock	0.01	Content of large stones	0.01
						Depth to bedrock	0.01
Trag----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	1.00	Gravel content	0.16
		Frost action	0.50			Content of large stones	0.03
27:							
Lone Rock----------	55	Not limited		Very limited		Very limited	
				Cutbanks cave	1.00	Droughty	1.00
						Gravel content	0.13
						Content of large stones	0.08
Breece----------	35	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
28:							
Lone Rock----------	55	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Cutbanks cave	1.00	Droughty	1.00
				Slope	0.63	Slope	0.63
						Gravel content	0.13
						Content of large stones	0.08
Breece----------	35	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Content of large stones	0.20
		Slope	0.04	Slope	0.04	Droughty	0.19
						Gravel content	0.09
						Slope	0.04
30:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.93
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.07	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.10	Depth to bedrock	0.10
				Content of large stones	0.07		
Bendemeere----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	1.00
		Content of large stones	0.13	Content of large stones	0.13		

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.93
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.07	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.10	Depth to bedrock	0.10
				Content of large stones	0.07		
Bendemeere----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	1.00
		Content of large stones	0.21	Content of large stones	0.21		
32:							
Mammoth----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.93
Ohman----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.07	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.10	Depth to bedrock	0.10
				Content of large stones	0.07		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
33:							
Ohman----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.10	Depth to bedrock	0.10
				Content of large stones	0.01		
Ivywild----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.95	Depth to bedrock	0.95
34:							
Ohman----------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.10	Depth to bedrock	0.10
				Content of large stones	0.01		

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34:							
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
35:							
Ohman----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.01	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.10	Depth to bedrock	0.10
				Content of large stones	0.01		
Legault----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
36:							
Pettingell----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.84	Content of large stones	0.84	Droughty	0.82
		Frost action	0.50	Cutbanks cave	0.10	Content of large stones	0.20
						Gravel content	0.09
Rogert----------	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.10	Content of large stones	0.10	Content of large stones	1.00
				Cutbanks cave	0.10	Droughty	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
37:							
Raleigh----------	85	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Droughty	1.00
				Cutbanks cave	0.10	Slope	0.63
38:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
39:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40:							
Raleigh----------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Droughty	1.00
				Cutbanks cave	0.10	Slope	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
41:							
Redfeather----------	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.45	Content of large stones	0.45	Droughty	1.00
				Cutbanks cave	0.10		
42:							
Redfeather----------	40	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Frost action	0.50	Cutbanks cave	0.10	Slope	
Legault----------	25	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.00
		Content of large stones	0.45	Content of large stones	0.45	Slope	1.00
				Cutbanks cave	0.10		
Tolvar----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.69
		Content of large stones	0.08	Content of large stones	0.08		
43:							
Resort----------	80	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Content of large stones	0.81	Content of large stones	0.81	Droughty	1.
				Cutbanks cave	0.10		
44:							
Resort----------	80	Very limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Droughty	1.
		Content of large stones	0.81	Content of large stones	0.81	Slope	1.00
				Cutbanks cave	0.10		

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45:							
Resort	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.81	Content of large stones	0.81	Droughty	1.00
				Cutbanks cave	0.10		
46:							
Resort	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
				Cutbanks cave	0.10		
47:							
Resort	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
				Cutbanks cave	0.10		
Cathedral	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
		Content of large stones	0.02	Content of large stones	0.02	Content of large stones	1.00
48:							
Resort	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
				Cutbanks cave	0.10		
Cathedral	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
		Content of large stones	0.02	Content of large stones	0.02	Content of large stones	
Rubble land	20	Not rated		Not rated		Not rated	
49:							
Rock outcrop	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop	45	Not rated		Not rated		Not rated	

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50:							
Cathedral----------	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
						Content of large stones	1.00
						Gravel content	0.01
Resort----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
				Cutbanks cave	0.10		
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
				Cutbanks cave	0.10		
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
						Content of large stones	1.00
						Gravel content	0.01
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
						Content of large stones	1.00
						Gravel content	0.01
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	1.00

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
55:							
Rogert----------	45	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Droughty	1.00
				Cutbanks cave	0.10	Content of large stones	1.00
Herbman----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
						Content of large stones	0.61
Rock outcrop--------	15	Not rated		Not rated		Not rated	
56:							
Tahana----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.90	Depth to bedrock	0.90
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
57:							
Tolland----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
58:							
Tonahutu----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.60
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.07	Cutbanks cave	1.00	Droughty	1.00
				Depth to soft bedrock	0.10	Depth to bedrock	0.10
				Content of large stones	0.07		
59:							
Trag----------	70	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	1.00	Gravel content	0.16
		Frost action	0.50	Slope	0.04	Slope	0.04
		Slope	0.04			Content of large stones	0.03

Table 14.--Building site development (B)--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
60:							
Troutdale----------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to soft bedrock	0.54	Depth to bedrock	0.54
		Slope	0.04	Cutbanks cave	0.10	Droughty	0.06
				Slope	0.04	Slope	0.04
Rogert----------	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	0.04	Cutbanks cave	0.10	Droughty	1.00
				Slope	0.04	Gravel content	1.00
						Slope	0.04
						Content of large stones	0.01
Kittredge----------	20	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Slope	0.04
		Slope	0.04	Slope	0.04		
61:							
Troutdale----------	45	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.54
		Slope	0.04	Depth to soft bedrock	0.54	Droughty	0.34
				Slope	0.04	Gravel content	0.25
						Slope	0.04
Sprucedale----------	40	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Slope	0.04	Cutbanks cave	0.10	Droughty	1.00
				Slope	0.04	Gravel content	0.20
						Slope	0.04
						Content of large stones	0.01
62:							
Typic Cryaquents----	50	Not rated		Very limited		Very limited	
				Depth to saturated zone	1.00	Flooding	1.00
				Cutbanks cave	1.00	Depth to saturated zone	1.00
				Flooding	0.80	Content of large stones	0.03
Cumulic Cryaquolls--	45	Not rated		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Cutbanks cave	1.00	Flooding	0.60
				Flooding	0.60	Droughty	0.02
63:							
Urban land----------	55	Not rated		Not rated		Not rated	
Breece----------	35	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Content of large stones	0.20
						Droughty	0.19
						Gravel content	0.09
64:							
Water----------	95	Not rated		Not rated		Not rated	

Table 15.--Sanitary facilities (A)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Arents	45	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.58	Content of large stones	0.78
Dumps, mine	35	Not rated		Not rated	
2:					
Bendemeere	50	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.13	Content of large stones	1.00
Tolland	35	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
3:					
Breece	80	Very limited		Very limited	
		Slope	1.00	Seepage	1.00
				Slope	1.00
4:					
Cathedral	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.02	Content of large stones	0.01
Rock outcrop	20	Not rated		Not rated	
5:					
Cathedral	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.10	Content of large stones	0.06
Rock outcrop	20	Not rated		Not rated	
6:					
Cumulic Cryaquolls	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
7:					
Gateview----------	50	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00	Content of large stones	0.22
		Content of large stones	0.08		
Kittredge----------	30	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
		Restricted permeability	1.00		
8:					
Grimstone----------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
		Restricted permeability	0.46	Slope	1.00
				Seepage	1.00
Bullwark family-----	40	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00		
9:					
Grimstone----------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
		Restricted permeability	0.46	Slope	1.00
				Seepage	1.00
Bullwark family-----	40	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00		
10:					
Grimstone----------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	1.00
Hiwan----------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	1.00
Rock outcrop--------	20	Not rated		Not rated	

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
11:					
Grimstone----------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Peeler----------	25	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.72	Seepage	1.00
Rock outcrop--------	20	Not rated		Not rated	
12:					
Herbman----------	70	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
				Seepage	1.00
				Slope	0.92
13:					
Herbman----------	70	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00
				Seepage	1.00
Rock outcrop--------	15	Not rated		Not rated	
14:					
Herbman----------	70	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop--------	15	Not rated		Not rated	
15:					
Hiwan----------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00
				Seepage	1.00
Rock outcrop--------	30	Not rated		Not rated	
Bendemeere----------	20	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00	Content of large stones	
		Content of large stones	0.13		

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
16:					
Ivywild----------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Legault----------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop--------	15	Not rated		Not rated	
17:					
Ivywild----------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Mammoth----------	25	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Legault----------	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
18:					
Kataka----------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Content of large stones	0.45
		Content of large stones	0.94	Seepage	0.21
Resort----------	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
				Content of large stones	1.00
Rock outcrop--------	15	Not rated		Not rated	
19:					
Kittredge----------	60	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	1.00	Slope	0.92

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
19:					
Guanella----------	25	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.92
20:					
Kittredge----------	45	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Restricted permeability	1.00		
		Slope	1.00		
Guanella----------	40	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
21:					
Legault----------	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.16		
				Seepage	1.00
				Slope	1.00
22:					
Legault----------	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
				Slope	1.00
				Seepage	1.00
23:					
Legault----------	70	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00		
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop--------	20	Not rated		Not rated	
24:					
Lininger----------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.72		
				Slope	1.00
				Seepage	0.28
Breece----------	40	Not limited		Very limited	
				Seepage	1.00
				Slope	1.00
25:					
Lininger----------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.72		
				Slope	1.00
		Slope	0.16	Seepage	0.28

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
25:					
Resort	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	1.00	Seepage	1.00
		Slope	0.04	Slope	1.00
				Content of large stones	1.00
26:					
Lininger	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Restricted permeability	0.72	Seepage	0.28
Trag	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	1.00	Seepage	0.53
27:					
Lone Rock	55	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
				Slope	0.92
Breece	35	Not limited		Very limited	
				Seepage	1.00
				Slope	0.92
28:					
Lone Rock	55	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	0.63		
Breece	35	Somewhat limited		Very limited	
		Slope	0.04	Seepage	1.00
				Slope	1.00
30:					
Mammoth	40	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00		
Ohman	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.07	Seepage	1.00
				Content of large stones	0.49
Bendemeere	20	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
				Seepage	1.00
		Slope	1.00	Content of large stones	1.00
		Content of large stones	0.13		

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
31:					
Mammoth	40	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Ohman	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.07	Seepage	1.00
				Content of large stones	0.49
Bendemeere	15	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Content of large stones	0.21	Content of large stones	1.00
32:					
Mammoth	50	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Ohman	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.07	Seepage	1.00
				Content of large stones	0.49
Rock outcrop	15	Not rated		Not rated	
33:					
Ohman	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	1.00
				Content of large stones	0.01
Ivywild	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
34:					
Ohman	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	1.00
				Content of large stones	0.01

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
34:					
Legault----------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
35:					
Ohman----------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.01	Seepage	1.00
				Content of large stones	0.01
Legault----------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
36:					
Pettingell----------	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	0.84	Seepage	1.00
				Content of large stones	0.07
Rogert----------	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.10	Seepage	1.00
				Content of large stones	0.59
Rock outcrop--------	15	Not rated		Not rated	
37:					
Raleigh----------	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.63	Slope	1.00
				Seepage	1.00
38:					
Raleigh----------	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
39:					
Raleigh----------	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
40:					
Raleigh----------	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop--------	20	Not rated		Not rated	
41:					
Redfeather----------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
Legault----------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.45	Seepage	1.00
				Content of large stones	0.99
42:					
Redfeather----------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.53
Legault----------	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.45	Seepage	1.00
				Content of large stones	0.99
Tolvar----------	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.46	Seepage	1.00
		Content of large stones	0.08	Content of large stones	0.14
43:					
Resort----------	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Content of large stones	0.81	Seepage	1.00
				Slope	0.98
				Content of large stones	0.97

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
44:					
Resort	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.81	Seepage	1.00
				Content of large stones	0.97
45:					
Resort	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.81	Seepage	1.00
				Content of large stones	0.97
46:					
Resort	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
				Content of large stones	1.00
47:					
Resort	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
				Content of large stones	1.00
Cathedral	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.02	Content of large stones	0.01
48:					
Resort	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
				Content of large stones	1.00
Cathedral	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.02	Content of large stones	0.01

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
48:					
Rubble land---------	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00
		Depth to bedrock	0.27		
49:					
Rock outcrop--------	85	Not rated		Not rated	
50:					
Rock outcrop--------	45	Not rated		Not rated	
Cathedral----------	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
Resort----------	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
				Content of large stones	1.00
51:					
Rock outcrop--------	45	Not rated		Not rated	
Resort----------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
				Content of large stones	1.00
52:					
Rock outcrop--------	40	Not rated		Not rated	
Rubble land---------	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00
		Depth to bedrock	0.27		
Cathedral----------	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
53:					
Rock outcrop--------	40	Not rated		Not rated	
Rubble land---------	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00
		Depth to bedrock	0.27		

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
53:					
Cathedral----------	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
54:					
Rock outcrop--------	60	Not rated		Not rated	
Tolland----------	30	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
55:					
Rogert----------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	1.00	Seepage	1.00
				Content of large stones	1.00
Herbman----------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop--------	15	Not rated		Not rated	
56:					
Tahana----------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Legault----------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop--------	25	Not rated		Not rated	
57:					
Tolland----------	45	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
Rock outcrop--------	25	Not rated		Not rated	
58:					
Tonahutu----------	50	Very limited		Very limited	
		Filtering capacity	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Depth to bedrock	0.86	Depth to soft bedrock	0.61

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
58:					
Ohman	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Slope	1.00
		Content of large stones	0.07	Seepage	1.00
				Content of large stones	0.49
59:					
Trag	70	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04	Seepage	0.53
60:					
Troutdale	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Restricted permeability	0.72	Slope	1.00
		Slope	0.04	Seepage	0.28
Rogert	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.04	Slope	1.00
Kittredge	20	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Restricted permeability	1.00	Slope	1.00
		Slope	0.04		
61:					
Troutdale	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	1.00
Sprucedale	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.04	Slope	1.00
				Seepage	0.21
62:					
Typic Cryaquents	50	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
		Restricted permeability	1.00		

Table 15.--Sanitary facilities (A)--Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
62:					
Cumulic Cryaquolls--	45	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	1.00
63:					
Urban land----------	55	Not rated		Not rated	
Breece----------	35	Not limited		Very limited	
				Seepage	1.00
				Slope	0.08
64:					
Water----------	95	Not rated		Not rated	

Table 16.--Sanitary facilities (B)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents	45	Not rated		Not rated		Not rated	
Dumps, mine	35	Not rated		Not rated		Not rated	
2:							
Bendemeere	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
		Content of large stones	0.01			Gravel content	0.34
						Content of large stones	0.01
Tolland	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Gravel content	1.00
		Content of large stones	0.02			Too sandy	0.50
						Content of large stones	0.02
3:							
Breece	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Seepage	0.52
						Gravel content	0.11
4:							
Cathedral	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00			Gravel content	0.68
		Content of large stones	0.02			Seepage	0.22
						Content of large stones	0.02
Rock outcrop	20	Not rated		Not rated		Not rated	
5:							
Cathedral	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	0.52
		Content of large stones	0.10			Seepage	0.22
						Content of large stones	0.10
Rock outcrop	20	Not rated		Not rated		Not rated	
6:							
Cumulic Cryaquolls	85	Not rated		Very limited		Not rated	
				Flooding	1.00		
				Depth to saturated zone	1.00		
				Seepage	1.00		

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
6:							
Cumulic Cryaquolls--	85	Not rated		Very limited		Not rated	
				Flooding	1.00		
				Depth to saturated zone	1.00		
				Seepage	1.00		
7:							
Gateview----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.52
		Content of large stones	0.15			Content of large stones	0.15
						Gravel content	0.09
Kittredge----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
						Too clayey	0.50
8:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
						Seepage	1.00
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to bedrock	1.00	Gravel content	0.63
						Seepage	0.52
9:							
Grimstone----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Seepage	1.00
Bullwark family-----	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.63
						Seepage	0.52
10:							
Grimstone----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
						Gravel content	0.14
Hiwan----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Gravel content	1.00
						Too sandy	0.50
Rock outcrop--------	20	Not rated		Not rated		Not rated	

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11:							
Grimstone----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	0.52
						Gravel content	0.13
Peeler----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.10
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Gravel content	0.87
						Too sandy	0.50
13:							
Herbman----------	70	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.63	Seepage	1.00
		Too sandy	1.00			Gravel content	0.75
		Slope	0.63			Slope	0.63
						Too sandy	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Gravel content	0.75
						Too sandy	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15:							
Hiwan----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	1.00
		Content of large stones	1.00			Too sandy	0.50
Rock outcrop--------	30	Not rated		Not rated		Not rated	
Bendemeere----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
		Content of large stones	0.01			Gravel content	0.34
						Content of large stones	0.01

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	1.00
						Seepage	0.52
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Gravel content	0.92
						Too sandy	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
17:							
Ivywild----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	1.00
						Seepage	0.52
Mammoth----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
						Gravel content	0.90
Legault----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00
18:							
Kataka----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Content of large stones	0.94			Content of large stones	0.94
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.01
Resort----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	1.00
		Content of large stones	1.00			Too sandy	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
19:							
Kittredge----------	60	Very limited		Not limited		Very limited	
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
						Too clayey	0.50

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
19:							
Guanella----------	25	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
20:							
Kittredge----------	45	Very limited		Very limited		Very limited	
		Seepage	1.00	Slope	1.00	Seepage	1.00
		Too sandy	1.00			Slope	1.00
		Slope	1.00			Too sandy	0.50
						Too clayey	0.50
Guanella----------	40	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00	Slope	1.00	Slope	1.00
		Slope	1.00			Too sandy	0.50
21:							
Legault----------	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.16	Seepage	1.00
		Too sandy	1.00			Gravel content	0.92
		Slope	0.16			Too sandy	0.50
						Slope	0.16
22:							
Legault----------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Gravel content	0.92
						Too sandy	0.50
23:							
Legault----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
24:							
Lininger----------	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Breece----------	40	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.52
						Gravel content	0.11
25:							
Lininger----------	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.16	Slope	0.16	Slope	0.16

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25:							
Resort----------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.04	Seepage	1.00
		Too sandy	1.00			Content of large stones	1.00
		Content of large stones	1.00			Too sandy	0.50
		Slope	0.04			Slope	0.04
26:							
Lininger----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
Trag----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
27:							
Lone Rock----------	55	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00
Breece----------	35	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.52
						Gravel content	0.11
28:							
Lone Rock----------	55	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00	Slope	0.63	Seepage	1.00
		Slope	0.63			Gravel content	1.00
						Slope	0.63
Breece----------	35	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.52
		Slope	0.04	Slope	0.04	Gravel content	0.11
						Slope	0.04
30:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
						Gravel content	0.90
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.87
		Content of large stones	0.07			Seepage	0.52
						Content of large stones	0.07
Bendemeere----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
		Content of large stones	0.01			Gravel content	0.34
						Content of large stones	0.01

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31:							
Mammoth----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
						Gravel content	0.90
Ohman----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.87
		Content of large stones	0.07			Seepage	0.52
						Content of large stones	0.07
Bendemeere----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
		Content of large stones	0.03			Gravel content	0.28
						Content of large stones	0.03
32:							
Mammoth----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
						Gravel content	0.90
Ohman----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.87
		Content of large stones	0.07			Seepage	0.52
						Content of large stones	0.07
Rock outcrop--------	15	Not rated		Not rated		Not rated	
33:							
Ohman----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.98
		Content of large stones	0.01			Seepage	0.52
						Content of large stones	0.01
Ivywild----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	1.00
						Seepage	0.52
34:							
Ohman----------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.98
		Content of large stones	0.01			Seepage	0.52
						Content of large stones	0.01

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
34:							
Legault----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Gravel content	0.92
						Too sandy	0.50
35:							
Ohman----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.98
		Content of large stones	0.01			Seepage	0.52
						Content of large stones	0.01
Legault----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Gravel content	0.92
						Too sandy	0.50
36:							
Pettingell----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Content of large stones	1.00
		Content of large stones	1.00			Seepage	0.52
Rogert----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	0.52
		Content of large stones	0.10			Gravel content	0.34
						Content of large stones	0.10
Rock outcrop--------	15	Not rated		Not rated		Not rated	
37:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.63	Gravel content	1.00
		Slope	0.63			Slope	0.63
						Seepage	0.52
38:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
						Seepage	0.52
39:							
Raleigh----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
						Seepage	0.52

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40:							
Raleigh----------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	1.00
						Seepage	0.52
Rock outcrop--------	20	Not rated		Not rated		Not rated	
41:							
Redfeather----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.39
Legault----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
		Content of large stones	0.45			Content of large stones	0.45
42:							
Redfeather----------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.39
Legault----------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	1.00	Seepage	1.00
		Too sandy	1.00			Slope	1.00
		Slope	1.00			Too sandy	0.50
		Content of large stones	0.45			Content of large stones	0.45
Tolvar----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	0.03			Gravel content	0.64
						Content of large stones	0.03
43:							
Resort----------	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	0.81
		Content of large stones	0.81			Too sandy	0.50
						Gravel content	0.05
44:							
Resort----------	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	1.00	Seepage	1.00
		Too sandy	1.00			Slope	1.00
		Slope	1.00			Content of large stones	0.81
		Content of large stones	0.81			Too sandy	0.50

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45:							
Resort----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	0.81
		Content of large stones	0.81			Too sandy	0.50
46:							
Resort----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	1.00
		Content of large stones	1.00			Too sandy	0.50
47:							
Resort----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	1.00
		Content of large stones	1.00			Too sandy	0.50
Cathedral----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	0.68
		Content of large stones	0.02			Seepage	0.22
						Content of large stones	0.02
48:							
Resort----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	1.00
		Content of large stones	1.00			Too sandy	0.50
Cathedral----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	0.68
		Content of large stones	0.02			Seepage	0.22
						Content of large stones	0.02
Rubble land---------	20	Not rated		Not rated		Not rated	
49:							
Rock outcrop--------	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
50:							
Cathedral----------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	0.79
						Seepage	0.22
Resort----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	1.00
		Content of large stones	1.00			Too sandy	0.50
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Seepage	1.00
		Too sandy	1.00			Content of large stones	1.00
		Content of large stones	1.00			Too sandy	0.50
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	0.79
						Seepage	0.22
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	0.79
						Seepage	0.22
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Gravel content	1.00
		Content of large stones	0.02			Too sandy	0.50
						Content of large stones	0.02

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
55:							
Rogert	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Content of large stones	1.00
		Content of large stones	1.00			Seepage	0.52
						Gravel content	0.04
Herbman	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Gravel content	0.88
						Seepage	0.52
Rock outcrop	15	Not rated		Not rated		Not rated	
56:							
Tahana	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Seepage	1.00
		Too sandy	1.00			Gravel content	0.88
						Too sandy	0.50
Legault	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00			Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
57:							
Tolland	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Gravel content	1.00
		Content of large stones	0.02			Too sandy	0.50
						Content of large stones	0.02
Rock outcrop	25	Not rated		Not rated		Not rated	
58:							
Tonahutu	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	0.61
		Seepage	1.00	Depth to bedrock	0.61	Seepage	0.52
						Gravel content	0.17
Ohman	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
		Seepage	1.00	Depth to bedrock	1.00	Gravel content	0.87
		Content of large stones	0.07			Seepage	0.52
						Content of large stones	0.07

Table 16.--Sanitary facilities (B)--Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59:							
Trag----------	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
60:							
Troutdale----------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.04	Slope	0.04	Slope	0.04
Rogert----------	25	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.04	Gravel content	1.00
		Slope	0.04			Seepage	0.52
						Slope	0.04
Kittredge----------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Slope	0.04	Seepage	1.00
		Too sandy	1.00			Too sandy	0.50
		Slope	0.04			Too clayey	0.50
						Slope	0.04
61:							
Troutdale----------	45	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.22
		Slope	0.04	Slope	0.04	Slope	0.04
						Gravel content	0.01
Sprucedale----------	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage	1.00	Slope	0.04	Seepage	0.22
		Slope	0.04			Slope	0.04
						Gravel content	0.02
62:							
Typic Cryaquents----	50	Not rated		Very limited		Not rated	
				Flooding	1.00		
				Depth to saturated zone	1.00		
				Seepage	1.00		
Cumulic Cryaquolls--	45	Not rated		Very limited		Not rated	
				Flooding	1.00		
				Depth to saturated zone	1.00		
				Seepage	1.00		
63:							
Urban land----------	55	Not rated		Not rated		Not rated	
Breece----------	35	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Seepage	0.52
						Gravel content	0.11
64:							
Water----------	95	Not rated		Not rated		Not rated	

Table 17.--Construction materials (A)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel.See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1:					
Arents----------	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Dumps, mine---------	35	Not rated		Not rated	
2:					
Bendemeere----------	50	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.01	Thickest layer	0.01
		Bottom layer	0.12	Bottom layer	0.10
Tolland----------	35	Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.49	Thickest layer	0.35
3:					
Breece----------	80	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.09
		Thickest layer	0.00	Thickest layer	0.10
4:					
Cathedral----------	65	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09
Rock outcrop--------	20	Not rated		Not rated	
5:					
Cathedral----------	65	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09
Rock outcrop--------	20	Not rated		Not rated	
6:					
Cumulic Cryaquolls--	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.63
7:					
Gateview----------	50	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.09
		Bottom layer	0.00	Bottom layer	0.14
Kittredge----------	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
8:					
Grimstone----------	45	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Content of organic matter	0.00
		Content of organic matter	0.00	Thickest layer	0.11
Bullwark family-----	40	Fair		Fair	
		Thickest layer	0.00	Bottom layer	0.09
		Bottom layer	0.12	Thickest layer	0.09
9:					
Grimstone----------	45	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Content of organic matter	0.00
		Content of organic matter	0.00	Thickest layer	0.11
Bullwark family-----	40	Fair		Fair	
		Thickest layer	0.00	Bottom layer	0.09
		Bottom layer	0.12	Thickest layer	0.09
10:					
Grimstone----------	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.04
		Thickest layer	0.00	Bottom layer	0.08
Hiwan----------	30	Fair		Fair	
		Thickest layer	0.07	Thickest layer	0.07
		Bottom layer	0.12	Bottom layer	0.58
Rock outcrop--------	20	Not rated		Not rated	
11:					
Grimstone----------	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.04
		Thickest layer	0.00	Bottom layer	0.08
Peeler----------	25	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.06
		Thickest layer	0.00	Thickest layer	0.06
Rock outcrop--------	20	Not rated		Not rated	
12:					
Herbman----------	70	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.25
13:					
Herbman----------	70	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.25
Rock outcrop--------	15	Not rated		Not rated	
14:					
Herbman----------	70	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.25
Rock outcrop--------	15	Not rated		Not rated	

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
15:					
Hiwan	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
Rock outcrop	30	Not rated		Not rated	
Bendemeere	20	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.01	Thickest layer	0.01
		Bottom layer	0.12	Bottom layer	0.10
16:					
Ivywild	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.69	Bottom layer	0.09
Legault	35	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.04	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.25
Rock outcrop	15	Not rated		Not rated	
17:					
Ivywild	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.69	Bottom layer	0.09
Mammoth	25	Fair		Fair	
		Bottom layer	0.00	Content of organic matter	0.00
		Content of organic matter	0.00	Bottom layer	0.29
		Thickest layer	0.19	Thickest layer	0.36
Legault	20	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.04	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.86
18:					
Kataka	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Resort	25	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
Rock outcrop	15	Not rated		Not rated	

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
19:					
Kittredge	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
Guanella	25	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.26
		Thickest layer	0.00	Bottom layer	0.39
20:					
Kittredge	45	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
Guanella	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.26
		Thickest layer	0.00	Bottom layer	0.39
21:					
Legault	80	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.04	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.25
22:					
Legault	75	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.04	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.25
23:					
Legault	70	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.04	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.86
Rock outcrop	20	Not rated		Not rated	
24:					
Lininger	45	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
Breece	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.09
		Thickest layer	0.00	Thickest layer	0.10
25:					
Lininger	45	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
Resort	40	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
26:					
Lininger----------	50	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.05
Trag----------	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
27:					
Lone Rock----------	55	Fair		Fair	
		Thickest layer	0.25	Bottom layer	0.39
		Bottom layer	0.49	Thickest layer	0.45
Breece----------	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.09
		Thickest layer	0.00	Thickest layer	0.10
28:					
Lone Rock----------	55	Fair		Fair	
		Thickest layer	0.25	Bottom layer	0.39
		Bottom layer	0.49	Thickest layer	0.45
Breece----------	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.09
		Thickest layer	0.00	Thickest layer	0.10
30:					
Mammoth----------	40	Fair		Fair	
		Bottom layer	0.00	Content of organic matter	0.00
		Content of organic matter	0.00	Bottom layer	0.29
		Thickest layer	0.19	Thickest layer	0.36
Ohman----------	35	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.09	Thickest layer	0.09
		Bottom layer	0.49	Bottom layer	0.09
Bendemeere----------	20	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.01	Thickest layer	0.01
		Bottom layer	0.12	Bottom layer	0.10
31:					
Mammoth----------	40	Fair		Fair	
		Bottom layer	0.00	Content of organic matter	0.00
		Content of organic matter	0.00	Bottom layer	0.29
		Thickest layer	0.19	Thickest layer	0.36
Ohman----------	35	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.09	Thickest layer	0.09
		Bottom layer	0.49	Bottom layer	0.09

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
31:					
Bendemeere----------	15	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.01	Thickest layer	0.01
		Bottom layer	0.12	Bottom layer	0.10
32:					
Mammoth----------	50	Fair		Fair	
		Bottom layer	0.00	Content of organic matter	0.00
		Content of organic matter	0.00	Bottom layer	0.29
		Thickest layer	0.19	Thickest layer	0.36
Ohman----------	25	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.09	Thickest layer	0.09
		Bottom layer	0.49	Bottom layer	0.09
Rock outcrop--------	15	Not rated		Not rated	
33:					
Ohman----------	45	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.09	Thickest layer	0.09
		Bottom layer	0.49	Bottom layer	0.09
Ivywild----------	35	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.12	Bottom layer	0.10
34:					
Ohman----------	55	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.09	Thickest layer	0.09
		Bottom layer	0.49	Bottom layer	0.09
Legault----------	35	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.04	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.25
35:					
Ohman----------	50	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.09	Thickest layer	0.09
		Bottom layer	0.49	Bottom layer	0.09
Legault----------	45	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.04	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.25

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
36:					
Pettingell----------	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rogert----------	20	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09
Rock outcrop--------	15	Not rated		Not rated	
37:					
Raleigh----------	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.12	Bottom layer	0.09
38:					
Raleigh----------	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.12	Bottom layer	0.09
39:					
Raleigh----------	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.12	Bottom layer	0.09
40:					
Raleigh----------	60	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.12	Bottom layer	0.09
Rock outcrop--------	20	Not rated		Not rated	
41:					
Redfeather----------	45	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.12	Bottom layer	0.05
Legault----------	30	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.07	Thickest layer	0.07
		Bottom layer	0.12	Bottom layer	0.25
42:					
Redfeather----------	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.12	Bottom layer	0.05

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
42:					
Legault	25	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.07	Thickest layer	0.07
		Bottom layer	0.12	Bottom layer	0.25
Tolvar	20	Fair		Fair	
		Thickest layer	0.12	Bottom layer	0.05
		Bottom layer	0.12	Thickest layer	0.05
43:					
Resort	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
44:					
Resort	80	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
45:					
Resort	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
46:					
Resort	85	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
47:					
Resort	50	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
Cathedral	35	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09
48:					
Resort	35	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
Cathedral	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
48:					
Rubble land---------	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
49:					
Rock outcrop--------	85	Not rated		Not rated	
50:					
Rock outcrop--------	45	Not rated		Not rated	
Cathedral----------	25	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09
Resort----------	20	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
51:					
Rock outcrop--------	45	Not rated		Not rated	
Resort----------	30	Poor		Poor	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.00	Bottom layer	0.00
52:					
Rock outcrop--------	40	Not rated		Not rated	
Rubble land---------	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cathedral----------	20	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09
53:					
Rock outcrop--------	40	Not rated		Not rated	
Rubble land---------	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cathedral----------	20	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09
54:					
Rock outcrop--------	60	Not rated		Not rated	
Tolland----------	30	Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.49	Thickest layer	0.35

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
55:					
Rogert	45	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.49	Bottom layer	0.09
Herbman	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.08
Rock outcrop	15	Not rated		Not rated	
56:					
Tahana	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Bottom layer	0.43	Bottom layer	0.32
Legault	30	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.04	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.86
Rock outcrop	25	Not rated		Not rated	
57:					
Tolland	45	Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.49	Thickest layer	0.35
Rock outcrop	25	Not rated		Not rated	
58:					
Tonahutu	50	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.09	Thickest layer	0.09
		Bottom layer	0.12	Bottom layer	0.19
Ohman	35	Fair		Fair	
		Content of organic matter	0.00	Content of organic matter	0.00
		Thickest layer	0.09	Thickest layer	0.09
		Bottom layer	0.49	Bottom layer	0.09
59:					
Trag	70	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
60:					
Troutdale	40	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Rogert	25	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.09

Table 17.--Construction materials (A)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
60:					
Kittredge----------	20	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.22
61:					
Troutdale----------	45	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.09
Sprucedale----------	40	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.09
62:					
Typic Cryaquents----	50	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.14
		Bottom layer	0.12	Bottom layer	0.71
Cumulic Cryaquolls--	45	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.63
63:					
Urban land----------	55	Not rated		Not rated	
Breece----------	35	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.09
		Thickest layer	0.00	Thickest layer	0.10
64:					
Water----------	95	Not rated		Not rated	

Table 18.--Construction materials (B)

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Arents----------	45	Poor		Not rated		Poor	
		Droughty	0.00			Hard to reclaim	0.00
		Low content of organic matter	0.00			Rock fragments	0.00
		Cobble content	0.25			Slope	0.00
		Too sandy	0.31			Too sandy	0.31
		Too acid	0.50			Too acid	0.95
		Stone content	0.66				
Dumps, mine---------	35	Not rated		Not rated		Not rated	
2:							
Bendemeere----------	50	Fair		Poor		Poor	
		Droughty	0.02	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Stone content	0.32	Hard to reclaim	0.00
		Stone content	0.41	Cobble content	0.85	Rock fragments	0.00
		Too acid	0.74				
Tolland----------	35	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Too sandy	0.04	Cobble content	0.99	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Too acid	0.46			Too sandy	0.04
						Too acid	0.95
3:							
Breece----------	80	Fair		Fair		Poor	
		Low content of organic matter	0.88	Slope	0.32	Rock fragments	0.00
		Too acid	0.95			Slope	0.00
						Hard to reclaim	0.68
4:							
Cathedral----------	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.98	Depth to bedrock	0.00
		Stone content	0.97	Cobble content	0.99	Slope	0.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
5:							
Cathedral----------	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.92	Cobble content	0.97	Depth to bedrock	0.00
Rock outcrop--------	20	Not rated		Not rated		Not rated	
6:							
Cumulic Cryaquolls--	85	Poor		Not rated		Poor	
		Too sandy	0.00			Too sandy	0.00
		Droughty	0.71			Hard to reclaim	0.00
		Stone content	0.72			Rock fragments	0.00
						Depth to saturated zone	0.00

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
7:							
Gateview----------	50	Fair		Poor		Poor	
		Droughty	0.03	Slope	0.00	Slope	0.00
		Too acid	0.84	Cobble content	0.37	Rock fragments	0.00
		Cobble content	0.98			Hard to reclaim	0.00
Kittredge----------	30	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
8:							
Grimstone----------	45	Fair		Poor		Poor	
		Droughty	0.06	Depth to bedrock	0.00	Rock fragments	0.00
		Too sandy	0.18	Slope	0.59	Slope	0.00
		Low content of organic matter	0.50			Too sandy	0.18
		Depth to bedrock	0.79			Depth to bedrock	0.79
		Too acid	0.84				
		Water erosion	0.99				
Bullwark family-----	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Hard to reclaim	0.00
		Too acid	0.74	Slope	0.59	Rock fragments	0.00
						Slope	0.00
9:							
Grimstone----------	45	Fair		Poor		Poor	
		Droughty	0.06	Depth to bedrock	0.00	Slope	0.00
		Too sandy	0.18	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.50			Too sandy	0.18
		Depth to bedrock	0.79			Depth to bedrock	0.79
		Too acid	0.84				
		Water erosion	0.99				
Bullwark family-----	40	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Too acid	0.74	Depth to bedrock	0.00	Hard to reclaim	0.00
						Rock fragments	0.00
10:							
Grimstone----------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.84			Depth to bedrock	0.93
		Depth to bedrock	0.93				
Hiwan----------	30	Poor		Poor		Poor	
		Too sandy	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Too sandy	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Low content of organic matter	0.50			Depth to bedrock	0.00
		Too acid	0.92				
Rock outcrop--------	20	Not rated		Not rated		Not rated	

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
11:							
Grimstone----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.08	Rock fragments	0.00
		Too acid	0.84			Depth to bedrock	0.93
		Depth to bedrock	0.93				
Peeler----------	25	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.08	Slope	0.00
		Too acid	0.68			Rock fragments	0.00
						Hard to reclaim	0.82
Rock outcrop--------	20	Not rated		Not rated		Not rated	
12:							
Herbman----------	70	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
13:							
Herbman----------	70	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
						Slope	0.37
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14:							
Herbman----------	70	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.08	Depth to bedrock	0.00
						Rock fragments	0.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15:							
Hiwan----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Cobble content	0.00	Cobble content	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.12			Too sandy	0.19
		Too sandy	0.19				
		Too acid	0.84				
		Stone content	0.99				
Rock outcrop--------	30	Not rated		Not rated		Not rated	
Bendemeere----------	20	Fair		Poor		Poor	
		Droughty	0.02	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Stone content	0.32	Hard to reclaim	0.00
		Stone content	0.41	Cobble content	0.85	Rock fragments	0.00
		Too acid	0.74				

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
16:							
Ivywild----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.10	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Stone content	0.99	Depth to bedrock	0.10
		Low content of organic matter	0.50			Too acid	0.88
		Stone content	0.92				
Legault----------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Stone content	0.78	Depth to bedrock	0.00
		Too sandy	0.16			Too sandy	0.16
		Stone content	0.46				
		Too acid	0.84				
Rock outcrop--------	15	Not rated		Not rated		Not rated	
17:							
Ivywild----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.10	Slope	0.00	Rock fragments	0.00
		Too acid	0.50	Stone content	0.99	Depth to bedrock	0.10
		Low content of organic matter	0.50			Too acid	0.88
		Stone content	0.92				
Mammoth----------	25	Fair		Poor		Poor	
		Too sandy	0.04	Slope	0.00	Slope	0.00
		Droughty	0.20	Stone content	0.68	Hard to reclaim	0.00
		Stone content	0.30			Rock fragments	0.00
		Too acid	0.39			Too sandy	0.04
		Low content of organic matter	0.88			Too acid	0.92
Legault----------	20	Poor		Poor		Poor	
		Too sandy	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Too sandy	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Depth to bedrock	0.00
		Too acid	0.84				
18:							
Kataka----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Stone content	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Stone content	0.00	Depth to bedrock	0.65
				Cobble content	0.85		
		Depth to bedrock	0.65				

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
18:							
Resort	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.01	Rock fragments	0.00
		Too sandy	0.00	Cobble content	0.22	Too sandy	0.00
		Low content of organic matter	0.12				
		Cobble content	0.59				
		Too acid	0.84				
Rock outcrop	15	Not rated		Not rated		Not rated	
19:							
Kittredge	60	Fair		Good		Good	
		Low content of organic matter	0.12				
Guanella	25	Fair		Good		Poor	
		Low content of organic matter	0.50			Rock fragments	0.00
		Too acid	0.95			Hard to reclaim	0.24
		Droughty	0.98				
		Water erosion	0.99				
20:							
Kittredge	45	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.50	Slope	0.00
Guanella	40	Fair		Fair		Poor	
		Low content of organic matter	0.50	Slope	0.50	Rock fragments	0.00
		Too acid	0.95			Slope	0.00
		Droughty	0.98			Hard to reclaim	0.24
		Water erosion	0.99				
21:							
Legault	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Stone content	0.78	Depth to bedrock	0.00
		Low content of organic matter	0.12			Too sandy	0.16
		Too sandy	0.16			Slope	0.84
		Stone content	0.46				
		Too acid	0.84				
22:							
Legault	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.08	Rock fragments	0.00
		Low content of organic matter	0.12	Stone content	0.78	Depth to bedrock	0.00
		Too sandy	0.16			Too sandy	0.16
		Stone content	0.46				
		Too acid	0.84				

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
23:							
Legault----------	70	Poor		Poor		Poor	
		Too sandy	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Too sandy	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Depth to bedrock	0.00
		Too acid	0.84				
Rock outcrop--------	20	Not rated		Not rated		Not rated	
24:							
Lininger----------	45	Fair		Poor		Fair	
		Low content of organic matter	0.50	Depth to bedrock	0.00	Depth to bedrock	0.99
		Droughty	0.92				
		Depth to bedrock	0.99				
Breece----------	40	Fair		Good		Poor	
		Low content of organic matter	0.88			Rock fragments	0.00
		Too acid	0.95			Hard to reclaim	0.68
25:							
Lininger----------	45	Fair		Poor		Fair	
		Low content of organic matter	0.50	Depth to bedrock	0.00	Slope	0.84
		Droughty	0.92			Depth to bedrock	0.99
		Depth to bedrock	0.99				
Resort----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Stone content	0.01	Rock fragments	0.00
		Stone content	0.00	Cobble content	0.22	Too sandy	0.00
		Too sandy	0.00			Slope	0.96
		Low content of organic matter	0.12				
		Cobble content	0.59				
		Too acid	0.84				
26:							
Lininger----------	50	Fair		Poor		Poor	
		Low content of organic matter	0.50	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.92	Slope	0.08	Depth to bedrock	0.99
		Depth to bedrock	0.99				
Trag----------	35	Fair		Fair		Poor	
		Low content of organic matter	0.88	Slope	0.08	Slope	0.00
		Too clayey	0.99			Rock fragments	0.24
						Hard to reclaim	0.68
						Too clayey	0.72
27:							
Lone Rock----------	55	Poor		Good		Poor	
		Droughty	0.00			Hard to reclaim	0.00
		Too sandy	0.00			Rock fragments	0.00
		Low content of organic matter	0.88			Too sandy	0.00

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
27:							
Breece	35	Fair		Good		Poor	
		Low content of organic matter	0.88			Rock fragments	0.00
		Too acid	0.95			Hard to reclaim	0.68
28:							
Lone Rock	55	Poor		Good		Poor	
		Droughty	0.00			Hard to reclaim	0.00
		Too sandy	0.00			Rock fragments	0.00
		Low content of organic matter	0.88			Too sandy	0.00
						Slope	0.37
Breece	35	Fair		Good		Poor	
		Low content of organic matter	0.88			Rock fragments	0.00
		Too acid	0.95			Hard to reclaim	0.68
						Slope	0.96
30:							
Mammoth	40	Fair		Fair		Poor	
		Too sandy	0.04	Slope	0.12	Slope	0.00
		Droughty	0.20	Stone content	0.68	Hard to reclaim	0.00
		Stone content	0.30			Rock fragments	0.00
		Too acid	0.39			Too sandy	0.04
		Low content of organic matter	0.88			Too acid	0.92
Ohman	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Stone content	0.00	Stone content	0.05	Rock fragments	0.00
		Low content of organic matter	0.12	Slope	0.08	Depth to bedrock	0.90
		Too acid	0.68				
		Depth to bedrock	0.90				
Bendemeere	20	Fair		Fair		Poor	
		Droughty	0.02	Slope	0.08	Slope	0.00
		Low content of organic matter	0.12	Stone content	0.32	Hard to reclaim	0.00
				Cobble content	0.85	Rock fragments	0.00
		Stone content	0.41				
		Too acid	0.74				
31:							
Mammoth	40	Fair		Poor		Poor	
		Too sandy	0.04	Slope	0.00	Slope	0.00
		Droughty	0.20	Stone content	0.68	Hard to reclaim	0.00
		Stone content	0.30			Rock fragments	0.00
		Too acid	0.39			Too sandy	0.04
		Low content of organic matter	0.88			Too acid	0.92
Ohman	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Stone content	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Stone content	0.05	Depth to bedrock	0.90
		Too acid	0.68				
		Depth to bedrock	0.90				

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
31:							
Bendemeere----------	15	Fair		Poor		Poor	
		Droughty	0.02	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Stone content	0.32	Hard to reclaim	0.00
		Stone content	0.41	Cobble content	0.75	Rock fragments	0.00
		Too acid	0.74				
32:							
Mammoth----------	50	Fair		Poor		Poor	
		Too sandy	0.04	Slope	0.00	Slope	0.00
		Droughty	0.20	Stone content	0.68	Hard to reclaim	0.00
		Stone content	0.30			Rock fragments	0.00
		Too acid	0.39			Too sandy	0.04
		Low content of organic matter	0.88			Too acid	0.92
Ohman----------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Stone content	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Stone content	0.05	Depth to bedrock	0.90
		Too acid	0.68				
		Depth to bedrock	0.90				
Rock outcrop--------	15	Not rated		Not rated		Not rated	
33:							
Ohman----------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.00	Rock fragments	0.00
		Stone content	0.16	Stone content	0.33	Depth to bedrock	0.90
		Too acid	0.68				
		Depth to bedrock	0.90				
Ivywild----------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.05	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Depth to bedrock	0.05
		Low content of organic matter	0.88			Too acid	0.88
34:							
Ohman----------	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.08	Rock fragments	0.00
		Stone content	0.16	Stone content	0.33	Depth to bedrock	0.90
		Too acid	0.68				
		Depth to bedrock	0.90				
Legault----------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.08	Rock fragments	0.00
		Low content of organic matter	0.12	Stone content	0.78	Depth to bedrock	0.00
		Too sandy	0.16			Too sandy	0.16
		Stone content	0.46				
		Too acid	0.84				

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
35:							
Ohman	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Low content of organic matter	0.12	Slope	0.00	Rock fragments	0.00
		Stone content	0.16	Stone content	0.33	Depth to bedrock	0.90
		Too acid	0.68				
		Depth to bedrock	0.90				
Legault	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Stone content	0.78	Depth to bedrock	0.00
		Too sandy	0.16			Too sandy	0.16
		Stone content	0.46			Too sandy	0.16
		Too acid	0.84				
36:							
Pettingell	50	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Droughty	0.04	Stone content	0.01	Hard to reclaim	0.00
		Low content of organic matter	0.12	Cobble content	0.21	Rock fragments	0.00
		Too acid	0.92				
		Cobble content	0.98				
Rogert	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
Rock outcrop	15	Not rated		Not rated		Not rated	
37:							
Raleigh	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Too acid	0.84			Slope	0.37
38:							
Raleigh	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.08	Rock fragments	0.00
		Too acid	0.84			Depth to bedrock	0.00
39:							
Raleigh	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Too acid	0.84			Depth to bedrock	0.00
40:							
Raleigh	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Too acid	0.84			Depth to bedrock	0.00
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
41:							
Redfeather----------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.12			Depth to bedrock	0.00
		Too acid	0.84				
Legault----------	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.00	Stone content	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.12			Too sandy	0.16
		Too sandy	0.16				
		Too acid	0.84				
42:							
Redfeather----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Slope	0.32	Depth to bedrock	0.00
		Low content of organic matter	0.12			Slope	0.00
		Too acid	0.84				
Legault----------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00	Stone content	0.00	Depth to bedrock	0.00
		Stone content	0.00	Slope	0.32	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.16
		Too sandy	0.16				
		Too acid	0.84				
Tolvar----------	20	Fair		Fair		Poor	
		Low content of organic matter	0.12	Stone content	0.18	Hard to reclaim	0.00
		Stone content	0.13	Slope	0.32	Rock fragments	0.00
		Too acid	0.84	Cobble content	0.95	Slope	0.00
		Droughty	0.89				
43:							
Resort----------	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Stone content	0.48	Rock fragments	0.00
		Too sandy	0.00	Cobble content	0.68	Too sandy	0.00
		Stone content	0.09				
		Low content of organic matter	0.12				
		Too acid	0.84				
		Cobble content	0.94				

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
44:							
Resort----------	80	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00	Stone content	0.48	Rock fragments	0.00
		Too sandy	0.00	Slope	0.50	Slope	0.00
		Stone content	0.09	Cobble content	0.68	Too sandy	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
		Cobble content	0.94				
45:							
Resort----------	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.08	Depth to bedrock	0.00
		Too sandy	0.00	Stone content	0.48	Rock fragments	0.00
		Stone content	0.09	Cobble content	0.68	Too sandy	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
		Cobble content	0.94				
46:							
Resort----------	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Too sandy	0.00	Cobble content	0.33	Too sandy	0.00
		Low content of organic matter	0.12				
		Cobble content	0.72				
		Too acid	0.84				
47:							
Resort----------	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.01	Rock fragments	0.00
		Too sandy	0.00	Cobble content	0.22	Too sandy	0.00
		Low content of organic matter	0.12				
		Cobble content	0.59				
		Too acid	0.84				
Cathedral----------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.97	Cobble content	0.99	Depth to bedrock	0.00
48:							
Resort----------	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.01	Rock fragments	0.00
		Too sandy	0.00	Cobble content	0.22	Too sandy	0.00
		Low content of organic matter	0.12				
		Cobble content	0.59				
		Too acid	0.84				

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
48:							
Cathedral----------	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.97	Cobble content	0.99	Depth to bedrock	0.00
Rubble land---------	20	Not rated		Not rated		Not rated	
49:							
Rock outcrop--------	85	Not rated		Not rated		Not rated	
50:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Cathedral----------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.99			Depth to bedrock	0.00
Resort----------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.01	Rock fragments	0.00
		Too sandy	0.00	Cobble content	0.22	Too sandy	0.00
		Low content of organic matter	0.12				
		Cobble content	0.59				
		Too acid	0.84				
51:							
Rock outcrop--------	45	Not rated		Not rated		Not rated	
Resort----------	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Depth to bedrock	0.00
		Stone content	0.00	Stone content	0.01	Rock fragments	0.00
		Too sandy	0.00	Cobble content	0.22	Too sandy	0.00
		Low content of organic matter	0.12				
		Cobble content	0.59				
		Too acid	0.84				
52:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.99			Depth to bedrock	0.00
53:							
Rock outcrop--------	40	Not rated		Not rated		Not rated	
Rubble land---------	20	Not rated		Not rated		Not rated	
Cathedral----------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.99			Depth to bedrock	0.00

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
54:							
Rock outcrop--------	60	Not rated		Not rated		Not rated	
Tolland----------	30	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Too sandy	0.04	Cobble content	0.98	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Too sandy	0.04
		Too acid	0.46			Too acid	0.95
55:							
Rogert----------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.00	Stone content	0.00	Depth to bedrock	0.00
		Low content of organic matter	0.88	Cobble content	0.67		
		Cobble content	0.96				
Herbman----------	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.00	Rock fragments	0.00
		Stone content	0.88	Stone content	0.99	Depth to bedrock	0.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	
56:							
Tahana----------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too sandy	0.02	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.10			Too sandy	0.02
		Too acid	0.54			Depth to bedrock	0.10
Legault----------	30	Poor		Poor		Poor	
		Too sandy	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.00	Too sandy	0.00
		Depth to bedrock	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Depth to bedrock	0.00
		Too acid	0.84				
Rock outcrop--------	25	Not rated		Not rated		Not rated	
57:							
Tolland----------	45	Poor		Poor		Poor	
		Droughty	0.00	Slope	0.00	Slope	0.00
		Too sandy	0.04	Cobble content	0.98	Hard to reclaim	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Too sandy	0.04
		Too acid	0.46			Too acid	0.95
Rock outcrop--------	25	Not rated		Not rated		Not rated	
58:							
Tonahutu----------	50	Fair		Poor		Poor	
		Droughty	0.02	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12	Depth to bedrock	0.39	Hard to reclaim	0.00
				Stone content	0.58	Rock fragments	0.00
		Stone content	0.46			Too sandy	0.50
		Too acid	0.50			Too acid	0.98
		Too sandy	0.50				

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
58:							
Ohman	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Stone content	0.00	Slope	0.00	Rock fragments	0.00
		Low content of organic matter	0.12	Stone content	0.05	Depth to bedrock	0.90
		Too acid	0.68				
		Depth to bedrock	0.90				
59:							
Trag	70	Fair		Good		Fair	
		Low content of organic matter	0.88			Rock fragments	0.24
		Too clayey	0.99			Hard to reclaim	0.68
						Too clayey	0.72
						Slope	0.96
60:							
Troutdale	40	Fair		Poor		Fair	
		Droughty	0.10	Depth to bedrock	0.00	Rock fragments	0.28
		Depth to bedrock	0.46			Depth to bedrock	0.46
		Low content of organic matter	0.88			Slope	0.96
Rogert	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.00			Depth to bedrock	0.00
		Low content of organic matter	0.88			Slope	0.96
Kittredge	20	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
61:							
Troutdale	45	Fair		Poor		Fair	
		Droughty	0.01	Depth to bedrock	0.00	Rock fragments	0.28
		Depth to bedrock	0.46			Depth to bedrock	0.46
		Low content of organic matter	0.50			Slope	0.96
Sprucedale	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
		Depth to bedrock	0.00			Rock fragments	0.28
						Slope	0.96
62:							
Typic Cryaquents	50	Poor		Not rated		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.00
		Too acid	0.84			Depth to saturated zone	0.00
		Droughty	0.84				
		Water erosion	0.90				
Cumulic Cryaquolls	45	Poor		Not rated		Poor	
		Too sandy	0.00			Too sandy	0.00
		Droughty	0.71			Hard to reclaim	0.00
		Stone content	0.72			Rock fragments	0.00
						Depth to saturated zone	0.00

Table 18.--Construction materials (B)--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
63:							
Urban land----------	55	Not rated		Not rated		Not rated	
Breece----------	35	Fair		Good		Poor	
		Low content of organic matter	0.88			Rock fragments	0.00
						Hard to reclaim	0.68
		Too acid	0.95				
64:							
Water----------	95	Not rated		Not rated		Not rated	

Table 19.--Engineering index properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
1:												
Arents----------	0-24	Very cobbly loamy coarse sand	SM, SP-SM, GM, GW-GM, SW-SM, GP-GM	A-1-a, A-3, A-2-4, A-1-b	0-25	20-70	45-90	40-85	25-65	5-25	---	NP
	24-28	Gravelly sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	28-33	Extremely cobbly loamy sand	GW, GM, GP, SW, GW-GM, SP, SP-SM, SW-SM	A-1-a, A-1-b, A-3, A-2-4	0-30	30-85	20-80	15-75	10-55	0-20	---	NP
	33-60	Extremely cobbly loamy sand	SP-SM, SP, GP, GP-GM	A-1	0-30	30-85	20-80	15-75	10-50	0-10	---	NP
Dumps, mine-----	0-60	Fragmental material	GW	A-1	---	50-90	10-30	5-15	0-5	0	0-14	NP
2:												
Bendemeere------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-3	Very gravelly sandy loam	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	3-10	Gravelly coarse sandy loam	SM, SC-SM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	10-21	Very cobbly coarse sandy loam, sandy clay loam	SP-SM, SM, GP-GM, GM	A-1, A-2	0-25	20-70	45-90	40-85	20-55	10-30	20-25	NP-5
	21-30	Very gravelly loamy coarse sand, sandy clay loam, very gravelly loamy sand	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	15-40	0-15	20-25	NP-5
	30-42	Very gravelly loamy sand, sandy clay loam	GW-GM, GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	42-50	Gravelly loamy sand, sandy clay loam	SM, SP-SM	A-1, A-2	0-10	0-10	60-80	55-75	30-55	10-20	---	NP
	50-62	Very gravelly coarse sandy loam	GC-GM, GM, GW, GW-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	15-30	0-15	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
2:												
Tolland---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Very gravelly sandy loam	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	5-11	Very gravelly coarse sandy loam	GC-GM, GM, GW-GM	A-1	0-5	10-20	45-55	40-50	20-30	5-15	20-25	NP-5
	11-50	Extremely gravelly loamy coarse sand	GW	A-1	0-10	5-30	15-30	10-25	5-15	0-5	20-25	NP-5
	50-69	Extremely cobbly loamy coarse sand	GM, GW-GM, SM, SW-SM	A-1	0-5	35-45	30-80	25-75	15-50	10-15	---	NP
3:												
Breece----------	0-7	Gravelly sandy loam	GC, SC, SC-SM, GC-GM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	7-20	Gravelly sandy loam	SC, GC-GM, GC, SC-SM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	20-42	Gravelly coarse sandy loam	SC-SM, SM, GC-GM, GM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	42-72	Gravelly sandy loam	SC-SM, SM, GC-GM, GM	A-1-b, A-2-4	0-10	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
4:												
Cathedral-------	0-3	Very cobbly sandy loam	SC-SM, SC, GC-GM, GC	A-2, A-1	0-20	20-60	45-90	40-85	25-60	15-35	25-30	5-10
	3-6	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	6-11	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
5:												
Cathedral-------	0-3	Very cobbly coarse sandy loam	SC-SM, SM	A-1-b, A-2-4, A-1-a	0-25	20-70	70-90	65-85	30-55	15-30	20-25	NP-5
	3-6	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	6-11	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
6:												
Cumulic Cryaquolls-----	0-6	Loam	CL, CL-ML	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	6-14	Loam, sandy loam	SM, SC-SM, SC, ML, CL, CL-ML	A-2-4, A-4	0-5	0-10	85-100	80-100	60-95	30-75	25-30	NP-10
	14-21	Sandy loam, loam	SM, CL, CL-ML, SC-SM, SC, ML	A-2-4, A-4	0-5	0-10	85-100	80-100	60-95	30-75	20-30	NP-10
	21-64	Very gravelly sand	SW, SW-SM, GW-GM, GW	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	0-10	---	NP
7:												
Gateview--------	0-7	Gravelly sandy loam	SC, SC-SM, GC-GM, GC	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	7-18	Very cobbly sandy loam	GM, GC-GM	A-1	0-25	0-30	35-55	30-50	20-35	10-20	20-25	NP-5
	18-42	Very cobbly sandy loam	SM, SC-SM, GM, GC-GM	A-1, A-2	5-40	10-30	55-90	50-85	30-60	15-35	20-25	NP-5
	42-62	Very cobbly loamy sand	GP-GM, GP, SP-SM, SP	A-1, A-2, A-3	5-40	0-40	20-80	15-75	10-55	0-20	---	NP

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
7:												
Kittredge-------	0-10	Sandy loam	SC, SC-SM	A-2, A-4	0	0	100	100	60-70	30-40	25-30	5-10
	10-13	Sandy clay loam, clay loam	CL-ML, SC-SM, SC, CL	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	13-22	Sandy clay loam, clay loam	SC, CL-ML, CL, SC-SM	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	22-28	Sandy clay loam, clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	28-38	Gravelly sandy clay loam	SC-SM, SC, GC-GM, GC	A-1, A-2, A-4	0-10	0-15	60-80	55-75	45-70	20-40	25-30	5-10
	38-53	Gravelly sandy clay loam, gravelly clay loam	SC, CL, GC	A-6	0-10	0-15	60-80	55-75	50-75	40-60	30-35	10-15
	53-72	Loamy sand	SM	A-1, A-2	0-20	0-20	85-100	80-100	40-75	15-30	---	NP
8:												
Grimstone-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-4	Sandy loam	SC-SM, SM	A-2, A-4	0-10	0	85-100	80-100	50-70	25-40	20-25	NP-5
	4-19	Gravelly sandy loam, gravelly loamy sand	SC-SM, SM, GC-GM	A-1, A-2	0	0-10	60-80	55-75	30-55	15-30	20-25	NP-5
	19-25	Loam	CL, CL-ML	A-4	0-10	0-10	85-100	80-100	70-95	50-75	25-30	5-10
	25-33	Loam	CL, CL-ML	A-4	0-10	0-10	85-100	80-100	70-95	50-75	25-30	5-10
	33-36	Weathered bedrock			---	---	---	---	---	---	---	---
Bullwark family---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-4	Gravelly sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	0-5	0-10	60-80	55-75	35-50	20-30	25-30	5-10
	4-22	Gravelly sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	0-5	0-10	60-80	55-75	35-50	20-30	25-30	5-10
	22-40	Very gravelly sandy loam, sandy clay loam	GC, GC-GM	A-1, A-2	0-10	0-25	35-55	30-50	15-35	5-20	25-30	5-10
	40-63	Very gravelly loamy sand	GW-GM, GC-GM, GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
9:												
Grimstone-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-4	Sandy loam	SM, SC-SM	A-2, A-4	0-10	0	85-100	80-100	50-70	25-40	20-25	NP-5
	4-19	Gravelly sandy loam, gravelly loamy sand	SC-SM, GC-GM, SM	A-1, A-2	0	0-10	60-80	55-75	30-55	15-30	20-25	NP-5
	19-25	Loam	CL, CL-ML	A-4	0-10	0-10	85-100	80-100	70-95	50-75	25-30	5-10
	25-33	Loam	CL-ML, CL	A-4	0-10	0-10	85-100	80-100	70-95	50-75	25-30	5-10
	33-36	Weathered bedrock			---	---	---	---	---	---	---	---
Bullwark family---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-4	Gravelly sandy loam	SC-SM, GC-GM, GC, SC	A-1, A-2	0-5	0-10	60-80	55-75	35-50	20-30	25-30	5-10
	4-22	Gravelly sandy loam	SC, SC-SM, GC, GC-GM	A-1, A-2	0-5	0-10	60-80	55-75	35-50	20-30	25-30	5-10
	22-40	Very gravelly sandy loam, sandy clay loam	GC, GC-GM	A-1, A-2	0-10	0-25	35-55	30-50	15-35	5-20	25-30	5-10
	40-63	Very gravelly loamy sand	GW-GM, GM, GC-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	20-25	NP-5
10:												
Grimstone-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-2	Sandy loam	SM, SC-SM	A-2, A-4	0-10	0	85-100	80-100	50-70	25-40	20-25	NP-5
	2-11	Gravelly sandy loam, gravelly loamy sand	SC-SM, SM, GC-GM	A-1, A-2	0	0-10	60-80	55-75	30-55	15-30	20-25	NP-5
	11-16	Gravelly sandy loam, gravelly loamy sand	SC-SM, SM, GC-GM	A-1, A-2	0	0-10	60-80	55-75	30-55	15-30	20-25	NP-5
	16-23	Gravelly sandy clay loam	GC, SC, SC-SM	A-2, A-4, A-6	0	0-10	60-80	55-75	45-75	20-40	25-35	5-15
	23-36	Gravelly sandy loam	SM, SC-SM, GM	A-1, A-2	0	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	36-40	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
10:												
Hiwan----------	0-1	Stony loamy sand	SM, SP-SM, SW-SM	A-1-b, A-2-4	10-45	0-30	75-90	70-85	35-65	10-25	---	NP
	1-15	Very gravelly loamy sand, very gravelly sand	GW-GM, GM	A-1	0	0-10	35-55	30-50	20-40	0-15	---	NP
	15-19	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	0-14	---
11:												
Grimstone-------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-2	Sandy loam	SC-SM, SM	A-2, A-4	0-10	0	85-100	80-100	50-70	25-40	20-25	NP-5
	2-11	Gravelly sandy loam, gravelly loamy sand	GC-GM, SM, SC-SM	A-1, A-2	0	0-10	60-80	55-75	30-55	15-30	20-25	NP-5
	11-16	Gravelly loamy sand	SP-SM, SM, SC-SM	A-1, A-2	0-5	0-10	60-80	55-75	30-55	10-20	20-25	NP-5
	16-23	Gravelly sandy clay loam	GC, SC, SC-SM	A-2, A-4, A-6	0	0-10	60-80	55-75	45-75	20-40	25-35	5-15
	23-36	Gravelly sandy loam	SM, SC-SM, GM	A-1, A-2	0	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	36-40	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
11:												
Peeler----------	0-4	Stony sandy loam	SC-SM, SM	A-2	15-45	0-15	75-90	70-85	45-60	25-35	20-25	NP-5
	4-10	Gravelly sandy loam, gravelly loamy sand	SM, SP-SM, SW-SM	A-1-b, A-2-4	0-10	0-15	60-80	55-75	30-55	10-20	20-25	NP-5
	10-15	Gravelly sandy loam, gravelly loamy sand	SC-SM, SM, SP-SM	A-1-b, A-2-4	0-10	0-15	60-80	55-75	30-55	10-30	20-25	NP-5
	15-29	Gravelly sandy clay loam, gravelly sandy loam, gravelly clay loam	SC, CL, CL-ML, SC-SM	A-6, A-2, A-4	0-5	0-10	65-85	60-80	40-75	30-60	25-35	5-15
	29-35	Gravelly sandy clay loam, gravelly sandy loam, gravelly clay loam	SC-SM, SC, CL, CL-ML	A-6, A-2, A-4	0-5	0-10	65-85	60-80	40-75	30-60	25-35	5-15
	35-60	Gravelly sandy clay loam, gravelly sandy loam, gravelly clay loam	CL, SC-SM, CL-ML, SC	A-2, A-4, A-6	0-5	0-10	65-85	60-80	40-75	27-60	25-35	5-15
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	0-14	---
12:												
Herbman---------	0-10	Gravelly sandy loam	GM, GC-GM	A-1	0-25	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	10-17	Very gravelly loamy sand	GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	17-24	Weathered bedrock			---	---	---	---	---	---	---	---
13:												
Herbman---------	0-10	Gravelly sandy loam	GM, GC-GM	A-1	0-25	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	10-13	Very gravelly loamy sand	GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	13-17	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
14:												
Herbman---------	0-10	Gravelly sandy loam	GM, GC-GM	A-1	0-25	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
	10-13	Very gravelly loamy sand	GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	13-17	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
15:												
Hiwan----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-3	Extremely cobbly sandy loam	SC-SM, SM, GM, GC-GM	A-1	10-15	50-60	55-65	50-60	30-40	15-20	20-25	NP-5
	3-13	Extremely cobbly loamy sand	GM, SM	A-1	0-10	50-60	55-65	50-60	30-40	10-15	---	NP
	13-17	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
15:												
Bendemeere------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-3	Very gravelly loamy sand	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	20-40	10-15	20-25	NP-5
	3-10	Gravelly coarse sandy loam	SC-SM, SM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	10-21	Very cobbly coarse sandy loam, sandy clay loam	GM, GP-GM, SM, SP-SM	A-1, A-2	0-25	20-70	45-90	40-85	20-55	10-30	20-25	NP-5
	21-30	Very gravelly loamy coarse sand, sandy clay loam, very gravelly loamy sand	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	15-40	0-15	20-25	NP-5
	30-42	Very gravelly loamy sand, sandy clay loam	GW-GM, GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	42-50	Gravelly loamy sand, sandy clay loam	SP-SM, SM	A-1, A-2	0-10	0-10	60-80	55-75	30-55	10-20	---	NP
	50-62	Very gravelly coarse sandy loam	GW, GM, GW-GM, GC-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	15-30	0-15	20-25	NP-5
16:												
Ivywild---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-8	Very gravelly loamy sand	GM, GW-GM, GC-GM	A-1-a, A-1-b	0-10	0-5	35-55	30-50	20-40	10-15	20-25	NP-5
	8-13	Very gravelly loamy sand	GM, GC-GM, GW-GM	A-1-a, A-1-b	0-10	0-5	35-55	30-50	20-40	10-15	20-25	NP-5
	13-24	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GW-GM, GW	A-1-a	0-20	0-5	15-30	10-25	5-20	0-10	20-25	NP-5
	24-31	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
16:												
Legault---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-5	Very gravelly sandy loam	GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	---	NP
	5-18	Very gravelly loamy sand	GM	A-1	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	18-22	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
17:												
Ivywild---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-8	Very gravelly loamy sand	GW-GM, GC-GM, GM	A-1-a, A-1-b	0-10	0-5	35-55	30-50	20-40	10-15	20-25	NP-5
	8-13	Very gravelly loamy sand	GW-GM, GM, GC-GM	A-1-a, A-1-b	0-10	0-5	35-55	30-50	20-40	10-15	20-25	NP-5
	13-24	Extremely gravelly coarse sandy loam, extremely gravelly sandy loam	GW, GW-GM	A-1-a	0-20	0-5	15-30	10-25	5-20	0-10	20-25	NP-5
	24-31	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
17:												
Mammoth---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-10	Very gravelly sandy loam	GC-GM, GC, GW-GC	A-1-a, A-1-b, A-2-4	0-25	0-25	35-55	30-50	20-40	10-20	20-25	5-10
	10-16	Gravelly loam, sandy clay loam	CL-ML, GC-GM, GC, SC, SC-SM, CL	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	5-10
	16-22	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GW-GM, GC-GM, GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	22-32	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GW-GM, GM, GC-GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	32-59	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GM, GC-GM, GW-GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	59-67	Stony loamy coarse sand	SC-SM, SP-SM, SM, SW-SM	A-1-b, A-2-4	0-45	0-30	75-90	70-85	30-60	10-35	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
17:												
Legault---------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-6	Very gravelly loamy sand	GM	A-1	0-5	0-5	35-55	30-50	20-40	10-15	---	NP
	6-19	Very gravelly loamy sand, very gravelly sand	GM	A-1	0-5	0-10	35-55	30-50	20-40	0-15	---	NP
	19-23	Weathered bedrock			---	---	---	---	---	---	---	---
18:												
Kataka----------	0-5	Very gravelly loam	GC, GC-GM	A-2	0-5	10-20	45-55	40-50	35-45	25-35	25-30	5-10
	5-10	Very gravelly sandy loam	GC-GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	20-35	10-20	25-30	5-10
	10-18	Very cobbly clay loam	CL, GC, SC	A-2-6, A-6	0-25	20-70	45-90	40-85	35-85	30-70	30-35	10-15
	18-31	Extremely stony clay loam	GC	A-6	35-45	35-40	55-65	50-60	45-55	35-45	30-35	10-15
	31-38	Weathered bedrock			---	---	---	---	---	---	---	---
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-30	10-40	60-90	55-85	35-60	15-35	25-30	5-10
	6-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP, SP-SM, GP, GP-GM	A-1, A-2, A-3	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
19:												
Kittredge-------	0-10	Sandy loam	SC, SC-SM	A-2, A-4	0	0	100	100	60-70	30-40	25-30	5-10
	10-13	Sandy clay loam, clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	13-22	Sandy clay loam, clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	22-28	Sandy clay loam, clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	28-38	Gravelly sandy clay loam	GC, GC-GM, SC, SC-SM	A-1, A-2, A-4	0-10	0-15	60-80	55-75	45-70	20-40	25-30	5-10
	38-53	Gravelly sandy clay loam, gravelly clay loam	GC, CL, SC	A-6	0-10	0-15	60-80	55-75	50-75	40-60	30-35	10-15
	53-72	Loamy sand	SM	A-1, A-2	0-20	0-20	85-100	80-100	40-75	15-30	---	NP
Guanella--------	0-6	Gravelly loam	CL-ML, CL	A-4	0-3	0-14	80-95	80-95	70-90	50-75	25-30	5-10
	6-18	Gravelly loam	GC, SC-SM, GC-GM, SC	A-4	0-5	0-15	60-80	55-75	50-70	35-55	25-30	5-10
	18-29	Loam	CL, CL-ML	A-4	0-5	0-10	85-100	80-100	70-95	50-75	25-30	5-10
	29-48	Gravelly loamy sand	SP-SM, SC-SM, SM	A-1, A-2	0-5	0-10	60-80	55-75	30-55	10-20	20-25	NP-5
	48-62	Cobbly loamy sand	SC-SM, SM, SP-SM	A-1, A-2	0-10	15-20	75-90	70-85	35-65	10-25	20-25	NP-5
20:												
Kittredge-------	0-10	Sandy loam	SC-SM, SC	A-2, A-4	0	0	100	100	60-70	30-40	25-30	5-10
	10-13	Sandy clay loam, clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	13-22	Sandy clay loam, clay loam	CL-ML, SC, SC-SM, CL	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	22-28	Sandy clay loam, clay loam	SC-SM, CL-ML, CL, SC	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	28-38	Gravelly sandy clay loam	GC, SC, SC-SM, GC-GM	A-2, A-4, A-1	0-10	0-15	60-80	55-75	45-70	20-40	25-30	5-10
	38-53	Gravelly sandy clay loam, gravelly clay loam	CL, GC, SC	A-6	0-10	0-15	60-80	55-75	50-75	40-60	30-35	10-15
	53-72	Loamy sand	SM	A-1, A-2	0-20	0-20	85-100	80-100	40-75	15-30	---	NP

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
20:												
Guanella--------	0-6	Gravelly loam	CL-ML, CL	A-4	0-3	0-5	83-100	80-100	70-95	50-75	20-30	5-10
	6-18	Gravelly loam	SC-SM, SC, GC-GM, GC	A-4	0-5	0-15	60-80	55-75	50-70	35-55	25-30	5-10
	18-29	Loam	CL, CL-ML	A-4	0-5	0-10	85-100	80-100	70-95	50-75	25-30	5-10
	29-48	Gravelly loamy sand	SP-SM, SC-SM, SM	A-1, A-2	0-5	0-10	60-80	55-75	30-55	10-20	20-25	NP-5
	48-62	Cobbly loamy sand	SP-SM, SM, SC-SM	A-1, A-2	0-10	15-20	75-90	70-85	35-65	10-25	20-25	NP-5
21:												
Legault---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-5	Very gravelly sandy loam	GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	---	NP
	5-18	Very gravelly loamy sand	GM	A-1	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	18-22	Weathered bedrock			---	---	---	---	---	---	---	---
22:												
Legault---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-5	Very gravelly sandy loam	GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	---	NP
	5-18	Very gravelly loamy sand	GM	A-1	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	18-22	Weathered bedrock			---	---	---	---	---	---	---	---
23:												
Legault---------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-6	Very gravelly loamy sand	GM	A-1	0-5	0-5	35-55	30-50	20-40	10-15	---	NP
	6-19	Very gravelly loamy sand, very gravelly sand	GM	A-1	0-5	0-10	35-55	30-50	20-40	0-15	---	NP
	19-23	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
23:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
24:												
Lininger--------	0-3	Gravelly sandy loam	GM, SC-SM, GC-GM, SM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	20-25	NP-5
	3-9	Gravelly sandy loam	SC-SM, GM, SM, GC-GM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	20-25	NP-5
	9-15	Sandy clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	15-22	Sandy clay loam	CL, SC-SM, SC, CL-ML	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	22-31	Sandy clay loam	SC-SM, SC, CL, CL-ML	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	31-39	Sandy clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---
Breece----------	0-7	Gravelly sandy loam	SC-SM, SC, GC, GC-GM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	7-20	Gravelly sandy loam	SC, SC-SM, GC, GC-GM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	20-42	Gravelly coarse sandy loam	SC-SM, GM, GC-GM, SM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	42-72	Gravelly sandy loam	SC-SM, GM, GC-GM, SM	A-1-b, A-2-4	0-10	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
25:												
Lininger--------	0-3	Gravelly sandy loam	SM, GC-GM, GM, SC-SM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	20-25	NP-5
	3-9	Gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	20-25	NP-5
	9-15	Sandy clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	15-22	Sandy clay loam	SC, CL-ML, CL, SC-SM	A-4, A-2	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	22-31	Sandy clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	31-39	Sandy clay loam	SC-SM, CL-ML, CL, SC	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
25:												
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	GC-GM, SC-SM, GC, SC	A-1, A-2	25-30	10-40	60-90	55-85	35-60	15-35	25-30	5-10
	6-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP-SM, SP, GP-GM, GP	A-1, A-2, A-3	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---
26:												
Lininger--------	0-3	Gravelly sandy loam	GM, GC-GM, SM, SC-SM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	20-25	NP-5
	3-9	Gravelly sandy loam	GC-GM, GM, SM, SC-SM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	20-25	NP-5
	9-15	Sandy clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	15-22	Sandy clay loam	SC, CL-ML, SC-SM, CL	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	22-31	Sandy clay loam	SC, CL-ML, CL, SC-SM	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	31-39	Sandy clay loam	SC-SM, SC, CL-ML, CL	A-2, A-4	0-5	0-5	85-100	80-100	65-90	30-55	25-30	5-10
	39-43	Weathered bedrock			---	---	---	---	---	---	---	---
Trag----------	0-4	Gravelly sandy loam	SC-SM, GC, SC, GC-GM	A-1, A-2	0-5	0-10	60-80	55-75	35-50	20-30	25-30	5-10
	4-14	Gravelly sandy clay loam	GC, SC, GC-GM, SC-SM	A-1, A-2, A-4	0-5	0-10	60-80	55-75	45-70	20-40	25-30	5-10
	14-21	Cobbly sandy clay loam	SC, SC-SM	A-4	0-5	15-20	75-90	70-85	55-75	35-45	25-30	5-10
	21-27	Cobbly sandy clay loam	SC, SC-SM	A-4	0-5	15-20	75-90	70-85	55-75	35-45	25-30	5-10
	27-45	Cobbly clay loam	CL	A-6	0-5	15-20	75-90	70-85	65-85	50-70	30-35	10-15
	45-60	Gravelly sandy clay loam	SC-SM, GC, GC-GM, SC	A-1, A-2, A-4	0-5	0-10	60-80	55-75	45-70	20-40	25-30	5-10

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
27:												
Lone Rock-------	0-9	Gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	20-25	NP-5
	9-13	Very gravelly loamy sand, very gravelly sandy loam	GC-GM, GM	A-1	0-5	10-20	35-45	30-45	20-40	10-20	20-25	NP-5
	13-28	Very gravelly loamy sand, very gravelly sandy loam	GC-GM, GM	A-1	0-5	10-20	35-45	30-45	20-40	10-20	20-25	NP-5
	28-60	Extremely gravelly loamy sand, extremely gravelly sand	GW	A-1	0-5	10-25	15-30	10-25	5-20	0-5	20-25	NP-5
Breece----------	0-7	Gravelly sandy loam	GC, GC-GM, SC-SM, SC	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	7-20	Gravelly sandy loam	GC-GM, SC, SC-SM, GC	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	20-42	Gravelly coarse sandy loam	SC-SM, GM, SM, GC-GM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	42-72	Gravelly sandy loam	SC-SM, SM, GC-GM, GM	A-1-b, A-2-4	0-10	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
28:												
Lone Rock-------	0-9	Gravelly sandy loam	SM, SC-SM, GM, GC-GM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	20-25	NP-5
	9-13	Very gravelly loamy sand, very gravelly sandy loam	GM, GC-GM	A-1	0-5	10-20	35-45	30-45	20-40	10-20	20-25	NP-5
	13-28	Very gravelly loamy sand, very gravelly sandy loam	GC-GM, GM	A-1	0-5	10-20	35-45	30-45	20-40	10-20	20-25	NP-5
	28-60	Extremely gravelly loamy sand, extremely gravelly sand	GW	A-1	0-5	10-25	15-30	10-25	5-20	0-5	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
29:												
Breece----------	0-7	Gravelly sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	7-20	Gravelly sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	20-42	Gravelly coarse sandy loam	GC-GM, SC-SM, SM, GM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	42-72	Gravelly sandy loam	GM, SC-SM, SM, GC-GM	A-1-b, A-2-4	0-10	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
30:												
Mammoth---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-10	Very gravelly sandy loam	GC-GM, GC, GW-GC	A-1-a, A-1-b, A-2-4	0-25	0-25	35-55	30-50	20-40	10-20	20-25	5-10
	10-16	Sandy clay loam, gravelly loam	GC-GM, GC, SC, SC-SM, CL, CL-ML	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	5-10
	16-22	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GC-GM, GM, GW-GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	22-32	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GC-GM, GM, GW-GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	32-59	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GC-GM, GM, GW-GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	59-67	Stony loamy coarse sand	SM, SP-SM, SW-SM, SC-SM	A-1-b, A-2-4	0-45	0-30	75-90	70-85	30-60	10-35	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
30:												
Ohman----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Very stony sandy loam	GM, SC-SM, SM, GC-GM	A-1, A-2	25-40	10-25	55-90	50-85	30-60	15-35	20-25	NP-5
	5-13	Very gravelly sandy loam	GW-GM, GM, GC-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	13-21	Very gravelly sandy loam	GM, GC-GM, GW-GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	21-35	Extremely gravelly sandy loam	GC-GM	A-1-a	0-30	0-35	15-30	10-25	5-20	0-10	20-25	5-10
	35-39	Weathered bedrock			---	---	---	---	---	---	---	---
Bendemeere------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-3	Very gravelly sandy loam	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	3-10	Gravelly coarse sandy loam	SM, SC-SM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	10-21	Very cobbly coarse sandy loam, sandy clay loam	GM, GP-GM, SM, SP-SM	A-1, A-2	0-25	20-70	45-90	40-85	20-55	10-30	20-25	NP-5
	21-30	Very gravelly loamy coarse sand, sandy clay loam, very gravelly loamy sand	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	15-40	0-15	20-25	NP-5
	30-42	Very gravelly loamy sand, sandy clay loam	GW-GM, GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	42-50	Gravelly loamy sand, sandy clay loam	SM, SP-SM	A-1, A-2	0-10	0-10	60-80	55-75	30-55	10-20	---	NP
	50-62	Very gravelly coarse sandy loam	GC-GM, GW, GW-GM, GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	15-30	0-15	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
31:												
Mammoth---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-10	Very gravelly sandy loam	GW-GC, GC, GC-GM	A-2-4, A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-20	20-25	5-10
	10-16	Sandy clay loam, gravelly loam	SC, GC-GM, GC, SC-SM, CL, CL-ML	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	5-10
	16-22	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GC-GM, GW-GM, GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	22-32	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GC-GM, GW-GM, GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	32-59	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GW-GM, GC-GM, GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	59-67	Stony loamy coarse sand	SM, SP-SM, SW-SM, SC-SM	A-1-b, A-2-4	0-45	0-30	75-90	70-85	30-60	10-35	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
31:												
Ohman----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Very stony sandy loam	GC-GM, GM, SM, SC-SM	A-1, A-2	25-40	10-25	55-90	50-85	30-60	15-35	20-25	NP-5
	5-13	Very gravelly sandy loam	GC-GM, GW-GM, GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	13-21	Very gravelly sandy loam	GC-GM, GW-GM, GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	21-35	Extremely gravelly sandy loam	GC-GM	A-1-a	0-30	0-35	15-30	10-25	5-20	0-10	20-25	5-10
	35-39	Weathered bedrock			---	---	---	---	---	---	---	---
Bendemeere------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-3	Very cobbly sandy loam	SM, SC-SM, GM, GC-GM	A-2, A-1	0-25	20-70	45-90	40-85	25-60	15-35	20-25	NP-5
	3-10	Gravelly coarse sandy loam	SM, SC-SM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	10-21	Very cobbly coarse sandy loam, sandy clay loam	SP-SM, SM, GM, GP-GM	A-1, A-2	0-25	20-70	45-90	40-85	20-55	10-30	20-25	NP-5
	21-30	Very gravelly loamy coarse sand, sandy clay loam, very gravelly loamy sand	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	15-40	0-15	20-25	NP-5
	30-42	Very gravelly loamy sand, sandy clay loam	GW-GM, GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	42-50	Gravelly loamy sand, sandy clay loam	SP-SM, SM	A-1, A-2	0-10	0-10	60-80	55-75	30-55	10-20	---	NP
	50-62	Very gravelly coarse sandy loam	GC-GM, GW-GM, GM, GW	A-1-a, A-1-b	0-25	0-25	35-55	30-50	15-30	0-15	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
32:												
Mammoth---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-10	Very gravelly sandy loam	GW-GC, GC, GC-GM	A-1-a, A-1-b, A-2-4	0-25	0-25	35-55	30-50	20-40	10-20	20-25	5-10
	10-16	Sandy clay loam, gravelly loam	CL-ML, CL, SC-SM, SC, GC, GC-GM	A-4	0-10	0-15	60-80	55-75	50-70	35-55	20-25	5-10
	16-22	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GW-GM, GM, GC-GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	22-32	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GM, GW-GM, GC-GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	32-59	Very gravelly sandy clay loam, very gravelly loamy sand, very gravelly sandy loam, sandy clay loam	GW-GM, GC-GM, GM	A-1-a, A-1-b	0-25	0-25	35-50	30-50	20-40	10-20	20-25	NP-5
	59-67	Stony loamy coarse sand	SW-SM, SC-SM, SP-SM, SM	A-1-b, A-2-4	0-45	0-30	75-90	70-85	30-60	10-35	20-25	NP-5

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
32:												
Ohman----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Very stony sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2	25-40	10-25	55-90	50-85	30-60	15-35	20-25	NP-5
	5-13	Very gravelly sandy loam	GW-GM, GM, GC-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	13-21	Very gravelly sandy loam	GW-GM, GC-GM, GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	21-35	Extremely gravelly sandy loam	GC-GM	A-1-a	0-30	0-35	15-30	10-25	5-20	0-10	20-25	5-10
	35-39	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
33:												
Ohman----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Very gravelly sandy loam	GM, GC-GM	A-1	0-5	0-10	35-55	30-50	20-35	10-20	20-25	NP-5
	5-13	Very gravelly sandy loam	GW-GM, GC-GM, GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	13-21	Very gravelly sandy loam	GM, GW-GM, GC-GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	21-35	Extremely gravelly sandy loam	GC-GM	A-1-a	0-30	0-35	15-30	10-25	5-20	0-10	20-25	5-10
	35-39	Weathered bedrock			---	---	---	---	---	---	---	---
Ivywild---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-3	Very gravelly sandy loam	GC-GM, GM, GW-GM	A-1-a, A-1-b	0-10	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	3-11	Very gravelly sandy loam	GC-GM, GM, GW-GM	A-1-a, A-1-b	0-5	0-10	35-55	30-50	15-35	0-20	20-25	NP-5
	11-23	Very gravelly sandy loam	GC-GM, GM, GW-GM	A-1-a, A-1-b	0-5	0-10	35-55	30-50	15-35	0-20	20-25	NP-5
	23-27	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
34:												
Ohman----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Very gravelly sandy loam	GM, GC-GM	A-1	0-5	0-10	35-55	30-50	20-35	10-20	20-25	NP-5
	5-13	Very gravelly sandy loam	GC-GM, GM, GW-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	13-21	Very gravelly sandy loam	GM, GW-GM, GC-GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	21-35	Extremely gravelly sandy loam	GC-GM	A-1-a	0-30	0-35	15-30	10-25	5-20	0-10	20-25	5-10
	35-39	Weathered bedrock			---	---	---	---	---	---	---	---
Legault---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-5	Very gravelly sandy loam	GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	---	NP
	5-18	Very gravelly loamy sand	GM	A-1	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	18-22	Weathered bedrock			---	---	---	---	---	---	---	---
35:												
Ohman----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Very gravelly sandy loam	GC-GM, GM	A-1	0-5	0-10	35-55	30-50	20-35	10-20	20-25	NP-5
	5-13	Very gravelly sandy loam	GC-GM, GM, GW-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	13-21	Very gravelly sandy loam	GM, GW-GM, GC-GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	21-35	Extremely gravelly sandy loam	GC-GM	A-1-a	0-30	0-35	15-30	10-25	5-20	0-10	20-25	5-10
	35-39	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
35:												
Legault---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-5	Very gravelly sandy loam	GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	---	NP
	5-18	Very gravelly loamy sand	GM	A-1	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	18-22	Weathered bedrock			---	---	---	---	---	---	---	---
36:												
Pettingell------	0-4	Gravelly sandy loam	SC-SM, GC, GC-GM, SC	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	4-11	Very gravelly loam	GC-GM, GC	A-1, A-2, A-4	0-25	0-25	35-55	30-50	25-50	20-40	25-30	5-10
	11-18	Very gravelly sandy loam	GM, GC-GM	A-1	0-5	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	18-37	Very cobbly coarse sandy loam	GW-GM, SM, SW-SM, SC-SM, GC-GM, GP-GM, GM	A-1-b, A-2-4, A-1-a	0-25	20-70	45-90	40-85	20-55	10-30	20-25	NP-5
	37-60	Extremely stony sandy loam	SM, SC-SM, GM, GC-GM	A-1, A-2	30-45	20-30	55-80	50-75	30-50	15-30	20-25	NP-5
Rogert----------	0-10	Very stony sandy loam	GC-GM, SC, SC-SM, GC	A-1, A-2	25-40	10-20	45-90	40-85	25-60	15-35	25-30	5-10
	10-18	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	0-10	35-55	30-50	20-35	10-20	25-30	5-10
	18-22	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
37:												
Raleigh---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very gravelly sandy loam	GC-GM, GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	6-15	Very gravelly sandy loam	GC-GM, GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
38:												
Raleigh---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very gravelly sandy loam	GM, GC-GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	6-15	Very gravelly sandy loam	GC-GM, GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
39:												
Raleigh---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very gravelly sandy loam	GC-GM, GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	6-15	Very gravelly sandy loam	GM, GC-GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
40:												
Raleigh---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very gravelly sandy loam	GC-GM, GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	6-15	Very gravelly sandy loam	GC-GM, GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	15-19	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
41:												
Redfeather------	0-3	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	3-4	Gravelly sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	25-30	5-10
	4-8	Gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2	0-5	5-10	60-80	55-75	35-50	20-30	20-25	NP-5
	8-12	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-25	0-25	35-55	30-50	20-35	10-20	25-30	5-10
	12-18	Very gravelly sandy clay loam	GC-GM, GC	A-1, A-2	0-5	5-15	35-55	30-50	25-45	10-30	25-30	5-10
	18-23	Bedrock			---	---	---	---	---	---	---	---
Legault---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-4	Extremely stony loamy sand	SP-SM, GP, SP, GP-GM	A-1, A-2, A-3	30-85	0-80	20-80	15-75	10-55	0-20	---	NP
	4-18	Very gravelly loamy sand	GM	A-1	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	18-22	Weathered bedrock			---	---	---	---	---	---	---	---
42:												
Redfeather------	0-3	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	3-4	Gravelly sandy loam	SC-SM, SC, GC-GM, GC	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	25-30	5-10
	4-8	Gravelly sandy loam	SM, SC-SM, GM, GC-GM	A-1, A-2	0-5	5-10	60-80	55-75	35-50	20-30	20-25	NP-5
	8-12	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-25	0-25	35-55	30-50	20-35	10-20	25-30	5-10
	12-18	Very gravelly sandy clay loam	GC, GC-GM	A-1, A-2	0-5	5-15	35-55	30-50	25-45	10-30	25-30	5-10
	18-23	Bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
42:												
Legault---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-4	Extremely stony loamy sand	GP-GM, SP, SP-SM, GP	A-1, A-2, A-3	30-85	0-80	20-80	15-75	10-55	0-20	---	NP
	4-18	Very gravelly loamy sand	GM	A-1	0-25	0-25	35-55	30-50	20-40	10-15	---	NP
	18-22	Weathered bedrock			---	---	---	---	---	---	---	---
Tolvar----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-4	Gravelly coarse sandy loam	SC-SM, SM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	4-14	Gravelly coarse sandy loam	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	15-30	0-15	20-25	NP-5
	14-19	Very gravelly sandy loam	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	19-26	Very cobbly sandy clay loam	GC, SC-SM, GC-GM	A-2-4, A-1-b, A-4	0-25	20-70	45-90	40-85	30-75	15-45	25-30	5-10
	26-48	Very gravelly sandy clay loam	GW-GC, GC-GM, GC	A-1-a, A-1-b, A-2-4	0-25	0-25	35-55	30-50	25-45	10-30	25-30	5-10
	48-70	Very gravelly sandy clay loam	GW-GC, GC-GM, GC	A-1-b, A-2-4, A-1-a	0-25	0-25	35-55	30-50	25-45	10-30	25-30	5-10
43:												
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-7	Very gravelly sandy loam	GM, GC-GM	A-1	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	7-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	GP, GP-GM, SP, SP-SM	A-2, A-3, A-1	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
44:												
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-7	Very gravelly sandy loam	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	7-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP-SM, SP, GP-GM, GP	A-2, A-3, A-1	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---
45:												
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-7	Very gravelly sandy loam	GC-GM, GM	A-1	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	7-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP-SM, SP, GP, GP-GM	A-1, A-2, A-3	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---
46:												
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-7	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-30	10-40	60-90	55-85	35-60	15-35	25-30	5-10
	7-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP-SM, GP-GM, GP, SP	A-1, A-2, A-3	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
47:												
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	SC-SM, GC, GC-GM, SC	A-1, A-2	25-30	10-40	60-90	55-85	35-60	15-35	25-30	5-10
	6-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP-SM, SP, GP-GM, GP	A-1, A-2, A-3	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---
Cathedral-------	0-3	Very cobbly sandy loam	GC-GM, SC, SC-SM, GC	A-2, A-1	0-20	20-60	45-90	40-85	25-60	15-35	25-30	5-10
	3-6	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	6-11	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
48:												
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	GC, GC-GM, SC, SC-SM	A-1, A-2	25-30	10-40	60-90	55-85	35-60	15-35	25-30	5-10
	6-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP-SM, GP-GM, GP, SP	A-1, A-2, A-3	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
48:												
Cathedral-------	0-3	Very cobbly sandy loam	SC-SM, GC, SC, GC-GM	A-2, A-1	0-20	20-60	45-90	40-85	25-60	15-35	25-30	5-10
	3-6	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	6-11	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
Rubble land-----	0-60	Fragmental material	GW	A-1	45-80	50-90	0-10	0-5	0-5	0	0-14	NP
49:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
50:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Cathedral-------	0-3	Very cobbly sandy loam	GC, GC-GM, SC, SC-SM	A-2, A-1	0-15	15-35	45-90	40-85	25-60	15-35	25-30	5-10
	3-6	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	6-11	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	SC-SM, SC, GC, GC-GM	A-1, A-2	25-30	10-40	60-90	55-85	35-60	15-35	25-30	5-10
	6-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP-SM, SP, GP-GM, GP	A-3, A-1, A-2	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
51:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Resort----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-6	Very stony sandy loam	GC, SC, GC-GM, SC-SM	A-1, A-2	25-30	10-40	60-90	55-85	35-60	15-35	25-30	5-10
	6-14	Extremely cobbly loamy sand, extremely gravelly loamy coarse sand	SP, GP, SP-SM, GP-GM	A-1, A-2, A-3	0-30	10-85	15-80	10-75	5-55	0-20	20-25	NP-5
	14-18	Weathered bedrock			---	---	---	---	---	---	---	---
52:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Rubble land-----	0-60	Fragmental material	GW	A-1	45-80	50-90	0-10	0-5	0-5	0	0-14	NP
Cathedral-------	0-3	Very cobbly sandy loam	SC-SM, SC, GC, GC-GM	A-2, A-1	0-15	15-35	45-90	40-85	25-60	15-35	25-30	5-10
	3-6	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	6-11	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
53:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Rubble land-----	0-60	Fragmental material	GW	A-1	45-80	50-90	0-10	0-5	0-5	0	0-14	NP

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
53:												
Cathedral-------	0-3	Very cobbly sandy loam	GC, SC, SC-SM, GC-GM	A-2, A-1	0-15	15-35	45-90	40-85	25-60	15-35	25-30	5-10
	3-6	Very gravelly sandy loam	GC-GM, GC	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	6-11	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-10	10-20	35-55	30-50	20-35	10-20	25-30	5-10
	11-15	Unweathered bedrock			---	---	---	---	---	---	---	---
54:												
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
Tolland---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Cobbly sandy loam	SC-SM, SM	A-2	0-5	15-30	75-90	70-85	45-60	25-35	20-25	NP-5
	5-11	Very gravelly coarse sandy loam	GC-GM, GM, GW-GM	A-1	0-5	10-20	45-55	40-50	20-30	5-15	20-25	NP-5
	11-50	Extremely gravelly loamy coarse sand	GW	A-1	0-10	5-30	15-30	10-25	5-15	0-5	20-25	NP-5
	50-69	Extremely cobbly loamy coarse sand	GM, SW-SM, GW-GM, SM	A-1	0-5	35-45	30-80	25-75	15-50	10-15	---	NP
55:												
Rogert----------	0-8	Extremely cobbly sandy loam	GC-GM, SC, GC, GW-GC, GP-GC, SW-SC, SC-SM	A-1-a, A-1-b, A-2-4	30-85	0-80	20-80	15-75	10-50	5-30	25-30	5-10
	8-16	Extremely gravelly sandy loam	GW, GW-GC	A-1-a, A-2-4	0-30	0-35	15-30	10-25	5-20	0-10	25-30	5-10
	16-20	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
55:												
Herbman---------	0-4	Stony sandy loam	SC-SM, SC	A-2-4, A-2	10-45	0-30	75-90	70-85	45-60	25-35	25-30	5-10
	4-13	Very gravelly sandy loam, very gravelly loam	GC-GM, GM, GW-GM	A-1, A-2, A-4	0-10	0-10	35-55	30-50	20-50	10-40	20-25	NP-5
	13-17	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
56:												
Tahana----------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-8	Gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2	0-5	0-15	60-80	55-75	35-50	20-30	20-25	NP-5
	8-20	Very gravelly loamy sand	GC-GM, GM	A-1	0-5	5-20	35-55	30-50	20-40	10-25	20-25	NP-5
	20-24	Extremely gravelly loamy sand	GW	A-1	0-5	15-25	15-30	10-25	5-20	0-5	20-25	NP-5
	24-28	Weathered bedrock			---	---	---	---	---	---	---	---
Legault---------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-6	Very gravelly loamy sand	GM	A-1	0-5	0-5	35-55	30-50	20-40	10-15	---	NP
	6-19	Very gravelly loamy sand, very gravelly sand	GM	A-1	0-5	0-10	35-55	30-50	20-40	0-15	---	NP
	19-23	Weathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
57:												
Tolland---------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-2	Moderately decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Cobbly sandy loam	SC-SM, SM	A-2	0-5	15-30	75-90	70-85	45-60	25-35	20-25	NP-5
	5-11	Very gravelly coarse sandy loam	GC-GM, GM, GW-GM	A-1	0-5	10-20	45-55	40-50	20-30	5-15	20-25	NP-5
	11-50	Extremely gravelly loamy coarse sand	GW	A-1	0-10	5-30	15-30	10-25	5-15	0-5	20-25	NP-5
	50-69	Extremely cobbly loamy coarse sand	GW-GM, SM, SW-SM, GM	A-1	0-5	35-45	30-80	25-75	15-50	10-15	---	NP
Rock outcrop----	0-60	Unweathered bedrock			---	---	---	---	---	---	---	---
58:												
Tonahutu--------	0-1	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	1-4	Coarse sandy loam	SM, SC-SM	A-1, A-2	0-20	0-20	85-100	80-100	45-65	20-30	20-25	NP-5
	4-16	Coarse sandy loam	SC-SM, SM	A-1, A-2	0-20	0-20	85-100	80-100	45-65	20-30	20-25	NP-5
	16-24	Loam, sandy loam, very gravelly coarse sandy loam	GW, GM, GW-GM, GC-GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	15-30	0-15	20-25	NP-5
	24-38	Very gravelly coarse sandy loam	GM, GW, GW-GM, GC-GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	15-30	0-15	20-25	NP-5
	38-48	Very gravelly loamy coarse sand	GW, GW-GM, SW-SM, SW	A-1-a, A-1-b	0-25	0-25	35-55	30-50	15-35	0-10	---	NP
	48-52	Weathered bedrock			---	---	---	---	---	---	---	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
58:												
Ohman----------	0-2	Slightly decomposed plant material	PT	A-8	0	0	100	100	---	---	---	---
	2-5	Very stony sandy loam	GC-GM, SM, GM, SC-SM	A-1, A-2	25-40	10-25	55-90	50-85	30-60	15-35	20-25	NP-5
	5-13	Very gravelly sandy loam	GW-GM, GM, GC-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	13-21	Very gravelly sandy loam	GW-GM, GM, GC-GM	A-1-b, A-1-a	0-25	0-25	35-55	30-50	20-35	10-20	20-25	NP-5
	21-35	Extremely gravelly sandy loam	GC-GM	A-1-a	0-30	0-35	15-30	10-25	5-20	0-10	20-25	5-10
	35-39	Weathered bedrock			---	---	---	---	---	---	---	---
59:												
Trag----------	0-4	Gravelly sandy loam	SC, SC-SM, GC-GM, GC	A-1, A-2	0-5	0-10	60-80	55-75	35-50	20-30	25-30	5-10
	4-14	Gravelly sandy clay loam	SC-SM, GC, SC, GC-GM	A-1, A-2, A-4	0-5	0-10	60-80	55-75	45-70	20-40	25-30	5-10
	14-21	Cobbly sandy clay loam	SC-SM, SC	A-4	0-5	15-20	75-90	70-85	55-75	35-45	25-30	5-10
	21-27	Cobbly sandy clay loam	SC-SM, SC	A-4	0-5	15-20	75-90	70-85	55-75	35-45	25-30	5-10
	27-45	Cobbly clay loam	CL	A-6	0-5	15-20	75-90	70-85	65-85	50-70	30-35	10-15
	45-60	Gravelly sandy clay loam	GC, GC-GM, SC, SC-SM	A-1, A-2, A-4	0-5	0-10	60-80	55-75	45-70	20-40	25-30	5-10

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
60:												
Troutdale-------	0-4	Sandy loam	SC, SC-SM	A-2-4, A-4	0	0	100	100	60-70	30-40	25-30	5-10
	4-8	Sandy loam	SC-SM, SC	A-4, A-2-4	0	0	100	100	60-70	30-40	25-30	5-10
	8-14	Sandy clay loam, gravelly sandy clay loam, loam	SC-SM, SC, GC-GM, CL	A-2, A-4, A-6	0	0-5	60-100	55-100	45-95	20-75	25-35	5-15
	14-18	Sandy clay loam, gravelly sandy clay loam, loam	GC-GM, CL, SC, SC-SM	A-2, A-4, A-6	0	0-5	60-100	55-100	45-95	20-75	25-35	5-15
	18-29	Sandy clay loam, gravelly sandy clay loam, loam	SC, SC-SM, GC-GM, CL	A-2, A-4, A-6	0	0-5	60-100	55-100	45-95	20-75	25-35	5-15
	29-33	Weathered bedrock			---	---	---	---	---	---	---	---
Rogert----------	0-4	Very gravelly sandy loam	GC-GM, GM	A-1	0-5	0-5	35-55	30-50	20-35	10-20	20-25	NP-5
	4-12	Very gravelly sandy loam	GC, GC-GM	A-1, A-2	0-10	0-10	35-55	30-50	20-35	10-20	25-30	5-10
	12-16	Unweathered bedrock			---	---	---	---	---	---	---	---
Kittredge-------	0-10	Sandy loam	SC-SM, SC	A-2, A-4	0	0	100	100	60-70	30-40	25-30	5-10
	10-13	Sandy clay loam, clay loam	SC, CL-ML, SC-SM, CL	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	13-22	Sandy clay loam, clay loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	22-28	Sandy clay loam, clay loam	SC-SM, CL, CL-ML, SC	A-2, A-4, A-6	0-20	0-20	85-100	80-100	65-100	30-80	25-35	5-15
	28-38	Gravelly sandy clay loam	GC-GM, SC, SC-SM, GC	A-1, A-2, A-4	0-10	0-15	60-80	55-75	45-70	20-40	25-30	5-10
	38-53	Gravelly sandy clay loam, gravelly clay loam	CL, GC, SC	A-6	0-10	0-15	60-80	55-75	50-75	40-60	30-35	10-15
	53-72	Loamy sand	SM	A-1, A-2	0-20	0-20	85-100	80-100	40-75	15-30	---	NP

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In.				Pct.	Pct.					Pct.	
61:												
Troutdale-------	0-8	Gravelly sandy loam	SC-SM, GC, GC-GM	A-1, A-2	0	0-5	60-80	55-75	35-50	20-30	25-30	5-10
	8-18	Sandy clay loam, gravelly sandy clay loam, loam	CL, SC-SM, SC, GC-GM	A-2, A-4, A-6	0	0-5	60-100	55-100	45-95	20-75	25-35	5-15
	18-29	Coarse sandy loam, sandy loam, gravelly sandy loam	SC-SM, GC-GM, SC	A-1, A-2, A-4	0	0-5	60-100	55-100	35-70	15-40	25-30	5-10
	29-33	Weathered bedrock			---	---	---	---	---	---	---	---
Sprucedale------	0-6	Gravelly sandy loam	GM, SM, SC-SM	A-1, A-2	0-5	0-5	60-80	55-75	35-50	20-30	20-25	NP-5
	6-12	Sandy loam, loam, gravelly sandy loam	SM, ML, CL-ML, SC-SM	A-1, A-2, A-4	0	0-5	60-100	55-100	35-95	20-75	20-25	NP-5
	12-16	Weathered bedrock			---	---	---	---	---	---	---	---
62:												
Typic Cryaquents-----	0-3	Fine sandy loam	SC, SC-SM	A-4	0-5	0-10	85-100	80-100	55-85	35-50	25-30	5-10
	3-18	Cobbly sand	SP-SM, SM	A-1, A-2, A-3	0-5	0-10	85-100	80-100	40-70	5-15	---	NP
	18-23	Loam	CL, CL-ML	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	23-29	Loam	CL-ML, CL	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	29-32	Clay loam	CL	A-6	0	0	100	100	90-100	70-80	30-35	10-15
	32-44	Sand	SM	A-2, A-3	0	0	100	100	50-70	5-15	---	NP
	44-60	Very gravelly sand	GW, GW-GM	A-1	0-5	5-15	35-55	30-50	20-35	0-10	---	NP
Cumulic Cryaquolls-----	0-6	Loam	CL-ML, CL	A-4	0	0	100	100	85-95	60-75	25-30	5-10
	6-14	Loam, sandy loam	CL-ML, CL, ML, SC, SC-SM, SM	A-2-4, A-4	0-5	0-10	85-100	80-100	60-95	30-75	25-30	NP-10
	14-21	Sandy loam, loam	SC, SC-SM, SM, ML, CL, CL-ML	A-2-4, A-4	0-5	0-10	85-100	80-100	60-95	30-75	20-30	NP-10
	21-64	Very gravelly sand	SW, SW-SM, GW, GW-GM	A-1-a, A-1-b	0-25	0-25	35-55	30-50	20-35	0-10	---	NP
63:												
Urban land------	0-6	Variable			---	---	---	---	---	---	0-14	---

Table 19.--Engineering index properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		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.	
63:												
Breece----------	0-7	Gravelly sandy loam	SC-SM, SC, GC-GM, GC	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	7-20	Gravelly sandy loam	GC-GM, SC-SM, GC, SC	A-1, A-2	0-10	0-15	60-80	55-75	35-50	20-30	25-30	5-10
	20-42	Gravelly coarse sandy loam	SM, SC-SM, GC-GM, GM	A-1	0-10	0-15	60-80	55-75	30-45	15-25	20-25	NP-5
	42-72	Gravelly sandy loam	SM, GC-GM, GM, SC-SM	A-1-b, A-2-4	0-10	0-10	60-80	55-75	35-50	20-30	20-25	NP-5
64:												
Water----------	0-79	Water			---	---	---	---	---	---	---	---

Table 20.--Physical and chemical properties of the 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. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
1:														
Arents----------	0-24	2-6	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.5-1.0	.05	.20	5	4	86	2.0-5.0	5.1-6.5
	24-28	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.2-0.5	.10	.15				10-20	5.6-6.0
	28-33	3-12	1.45-1.60	6-20	0.02-0.02	0.0-2.9	0.0-0.5	.05	.24				1.0-5.0	4.5-5.0
	33-60	2-8	1.45-1.60	20-101	0.01-0.02	0.0-2.9	0.0-0.5	.02	.20				1.0-5.0	3.5-4.4
Dumps, mine---------	0-60	0-1	---	6-20	0.01-0.02	0.0-2.9	0.0-0.1	---	---	-	8	0	---	---
2:														
Bendemeere----------	0-1	0-5	---	6-20	---	---	---	---	---	5	5	56	---	5.1-6.5
	1-3	3-10	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-15	5.6-6.5
	3-10	3-10	1.35-1.50	2-6	0.07-0.09	0.0-2.9	0.0-0.5	.15	.28				2.0-15	5.1-6.0
	10-21	3-25	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-10	5.1-6.0
	21-30	3-25	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.05	.15				1.0-10	5.1-6.0
	30-42	3-6	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				1.0-5.0	5.1-6.0
	42-50	3-6	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.24				0.0-5.0	5.1-6.0
	50-62	3-10	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-5.0	5.1-6.0
Tolland----------	0-1	0-5	---	6-20	---	---	---	---	---	5	5	56	---	5.1-6.5
	1-2	0-5	---	6-20	---	---	---	---	---				---	5.1-6.5
	2-5	5-12	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-15	5.6-6.5
	5-11	2-7	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-5.0	5.1-6.0
	11-50	3-5	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.15				1.0-5.0	5.1-6.0
	50-69	3-5	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.15				1.0-5.0	5.1-6.0
3:														
Breece----------	0-7	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15	5	4	86	10-20	6.1-7.3
	7-20	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15				10-20	6.1-7.3
	20-42	8-15	1.35-1.50	2-6	0.07-0.09	0.0-2.9	1.0-2.0	.10	.20				5.0-15	5.6-6.5
	42-72	5-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.0	.15	.28				3.0-10	5.6-6.5
4:														
Cathedral----------	0-3	6-16	1.35-1.50	0.6-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20	1	5	56	10-20	6.6-7.3
	3-6	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	6-11	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	11-15	---	---	0.06-0.2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
5:														
Cathedral----------	0-3	8-18	1.35-1.50	2-6	0.05-0.06	0.0-2.9	1.2-2.5	.10	.24	1	5	56	3.0-15	6.6-7.3
	3-6	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	6-11	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	11-15	---	---	0.06-0.2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
6:														
Cumulic Cryaquolls--	0-6	10-27	1.25-1.40	0.6-6	0.14-0.18	0.0-2.9	3.0-10	.20	.20	3	8	0	10-35	5.6-7.3
	6-14	8-27	1.25-1.50	0.6-6	0.10-0.18	0.0-2.9	0.5-5.0	.24	.24				4.0-25	5.6-7.3
	14-21	8-27	1.25-1.50	0.6-6	0.10-0.18	0.0-2.9	0.5-5.0	.24	.24				4.0-25	5.6-7.3
	21-64	2-7	1.45-1.60	20-101	0.03-0.04	0.0-2.9	0.0-2.0	.05	.17				1.0-10	5.6-7.3
7:														
Gateview----------	0-7	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15	5	4	86	10-20	6.1-6.5
	7-18	10-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.10	.28				2.0-15	5.6-6.5
	18-42	5-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	5.6-6.5
	42-62	5-15	1.45-1.60	6-20	0.02-0.03	0.0-2.9	0.5-1.0	.02	.20				2.0-5.0	5.6-6.5

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
7:														
Kittredge----------	0-10	12-17	1.35-1.50	2-6	0.10-0.13	0.0-2.9	2.0-4.0	.24	.24	4	3	86	10-20	6.1-7.3
	10-13	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	13-22	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	22-28	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	28-38	20-30	1.25-1.40	0.2-2	0.10-0.13	0.0-2.9	0.5-1.0	.10	.20				10-20	6.1-7.3
	38-53	20-30	1.25-1.40	0.2-0.6	0.13-0.16	3.0-5.9	0.0-0.5	.15	.28				10-20	6.1-7.3
	53-72	3-5	1.45-1.60	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.24	.24				1.0-5.0	5.6-6.0
8:														
Grimstone----------	0-1	0-5	---	6-20	---	---	---	---	---	3	3	86	---	5.1-6.5
	1-4	8-15	1.35-1.50	2-6	0.09-0.13	0.0-2.9	0.5-1.0	.28	.28				4.0-10	6.1-7.3
	4-19	5-18	1.35-1.60	2-20	0.04-0.10	0.0-2.9	0.0-1.0	.10	.24				2.0-15	5.6-6.5
	19-25	18-27	1.25-1.40	0.6-2	0.13-0.16	0.0-2.9	0.0-1.0	.37	.37				5.0-20	5.1-6.5
	25-33	18-27	1.25-1.40	0.6-2	0.13-0.16	0.0-2.9	0.0-1.0	.37	.37				5.0-20	5.1-6.5
	33-36	---	---	0.06-2	---	---	---	---	---				---	---
Bullwark family-----	0-1	0-5	---	6-20	---	---	---	---	---	3	4	86	---	5.1-6.5
	1-4	8-16	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.5	.15	.28				5.0-10	5.6-6.5
	4-22	8-16	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.5	.15	.28				5.0-10	5.1-6.0
	22-40	12-27	1.35-1.45	2-6	0.05-0.07	0.0-1.6	0.0-1.0	.10	.28				5.0-15	5.1-6.0
	40-63	1-8	1.45-1.60	6-20	0.03-0.04	0.0-1.6	0.0-1.0	.05	.20				1.0-10	4.5-6.0
9:														
Grimstone----------	0-1	0-5	---	6-20	---	---	---	---	---	3	3	86	---	5.1-6.5
	1-4	8-15	1.35-1.50	2-6	0.09-0.13	0.0-2.9	0.5-1.0	.28	.28				4.0-10	6.1-7.3
	4-19	5-18	1.35-1.60	2-20	0.04-0.10	0.0-2.9	0.0-1.0	.10	.24				2.0-15	5.6-6.5
	19-25	18-27	1.25-1.40	0.6-2	0.13-0.16	0.0-2.9	0.0-1.0	.37	.37				5.0-20	5.1-6.5
	25-33	18-27	1.25-1.40	0.6-2	0.13-0.16	0.0-2.9	0.0-1.0	.37	.37				5.0-20	5.1-6.5
	33-36	---	---	0.06-2	---	---	---	---	---				---	---
Bullwark family-----	0-1	0-5	---	6-20	---	---	---	---	---	3	4	86	---	5.1-6.5
	1-4	8-16	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.5	.15	.28				5.0-10	5.6-6.5
	4-22	8-16	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.5	.15	.28				5.0-10	5.1-6.0
	22-40	12-27	1.35-1.45	2-6	0.05-0.07	0.0-1.6	0.0-1.0	.10	.28				5.0-15	5.1-6.0
	40-63	1-8	1.45-1.60	6-20	0.03-0.04	0.0-1.6	0.0-1.0	.05	.20				1.0-10	4.5-6.0
10:														
Grimstone----------	0-1	0-5	---	6-20	---	---	---	---	---	3	3	86	---	5.1-6.5
	1-2	8-15	1.35-1.50	2-6	0.09-0.13	0.0-2.9	0.5-1.0	.28	.28				4.0-10	5.6-7.3
	2-11	5-18	1.35-1.60	2-20	0.04-0.10	0.0-2.9	0.0-1.0	.10	.24				2.0-15	5.6-6.5
	11-16	5-18	1.35-1.60	2-20	0.04-0.10	0.0-2.9	0.0-1.0	.10	.24				2.0-15	5.1-6.5
	16-23	20-30	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.0-0.5	.15	.24				10-20	5.1-6.5
	23-36	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.0-0.5	.17	.32				3.0-10	5.1-6.5
	36-40	---	---	0.06-2	---	---	---	---	---				---	---
Hiwan----------	0-1	3-8	1.45-1.60	6-20	0.04-0.06	0.0-2.9	1.0-2.0	.10	.17	1	3	86	3.0-10	5.6-6.5
	1-15	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-1.0	.05	.20				0.0-5.0	5.6-6.5
	15-19	---	---	0.06-0.2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	0-0	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
11:														
Grimstone----------	0-1	0-5	---	6-20	---	---	---	---	---	3	3	86	---	5.1-6.5
	1-2	8-15	1.35-1.50	2-6	0.09-0.13	0.0-2.9	0.5-1.0	.28	.28				4.0-10	6.1-7.3
	2-11	5-18	1.35-1.60	2-20	0.04-0.10	0.0-2.9	0.0-1.0	.10	.24				2.0-15	5.6-6.5
	11-16	3-18	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.2-0.8	.15	.24				2.0-5.0	5.1-6.5
	16-23	20-30	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.0-0.5	.15	.24				10-20	5.1-6.5
	23-36	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.0-0.5	.17	.32				3.0-10	5.1-6.5
	36-40	---	---	0.06-2	---	---	---	---	---				---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
11:														
Peeler----------	0-4	8-18	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.0	.15	.28	5	4	86	4.0-15	5.6-6.5
	4-10	5-18	1.35-1.60	2-20	0.04-0.10	0.0-2.9	0.0-1.0	.10	.20				2.0-15	5.1-6.5
	10-15	5-18	1.35-1.60	2-20	0.04-0.10	0.0-2.9	0.0-1.0	.10	.24				2.0-15	5.1-6.5
	15-29	18-35	1.25-1.50	0.2-2	0.07-0.16	0.0-2.9	0.0-0.5	.15	.28				5.0-20	4.5-6.5
	29-35	18-35	1.25-1.50	0.2-2	0.07-0.16	0.0-2.9	0.0-0.5	.15	.28				5.0-20	4.5-6.5
	35-60	18-35	1.25-1.50	0.2-2	0.07-0.16	0.0-2.9	0.0-0.5	.15	.28				5.0-20	4.5-6.5
Rock outcrop--------	0-60	0-0	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
12:														
Herbman----------	0-10	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-4.0	.10	.20	2	4	86	5.0-15	6.1-7.3
	10-17	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	1.0-3.0	.05	.17				3.0-10	6.1-7.3
	17-24	---	---	0.06-2	---	---	---	---	---				---	---
13:														
Herbman----------	0-10	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-4.0	.10	.20	2	4	86	5.0-15	6.1-7.3
	10-13	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	1.0-3.0	.05	.17				3.0-10	6.1-7.3
	13-17	---	---	0.06-2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
14:														
Herbman----------	0-10	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-4.0	.10	.20	2	4	86	5.0-15	6.1-7.3
	10-13	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	1.0-3.0	.05	.17				3.0-10	6.1-7.3
	13-17	---	---	0.06-2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
15:														
Hiwan----------	0-1	0-5	---	6-20	---	---	---	---	---	1	8	0	---	5.1-6.5
	1-3	3-12	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.5-1.0	.05	.28				2.0-10	6.1-6.5
	3-13	2-5	1.45-1.60	6-20	0.02-0.03	0.0-2.9	0.0-0.5	.05	.24				1.0-5.0	6.1-6.5
	13-17	---	---	0.06-0.2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
Bendemeere----------	0-1	0-5	---	6-20	---	---	---	---	---	5	4	86	---	5.1-6.5
	1-3	3-12	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.5-1.0	.05	.20				2.0-10	5.6-6.5
	3-10	3-10	1.35-1.50	2-6	0.07-0.09	0.0-2.9	0.0-0.5	.15	.28				2.0-15	5.1-6.0
	10-21	3-25	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-10	5.1-6.0
	21-30	3-25	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.05	.15				1.0-10	5.1-6.0
	30-42	3-6	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				1.0-5.0	5.1-6.0
	42-50	3-6	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.24				0.0-5.0	5.1-6.0
	50-62	3-10	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-5.0	5.1-6.0
16:														
Ivywild----------	0-1	0-5	---	6-20	---	---	---	---	---	3	4	86	---	5.1-6.5
	1-8	3-12	1.45-1.60	6-20	0.03-0.04	0.0-2.9	1.0-4.0	.05	.17				4.0-15	4.5-5.5
	8-13	3-12	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.5-1.0	.05	.20				3.0-10	4.5-5.5
	13-24	7-12	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-1.0	.05	.28				1.0-10	4.5-5.5
	24-31	---	---	0.06-2	---	---	---	---	---				---	---
Legault----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-5	2-7	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-5.0	5.6-6.5
	5-18	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.0
	18-22	---	---	0.06-2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
17:														
Ivywild----------	0-1	0-5	---	6-20	---	---	---	---	---	3	4	86	---	5.1-6.5
	1-8	3-12	1.45-1.60	6-20	0.03-0.04	0.0-2.9	1.0-4.0	.05	.17				4.0-15	4.5-5.5
	8-13	3-12	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.5-1.0	.05	.20				3.0-10	4.5-5.5
	13-24	7-12	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-1.0	.05	.28				1.0-10	4.5-5.5
	24-31	---	---	0.06-2	---	---	---	---	---				---	---
Mammoth----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-10	10-11	1.35-1.60	2-20	0.03-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-10	5.1-6.5
	10-16	10-27	1.25-1.40	2-6	0.10-0.13	0.0-2.9	0.5-1.0	.20	.37				5.0-10	5.1-6.5
	16-22	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	22-32	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	32-59	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	59-67	8-12	1.35-1.60	6-20	0.04-0.10	0.0-2.9	0.0-0.5	.10	.15				3.0-5.0	4.5-6.0
Legault----------	0-2	0-5	---	6-20	---	---	---	---	---	2	4	86	---	5.1-6.5
	2-6	2-7	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.5-1.0	.05	.20				2.0-5.0	5.6-6.5
	6-19	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.0
	19-23	---	---	0.06-2	---	---	---	---	---				---	---
18:														
Kataka----------	0-5	12-25	1.25-1.40	2-6	0.07-0.09	0.0-2.9	2.0-5.0	.15	.37	3	7	38	10-25	6.1-7.3
	5-10	10-18	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-15	6.1-7.3
	10-18	27-30	1.25-1.40	0.2-0.6	0.09-0.11	0.0-2.9	0.5-1.0	.10	.24				10-25	6.1-7.3
	18-31	15-27	1.25-1.40	0.2-0.6	0.05-0.06	0.0-2.9	0.0-0.5	.05	.28				10-20	6.1-7.3
	31-38	---	---	0.06-2	---	---	---	---	---				---	---
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	13-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-15	6.1-7.3
	6-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
19:														
Kittredge----------	0-10	12-17	1.35-1.50	2-6	0.10-0.13	0.0-2.9	2.0-4.0	.24	.24	4	3	86	10-20	6.1-7.3
	10-13	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	13-22	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	22-28	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	28-38	20-30	1.25-1.40	0.2-2	0.10-0.13	0.0-2.9	0.5-1.0	.10	.20				10-20	6.1-7.3
	38-53	20-30	1.25-1.40	0.2-0.6	0.13-0.16	3.0-5.9	0.0-0.5	.15	.28				10-20	6.1-7.3
	53-72	3-5	1.45-1.60	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.24	.24				1.0-5.0	5.6-6.0
Guanella----------	0-6	3-18	1.25-1.40	0.6-6	0.13-0.16	0.0-2.9	2.0-5.0	.37	.37	3	6	48	5.0-15	5.6-7.3
	6-18	3-18	1.25-1.40	0.6-6	0.10-0.13	0.0-2.9	2.0-4.0	.15	.28				10-20	5.6-7.3
	18-29	3-18	1.25-1.40	0.6-6	0.13-0.16	0.0-2.9	1.5-3.5	.37	.37				5.0-15	5.6-7.3
	29-48	3-18	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.2-0.8	.15	.24				2.0-5.0	5.6-7.3
	48-62	3-18	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.24				2.0-5.0	5.6-7.3
20:														
Kittredge----------	0-10	12-17	1.35-1.50	2-6	0.10-0.13	0.0-2.9	2.0-4.0	.24	.24	4	3	86	10-20	6.1-7.3
	10-13	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	13-22	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	22-28	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	28-38	20-30	1.25-1.40	0.2-2	0.10-0.13	0.0-2.9	0.5-1.0	.10	.20				10-20	6.1-7.3
	38-53	20-30	1.25-1.40	0.2-0.6	0.13-0.16	3.0-5.9	0.0-0.5	.15	.28				10-20	6.1-7.3
	53-72	3-5	1.45-1.60	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.24	.24				1.0-5.0	5.6-6.0

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
20:														
Guanella----------	0-6	3-18	1.25-1.40	0.6-6	0.12-0.16	0.0-2.9	2.0-5.0	.37	.37	3	6	48	5.0-15	5.1-6.5
	6-18	3-18	1.25-1.40	0.6-6	0.10-0.13	0.0-2.9	2.0-4.0	.15	.28				10-20	5.6-6.5
	18-29	3-18	1.25-1.40	0.6-6	0.13-0.16	0.0-2.9	1.5-3.5	.37	.37				5.0-15	5.6-6.5
	29-48	3-18	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.2-0.8	.15	.24				2.0-5.0	5.6-6.5
	48-62	3-18	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.24				2.0-5.0	5.6-6.5
21:														
Legault----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-5	2-7	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-5.0	5.6-6.5
	5-18	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.0
	18-22	---	---	0.06-2	---	---	---	---	---				---	---
22:														
Legault----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-5	2-7	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-5.0	5.6-6.5
	5-18	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.0
	18-22	---	---	0.06-2	---	---	---	---	---				---	---
23:														
Legault----------	0-2	0-5	---	6-20	---	---	---	---	---	2	4	86	---	5.1-6.5
	2-6	2-7	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.5-1.0	.05	.20				2.0-5.0	5.6-6.5
	6-19	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.0
	19-23	---	---	0.06-2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
24:														
Lininger----------	0-3	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-3.0	.15	.24	3	4	86	5.0-15	6.1-7.3
	3-9	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-3.0	.15	.24				5.0-15	6.1-7.3
	9-15	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	15-22	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	22-31	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	31-39	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	39-43	---	---	0.06-2	---	---	---	---	---				---	---
Breece----------	0-7	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15	5	4	86	10-20	6.1-7.3
	7-20	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15				10-20	6.1-7.3
	20-42	8-15	1.35-1.50	2-6	0.07-0.09	0.0-2.9	1.0-2.0	.10	.20				5.0-15	5.6-6.5
	42-72	5-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.0	.15	.28				3.0-10	5.6-6.5
25:														
Lininger----------	0-3	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-3.0	.15	.24	3	4	86	5.0-15	6.1-7.3
	3-9	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-3.0	.15	.24				5.0-15	6.1-7.3
	9-15	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	15-22	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	22-31	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	31-39	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	39-43	---	---	0.06-2	---	---	---	---	---				---	---
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	13-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-15	6.1-7.3
	6-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
26:														
Lininger----------	0-3	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-3.0	.15	.24	3	4	86	5.0-15	6.1-7.3
	3-9	8-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-3.0	.15	.24				5.0-15	6.1-7.3
	9-15	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	15-22	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	22-31	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	31-39	20-28	1.25-1.40	0.2-2	0.13-0.16	0.0-2.9	0.0-1.0	.20	.20				10-20	6.1-7.3
	39-43	---	---	0.06-2	---	---	---	---	---				---	---
Trag----------	0-4	14-20	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-4.0	.10	.20	5	4	86	10-20	6.6-7.3
	4-14	20-25	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	1.0-2.0	.10	.17				10-20	6.6-7.3
	14-21	20-30	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.5-1.0	.10	.20				10-20	6.6-7.3
	21-27	20-30	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.5-1.0	.10	.20				10-20	6.6-7.3
	27-45	27-34	1.25-1.40	0.2-0.6	0.13-0.16	3.0-5.9	0.5-1.0	.15	.24				10-20	6.6-7.3
	45-60	20-30	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.0-0.5	.15	.24				10-20	6.6-7.3
27:														
Lone Rock----------	0-9	5-16	1.35-1.45	2-6	0.07-0.10	0.0-2.9	2.0-4.0	.10	.20	5	4	86	5.0-20	6.1-7.3
	9-13	3-10	1.40-1.50	6-20	0.03-0.07	0.0-2.9	1.0-2.0	.05	.17				4.0-10	6.1-7.3
	13-28	3-10	1.40-1.50	6-20	0.03-0.07	0.0-2.9	1.0-2.0	.05	.17				4.0-10	6.1-7.3
	28-60	3-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.5-1.0	.02	.17				3.0-10	6.1-7.3
Breece----------	0-7	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15	5	4	86	10-20	6.1-7.3
	7-20	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15				10-20	6.1-7.3
	20-42	8-15	1.35-1.50	2-6	0.07-0.09	0.0-2.9	1.0-2.0	.10	.20				5.0-15	5.6-6.5
	42-72	5-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.0	.15	.28				3.0-10	5.6-6.5
28:														
Lone Rock----------	0-9	5-16	1.35-1.45	2-6	0.07-0.10	0.0-2.9	2.0-4.0	.10	.20	5	4	86	5.0-20	6.1-7.3
	9-13	3-10	1.40-1.50	6-20	0.03-0.07	0.0-2.9	1.0-2.0	.05	.17				4.0-10	6.1-7.3
	13-28	3-10	1.40-1.50	6-20	0.03-0.07	0.0-2.9	1.0-2.0	.05	.17				4.0-10	6.1-7.3
	28-60	3-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.5-1.0	.02	.17				3.0-10	6.1-7.3
Breece----------	0-7	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15	5	4	86	10-20	6.1-7.3
	7-20	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15				10-20	6.1-7.3
	20-42	8-15	1.35-1.50	2-6	0.07-0.09	0.0-2.9	1.0-2.0	.10	.20				5.0-15	5.6-6.5
	42-72	5-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.0	.15	.28				3.0-10	5.6-6.5
30:														
Mammoth----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-10	10-11	1.35-1.60	2-20	0.03-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-10	5.1-6.5
	10-16	10-27	1.25-1.40	2-6	0.10-0.13	0.0-2.9	0.5-1.0	.20	.37				5.0-10	5.1-6.5
	16-22	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	22-32	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	32-59	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	59-67	8-12	1.35-1.60	6-20	0.04-0.10	0.0-2.9	0.0-0.5	.10	.15				3.0-5.0	4.5-6.0
Ohman----------	0-2	0-5	---	6-20	---	---	---	---	---	3	5	56	---	5.1-6.5
	2-5	5-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	5.1-6.5
	5-13	3-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	13-21	12-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	21-35	12-17	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32				4.0-10	4.5-6.5
	35-39	---	---	0.06-2	---	---	---	---	---				---	---
Bendemeere----------	0-1	0-5	---	6-20	---	---	---	---	---	5	5	56	---	5.1-6.5
	1-3	3-10	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-15	5.6-6.5
	3-10	3-10	1.35-1.50	2-6	0.07-0.09	0.0-2.9	0.0-0.5	.15	.28				2.0-15	5.1-6.0
	10-21	3-25	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-10	5.1-6.0
	21-30	3-25	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.05	.15				1.0-10	5.1-6.0
	30-42	3-6	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				1.0-5.0	5.1-6.0
	42-50	3-6	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.24				0.0-5.0	5.1-6.0
	50-62	3-10	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-5.0	5.1-6.0

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
31:														
Mammoth----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-10	10-11	1.35-1.60	2-20	0.03-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-10	5.1-6.5
	10-16	10-27	1.25-1.40	2-6	0.10-0.13	0.0-2.9	0.5-1.0	.20	.37				5.0-10	5.1-6.5
	16-22	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	22-32	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	32-59	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	59-67	8-12	1.35-1.60	6-20	0.04-0.10	0.0-2.9	0.0-0.5	.10	.15				3.0-5.0	4.5-6.0
Ohman----------	0-2	0-5	---	6-20	---	---	---	---	---	3	5	56	---	5.1-6.5
	2-5	5-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	5.1-6.5
	5-13	3-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	13-21	12-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	21-35	12-17	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32				4.0-10	4.5-6.5
	35-39	---	---	0.06-2	---	---	---	---	---				---	---
Bendemeere----------	0-1	0-5	---	6-20	---	---	---	---	---	5	5	56	---	5.1-6.5
	1-3	3-12	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-15	5.6-6.5
	3-10	3-10	1.35-1.50	2-6	0.07-0.09	0.0-2.9	0.0-0.5	.15	.28				2.0-15	5.1-6.0
	10-21	3-25	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-10	5.1-6.0
	21-30	3-25	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.05	.15				1.0-10	5.1-6.0
	30-42	3-6	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				1.0-5.0	5.1-6.0
	42-50	3-6	1.45-1.60	6-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.24				0.0-5.0	5.1-6.0
	50-62	3-10	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-5.0	5.1-6.0
32:														
Mammoth----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-10	10-11	1.35-1.60	2-20	0.03-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-10	5.1-6.5
	10-16	10-27	1.25-1.40	2-6	0.10-0.13	0.0-2.9	0.5-1.0	.20	.37				5.0-10	5.1-6.5
	16-22	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	22-32	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	32-59	8-27	1.35-1.60	2-20	0.03-0.07	0.0-2.9	0.5-1.0	.05	.20				4.0-10	5.1-6.5
	59-67	8-12	1.35-1.60	6-20	0.04-0.10	0.0-2.9	0.0-0.5	.10	.15				3.0-5.0	4.5-6.0
Ohman----------	0-2	0-5	---	6-20	---	---	---	---	---	3	5	56	---	5.1-6.5
	2-5	5-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	5.1-6.5
	5-13	3-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	13-21	12-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	21-35	12-17	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32				4.0-10	4.5-6.5
	35-39	---	---	0.06-2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
33:														
Ohman----------	0-2	0-5	---	6-20	---	---	---	---	---	3	5	56	---	5.1-6.5
	2-5	5-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	5.1-6.5
	5-13	3-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	13-21	12-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	21-35	12-17	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32				4.0-10	4.5-6.5
	35-39	---	---	0.06-2	---	---	---	---	---				---	---
Ivywild----------	0-1	0-5	---	6-20	---	---	---	---	---	3	5	56	---	5.1-6.5
	1-3	3-12	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-4.0	.10	.24				4.0-15	4.5-5.5
	3-11	7-12	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.24				2.0-10	4.5-5.5
	11-23	7-12	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.24				2.0-10	4.5-5.5
	23-27	---	---	0.06-2	---	---	---	---	---				---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
34:														
Ohman----------	0-2	0-5	---	6-20	---	---	---	---	---	3	5	56	---	5.1-6.5
	2-5	5-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	5.1-6.5
	5-13	3-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	13-21	12-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	21-35	12-17	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32				4.0-10	4.5-6.5
	35-39	---	---	0.06-2	---	---	---	---	---				---	---
Legault----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-5	2-7	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-5.0	5.6-6.5
	5-18	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.5
	18-22	---	---	0.06-2	---	---	---	---	---				---	---
35:														
Ohman----------	0-2	0-5	---	6-20	---	---	---	---	---	3	5	56	---	5.1-6.5
	2-5	5-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	5.1-6.5
	5-13	3-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	13-21	12-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	21-35	12-17	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32				4.0-10	4.5-6.5
	35-39	---	---	0.06-2	---	---	---	---	---				---	---
Legault----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-5	2-7	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				2.0-5.0	5.6-6.5
	5-18	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.5
	18-22	---	---	0.06-2	---	---	---	---	---				---	---
36:														
Pettingell----------	0-4	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-3.0	.15	.24	5	4	86	5.0-15	6.1-7.3
	4-11	10-26	1.25-1.40	2-6	0.07-0.09	0.0-2.9	0.5-1.0	.15	.37				5.0-20	6.1-7.3
	11-18	8-20	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.0-1.0	.10	.28				3.0-15	5.6-6.5
	18-37	8-20	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-1.0	.10	.24				3.0-15	5.6-6.5
	37-60	5-15	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32				2.0-10	5.6-6.5
Rogert----------	0-10	10-18	1.35-1.50	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20	1	5	56	10-20	6.1-7.3
	10-18	10-18	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				5.0-15	6.1-7.3
	18-22	---	---	0.06-0.2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
37:														
Raleigh----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	8-16	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-20	6.1-7.3
	6-15	8-16	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-20	5.6-7.3
	15-19	---	---	0.06-2	---	---	---	---	---				---	---
38:														
Raleigh----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	8-16	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-20	6.1-7.3
	6-15	8-16	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-20	5.6-7.3
	15-19	---	---	0.06-2	---	---	---	---	---				---	---
39:														
Raleigh----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	8-16	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-20	6.1-7.3
	6-15	8-16	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-20	5.6-7.3
	15-19	---	---	0.06-2	---	---	---	---	---				---	---
40:														
Raleigh----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	8-16	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-20	6.1-7.3
	6-15	8-16	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-20	5.6-7.3
	15-19	---	---	0.06-2	---	---	---	---	---				---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
40:														
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
41:														
Redfeather----------	0-3	0-5	---	6-20	---	---	---	---	---	1	4	86	---	5.1-6.5
	3-4	12-18	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.0	.15	.28				5.0-10	6.1-7.3
	4-8	15-18	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.0-0.5	.17	.32				3.0-10	5.1-6.0
	8-12	15-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				5.0-10	5.1-6.0
	12-18	20-30	1.25-1.40	0.6-2	0.07-0.09	0.0-2.9	0.0-0.5	.10	.24				10-15	5.6-7.3
	18-23	---	---	0.06-2	---	---	---	---	---				---	---
Legault----------	0-1	0-5	---	6-20	---	---	---	---	---	2	8	0	---	5.1-6.5
	1-4	2-7	1.45-1.60	6-20	0.02-0.03	0.0-2.9	0.5-1.0	.02	.20				2.0-5.0	5.6-6.5
	4-18	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.5
	18-22	---	---	0.06-2	---	---	---	---	---				---	---
42:														
Redfeather----------	0-3	0-5	---	6-20	---	---	---	---	---	1	4	86	---	5.1-6.5
	3-4	12-18	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.0	.15	.28				5.0-10	6.1-7.3
	4-8	15-18	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.0-0.5	.17	.32				3.0-10	5.1-6.0
	8-12	15-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				5.0-10	5.1-6.0
	12-18	20-30	1.25-1.40	0.6-2	0.07-0.09	0.0-2.9	0.0-0.5	.10	.24				10-15	5.6-7.3
	18-23	---	---	0.06-2	---	---	---	---	---				---	---
Legault----------	0-1	0-5	---	6-20	---	---	---	---	---	2	8	0	---	5.1-6.5
	1-4	2-7	1.45-1.60	6-20	0.02-0.03	0.0-2.9	0.5-1.0	.02	.20				2.0-5.0	5.6-6.5
	4-18	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.5
	18-22	---	---	0.06-2	---	---	---	---	---				---	---
Tolvar----------	0-1	0-5	---	6-20	---	---	---	---	---	4	4	86	---	5.1-6.5
	1-4	12-18	1.35-1.50	2-6	0.07-0.09	0.0-2.9	0.5-1.0	.15	.24				2.0-15	5.6-6.5
	4-14	12-18	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-10	5.6-6.5
	14-19	12-18	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.0-0.5	.10	.32				1.0-10	5.6-6.5
	19-26	20-27	1.25-1.40	0.6-2	0.07-0.09	0.0-2.9	0.0-0.5	.10	.24				10-15	5.6-6.5
	26-48	20-27	1.25-1.40	0.6-2	0.07-0.09	0.0-2.9	0.0-0.5	.10	.24				10-15	5.6-6.5
	48-70	20-27	1.25-1.40	0.6-2	0.07-0.09	0.0-2.9	0.0-0.5	.10	.24				10-15	5.6-6.5
43:														
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-7	3-12	1.35-1.50	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-15	6.1-7.3
	7-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---
44:														
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-7	3-12	1.35-1.50	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-15	6.1-7.3
	7-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---
45:														
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-7	3-12	1.35-1.50	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20				5.0-15	6.1-7.3
	7-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---
46:														
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-7	13-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-15	6.1-7.3
	7-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
47:														
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	13-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-15	6.1-7.3
	6-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---
Cathedral----------	0-3	6-16	1.35-1.50	0.6-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20	1	5	56	10-20	6.6-7.3
	3-6	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	6-11	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	11-15	---	---	0.06-0.2	---	---	---	---	---				---	---
48:														
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	13-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-15	6.1-7.3
	6-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---
Cathedral----------	0-3	6-16	1.35-1.50	0.6-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20	1	5	56	10-20	6.6-7.3
	3-6	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	6-11	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	11-15	---	---	0.06-0.2	---	---	---	---	---				---	---
Rubble land---------	0-60	0-0	1.70-2.35	20-20	0.00-0.10	0.0-2.9	0.0-0.1	---	---	-	8	0	---	---
49:														
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
50:														
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
Cathedral----------	0-3	6-16	1.35-1.50	0.6-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20	1	5	56	10-20	6.6-7.3
	3-6	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	6-11	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	11-15	---	---	0.06-0.2	---	---	---	---	---				---	---
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	13-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-15	6.1-7.3
	6-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---
51:														
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
Resort----------	0-1	0-5	---	6-20	---	---	---	---	---	2	5	56	---	5.1-6.5
	1-6	13-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				5.0-15	6.1-7.3
	6-14	2-10	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.17				1.0-5.0	6.1-7.3
	14-18	---	---	0.06-2	---	---	---	---	---				---	---
52:														
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
Rubble land---------	0-60	0-0	1.70-2.35	20-20	0.00-0.10	0.0-2.9	0.0-0.1	---	---	-	8	0	---	---
Cathedral----------	0-3	6-16	1.35-1.50	0.6-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20	1	5	56	10-20	6.6-7.3
	3-6	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	6-11	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	11-15	---	---	0.06-0.2	---	---	---	---	---				---	---
53:														
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
Rubble land---------	0-60	0-0	1.70-2.35	20-20	0.00-0.10	0.0-2.9	0.0-0.1	---	---	-	8	0	---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
53:														
Cathedral----------	0-3	6-16	1.35-1.50	0.6-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20	1	5	56	10-20	6.6-7.3
	3-6	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	6-11	5-16	1.30-1.50	0.6-6	0.05-0.07	0.0-2.9	0.5-2.0	.10	.28				5.0-15	6.6-7.3
	11-15	---	---	0.06-0.2	---	---	---	---	---				---	---
54:														
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
Tolland----------	0-1	0-5	---	6-20	---	---	---	---	---	5	4	86	---	5.1-6.5
	1-2	0-5	---	6-20	---	---	---	---	---				---	5.1-6.5
	2-5	5-12	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-2.0	.15	.24				4.0-10	5.6-6.5
	5-11	2-7	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-5.0	5.1-6.0
	11-50	3-5	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.15				1.0-5.0	5.1-6.0
	50-69	3-5	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.15				1.0-5.0	5.1-6.0
55:														
Rogert----------	0-8	10-18	1.35-1.50	2-6	0.03-0.04	0.0-2.9	2.0-4.0	.02	.20	1	8	0	10-20	6.1-7.3
	8-16	10-18	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.5-1.0	.05	.28				5.0-15	6.1-7.3
	16-20	---	---	0.06-0.2	---	---	---	---	---				---	---
Herbman----------	0-4	13-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-2.0	.15	.24	2	4	86	5.0-15	6.1-7.3
	4-13	5-18	1.25-1.50	2-6	0.05-0.09	0.0-2.9	1.0-3.0	.10	.24				4.0-15	6.1-7.3
	13-17	---	---	0.06-2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
56:														
Tahana----------	0-1	0-5	---	6-20	---	---	---	---	---	3	4	86	---	5.1-6.5
	1-2	0-5	---	6-20	---	---	---	---	---				---	5.1-6.5
	2-8	2-12	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-3.0	.15	.24				3.0-15	5.1-6.5
	8-20	2-8	1.45-1.60	6-20	0.03-0.04	0.0-2.9	1.0-2.0	.05	.17				3.0-15	4.5-6.5
	20-24	2-6	1.45-1.60	6-20	0.02-0.03	0.0-2.9	0.5-1.0	.02	.20				3.0-10	4.5-6.5
	24-28	---	---	0.06-2	---	---	---	---	---				---	---
Legault----------	0-2	0-5	---	6-20	---	---	---	---	---	2	4	86	---	5.1-6.5
	2-6	2-7	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.5-1.0	.05	.20				2.0-5.0	5.6-6.5
	6-19	1-5	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.10	.24				0.0-5.0	5.1-6.5
	19-23	---	---	0.06-2	---	---	---	---	---				---	---
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
57:														
Tolland----------	0-1	0-5	---	6-20	---	---	---	---	---	5	4	86	---	5.1-6.5
	1-2	0-5	---	6-20	---	---	---	---	---				---	5.1-6.5
	2-5	5-12	1.35-1.50	2-6	0.07-0.10	0.0-2.9	1.0-2.0	.15	.24				4.0-10	5.6-6.5
	5-11	2-7	1.35-1.50	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				1.0-5.0	5.1-6.0
	11-50	3-5	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.15				1.0-5.0	5.1-6.0
	50-69	3-5	1.45-1.60	6-20	0.01-0.02	0.0-2.9	0.0-0.5	.02	.15				1.0-5.0	5.1-6.0
Rock outcrop--------	0-60	---	---	0.0000-0.0015	0.00-0.00	---	---	---	---	-	8	0	---	---
58:														
Tonahutu----------	0-1	0-5	---	6-20	---	---	---	---	---	3	3	86	---	5.1-6.5
	1-4	8-18	1.35-1.50	0.6-6	0.08-0.11	0.0-2.9	1.0-2.0	.20	.20				5.0-15	5.1-6.5
	4-16	8-18	1.35-1.50	2-6	0.08-0.11	0.0-2.9	0.0-1.0	.24	.24				2.0-15	5.1-6.1
	16-24	8-17	1.45-1.60	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				2.0-10	5.1-6.5
	24-38	8-17	1.45-1.60	2-6	0.05-0.06	0.0-2.9	0.0-0.5	.10	.28				2.0-10	4.5-6.5
	38-48	2-6	1.45-1.60	6-20	0.03-0.04	0.0-2.9	0.0-0.5	.05	.15				1.0-5.0	4.5-6.5
	48-52	---	---	0.06-2	---	---	---	---	---				---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
58:														
Ohman----------	0-2	0-5	---	6-20	---	---	---	---	---	3	5	56	---	5.1-6.5
	2-5	5-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	5.1-6.5
	5-13	3-14	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	13-21	12-17	1.35-1.50	2-6	0.05-0.07	0.0-2.9	1.0-2.0	.10	.24				4.0-10	4.5-6.5
	21-35	12-17	1.35-1.50	2-6	0.03-0.04	0.0-2.9	0.0-0.5	.05	.32				4.0-10	4.5-6.5
	35-39	---	---	0.06-2	---	---	---	---	---				---	---
59:														
Trag----------	0-4	14-20	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-4.0	.10	.20	5	4	86	10-20	6.6-7.3
	4-14	20-25	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	1.0-2.0	.10	.17				10-20	6.6-7.3
	14-21	20-30	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.5-1.0	.10	.20				10-20	6.6-7.3
	21-27	20-30	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.5-1.0	.10	.20				10-20	6.6-7.3
	27-45	27-34	1.25-1.40	0.2-0.6	0.13-0.16	3.0-5.9	0.5-1.0	.15	.24				10-20	6.6-7.3
	45-60	20-30	1.25-1.40	0.6-2	0.10-0.13	0.0-2.9	0.0-0.5	.15	.24				10-20	6.6-7.3
60:														
Troutdale----------	0-4	10-20	1.35-1.50	2-6	0.10-0.13	0.0-2.9	2.0-5.0	.15	.15	3	3	86	10-20	6.1-7.3
	4-8	10-20	1.35-1.50	2-6	0.10-0.13	0.0-2.9	2.0-5.0	.15	.15				10-20	6.1-7.3
	8-14	20-35	1.25-1.40	0.2-2	0.10-0.16	0.0-2.9	0.5-1.0	.28	.28				10-25	6.1-7.3
	14-18	20-35	1.25-1.40	0.2-2	0.10-0.16	0.0-2.9	0.5-1.0	.28	.28				10-25	6.1-7.3
	18-29	20-35	1.25-1.40	0.2-2	0.10-0.16	0.0-2.9	0.5-1.0	.28	.28				10-25	6.1-7.3
	29-33	---	---	0.06-2	---	---	---	---	---				---	---
Rogert----------	0-4	10-18	1.35-1.40	2-6	0.05-0.07	0.0-2.9	2.0-4.0	.05	.20	1	5	56	5.0-20	6.1-7.3
	4-12	10-18	1.35-1.50	2-6	0.05-0.07	0.0-2.9	0.5-1.0	.10	.28				5.0-15	6.1-7.3
	12-16	---	---	0.06-0.2	---	---	---	---	---				---	---
Kittredge----------	0-10	12-17	1.35-1.50	2-6	0.10-0.13	0.0-2.9	2.0-4.0	.24	.24	4	3	86	10-20	6.1-7.3
	10-13	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	13-22	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	22-28	20-34	1.25-1.40	0.2-2	0.13-0.19	0.0-2.9	0.5-1.0	.20	.20				10-20	6.1-7.3
	28-38	20-30	1.25-1.40	0.2-2	0.10-0.13	0.0-2.9	0.5-1.0	.10	.20				10-20	6.1-7.3
	38-53	20-30	1.25-1.40	0.2-0.6	0.13-0.16	3.0-5.9	0.0-0.5	.15	.28				10-20	6.1-7.3
	53-72	3-5	1.45-1.60	6-20	0.05-0.07	0.0-2.9	0.0-0.5	.24	.24				1.0-5.0	5.6-6.0
61:														
Troutdale----------	0-8	10-20	1.35-1.50	0.6-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15	3	4	86	10-20	6.1-7.3
	8-18	20-35	1.25-1.40	0.2-2	0.10-0.16	0.0-2.9	0.5-1.0	.28	.28				10-25	6.1-7.3
	18-29	10-20	1.35-1.50	0.6-6	0.07-0.12	0.0-2.9	0.0-1.0	.24	.24				4.0-15	6.1-7.3
	29-33	---	---	0.06-2	---	---	---	---	---				---	---
Sprucedale----------	0-6	5-14	1.35-1.50	2-6	0.07-0.10	0.0-2.9	3.0-5.0	.10	.15	2	4	86	10-20	6.1-7.3
	6-12	7-18	1.25-1.50	0.6-6	0.09-0.16	0.0-2.9	1.0-3.0	.24	.24				5.0-20	6.1-7.3
	12-16	---	---	0.06-2	---	---	---	---	---				---	---
62:														
Typic Cryaquents----	0-3	15-20	1.35-1.50	0.6-2	0.12-0.14	0.0-2.9	0.5-1.0	.28	.28	3	8	0	5.0-15	5.6-6.5
	3-18	2-5	1.45-1.60	20-101	0.05-0.07	0.0-2.9	0.0-1.0	.17	.17				1.0-5.0	5.6-6.5
	18-23	15-25	1.25-1.40	0.6-2	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43				5.0-15	5.6-6.5
	23-29	15-25	1.25-1.40	0.6-2	0.14-0.18	0.0-2.9	0.0-0.5	.43	.43				5.0-15	5.6-6.5
	29-32	27-34	1.25-1.40	0.2-0.6	0.17-0.21	3.0-5.9	0.0-0.5	.28	.28				10-20	5.6-6.0
	32-44	2-5	1.45-1.60	20-101	0.05-0.08	0.0-2.9	0.0-0.5	.20	.20				1.0-5.0	5.6-6.0
	44-60	2-5	1.45-1.60	20-101	0.03-0.04	0.0-2.9	0.0-0.5	.05	.20				1.0-5.0	5.6-6.0
Cumulic Cryaquolls--	0-6	10-27	1.25-1.40	0.6-6	0.14-0.18	0.0-2.9	3.0-10	.20	.20	3	8	0	10-35	5.6-7.3
	6-14	8-27	1.25-1.50	0.6-6	0.10-0.18	0.0-2.9	0.5-5.0	.24	.24				4.0-25	5.6-7.3
	14-21	8-27	1.25-1.50	0.6-6	0.10-0.18	0.0-2.9	0.5-5.0	.24	.24				4.0-25	5.6-7.3
	21-64	2-7	1.45-1.60	20-101	0.03-0.04	0.0-2.9	0.0-2.0	.05	.17				1.0-10	5.6-7.3
63:														
Urban land----------	0-6	---	---	0.0000-0.2	0.00-0.00	---	---	---	---	-	8	0	---	---

Table 20.--Physical and chemical properties of the soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index	Cation exchange capacity	Soil reaction
								Kw	Kf	T				
	In.	Pct.	g/cc	In./hr.	In./in.	Pct.	Pct.						meq/100 g	pH
63:														
Breece----------	0-7	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15	5	4	86	10-20	6.1-7.3
	7-20	10-17	1.35-1.50	2-6	0.07-0.10	0.0-2.9	2.0-5.0	.10	.15				10-20	6.1-7.3
	20-42	8-15	1.35-1.50	2-6	0.07-0.09	0.0-2.9	1.0-2.0	.10	.20				5.0-15	5.6-6.5
	42-72	5-15	1.35-1.50	2-6	0.07-0.10	0.0-2.9	0.5-1.0	.15	.28				3.0-10	5.6-6.5
64:														
Water----------	0-79	---	---	---	---	---	---	---	---	-	---	---	---	---

Table 21.--Water features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft.	Ft.	Ft.				
1:									
Arents	A	Jan-Dec	---	---	---	---	None	---	None
Dumps, mine	A	Jan-Dec	---	---	---	---	None	---	None
2:									
Bendemeere	B	Jan-Dec	---	---	---	---	None	---	None
Tolland	A	Jan-Dec	---	---	---	---	None	---	None
3:									
Breece	B	Jan-Dec	---	---	---	---	None	---	None
4:									
Cathedral	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
5:									
Cathedral	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
6:									
Cumulic Cryaquolls	B/D	April	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
		May	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
		June	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
		July	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
		August	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
7:									
Gateview	B	Jan-Dec	---	---	---	---	None	---	None
Kittredge	B	Jan-Dec	---	---	---	---	None	---	None
8:									
Grimstone	B	Jan-Dec	---	---	---	---	None	---	None
Bullwark family	C	Jan-Dec	---	---	---	---	None	---	None
9:									
Grimstone	B	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft.	Ft.	Ft.				
9:									
Bullwark family----------	C	Jan-Dec	---	---	---	---	None	---	None
10:									
Grimstone----------	B	Jan-Dec	---	---	---	---	None	---	None
Hiwan----------	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
11:									
Grimstone----------	B	Jan-Dec	---	---	---	---	None	---	None
Peeler----------	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
12:									
Herbman----------	D	Jan-Dec	---	---	---	---	None	---	None
13:									
Herbman----------	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
14:									
Herbman----------	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
15:									
Hiwan----------	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
Bendemeere----------	B	Jan-Dec	---	---	---	---	None	---	None
16:									
Ivywild----------	C	Jan-Dec	---	---	---	---	None	---	None
Legault----------	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
17:									
Ivywild----------	C	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft.	Ft.	Ft.				
17:									
Mammoth	B	Jan-Dec	---	---	---	---	None	---	None
Legault	D	Jan-Dec	---	---	---	---	None	---	None
18:									
Kataka	C	Jan-Dec	---	---	---	---	None	---	None
Resort	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
19:									
Kittredge	B	Jan-Dec	---	---	---	---	None	---	None
Guanella	B	Jan-Dec	---	---	---	---	None	---	None
20:									
Kittredge	B	Jan-Dec	---	---	---	---	None	---	None
Guanella	B	Jan-Dec	---	---	---	---	None	---	None
21:									
Legault	D	Jan-Dec	---	---	---	---	None	---	None
22:									
Legault	D	Jan-Dec	---	---	---	---	None	---	None
23:									
Legault	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
24:									
Lininger	C	Jan-Dec	---	---	---	---	None	---	None
Breece	B	Jan-Dec	---	---	---	---	None	---	None
25:									
Lininger	C	Jan-Dec	---	---	---	---	None	---	None
Resort	D	Jan-Dec	---	---	---	---	None	---	None
26:									
Lininger	C	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft.	Ft.	Ft.				
26:									
Trag	C	Jan-Dec	---	---	---	---	None	---	None
27:									
Lone Rock	B	Jan-Dec	---	---	---	---	None	---	None
Breece	B	Jan-Dec	---	---	---	---	None	---	None
28:									
Lone Rock	B	Jan-Dec	---	---	---	---	None	---	None
Breece	B	Jan-Dec	---	---	---	---	None	---	None
30:									
Mammoth	B	Jan-Dec	---	---	---	---	None	---	None
Ohman	B	Jan-Dec	---	---	---	---	None	---	None
Bendemeere	B	Jan-Dec	---	---	---	---	None	---	None
31:									
Mammoth	B	Jan-Dec	---	---	---	---	None	---	None
Ohman	B	Jan-Dec	---	---	---	---	None	---	None
Bendemeere	B	Jan-Dec	---	---	---	---	None	---	None
32:									
Mammoth	B	Jan-Dec	---	---	---	---	None	---	None
Ohman	B	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
33:									
Ohman	B	Jan-Dec	---	---	---	---	None	---	None
Ivywild	C	Jan-Dec	---	---	---	---	None	---	None
34:									
Ohman	B	Jan-Dec	---	---	---	---	None	---	None
Legault	D	Jan-Dec	---	---	---	---	None	---	None
35:									
Ohman	B	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft.	Ft.	Ft.				
35:									
Legault	D	Jan-Dec	---	---	---	---	None	---	None
36:									
Pettingell	B	Jan-Dec	---	---	---	---	None	---	None
Rogert	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
37:									
Raleigh	D	Jan-Dec	---	---	---	---	None	---	None
38:									
Raleigh	D	Jan-Dec	---	---	---	---	None	---	None
39:									
Raleigh	D	Jan-Dec	---	---	---	---	None	---	None
40:									
Raleigh	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
41:									
Redfeather	D	Jan-Dec	---	---	---	---	None	---	None
Legault	D	Jan-Dec	---	---	---	---	None	---	None
42:									
Redfeather	D	Jan-Dec	---	---	---	---	None	---	None
Legault	D	Jan-Dec	---	---	---	---	None	---	None
Tolvar	B	Jan-Dec	---	---	---	---	None	---	None
43:									
Resort	D	Jan-Dec	---	---	---	---	None	---	None
44:									
Resort	D	Jan-Dec	---	---	---	---	None	---	None
45:									
Resort	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft.	Ft.	Ft.				
46:									
Resort----------	D	Jan-Dec	---	---	---	---	None	---	None
47:									
Resort----------	D	Jan-Dec	---	---	---	---	None	---	None
Cathedral----------	D	Jan-Dec	---	---	---	---	None	---	None
48:									
Resort----------	D	Jan-Dec	---	---	---	---	None	---	None
Cathedral----------	D	Jan-Dec	---	---	---	---	None	---	None
Rubble land----------	A	Jan-Dec	---	---	---	---	None	---	None
49:									
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
50:									
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
Cathedral----------	D	Jan-Dec	---	---	---	---	None	---	None
Resort----------	D	Jan-Dec	---	---	---	---	None	---	None
51:									
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
Resort----------	D	Jan-Dec	---	---	---	---	None	---	None
52:									
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
Rubble land----------	A	Jan-Dec	---	---	---	---	None	---	None
Cathedral----------	D	Jan-Dec	---	---	---	---	None	---	None
53:									
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None
Rubble land----------	A	Jan-Dec	---	---	---	---	None	---	None
Cathedral----------	D	Jan-Dec	---	---	---	---	None	---	None
54:									
Rock outcrop----------	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft.	Ft.	Ft.				
54:									
Tolland	A	Jan-Dec	---	---	---	---	None	---	None
55:									
Rogert	D	Jan-Dec	---	---	---	---	None	---	None
Herbman	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
56:									
Tahana	C	Jan-Dec	---	---	---	---	None	---	None
Legault	D	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
57:									
Tolland	A	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Jan-Dec	---	---	---	---	None	---	None
58:									
Tonahutu	B	Jan-Dec	---	---	---	---	None	---	None
Ohman	B	Jan-Dec	---	---	---	---	None	---	None
59:									
Trag	C	Jan-Dec	---	---	---	---	None	---	None
60:									
Troutdale	C	Jan-Dec	---	---	---	---	None	---	None
Rogert	D	Jan-Dec	---	---	---	---	None	---	None
Kittredge	B	Jan-Dec	---	---	---	---	None	---	None
61:									
Troutdale	C	Jan-Dec	---	---	---	---	None	---	None
Sprucedale	D	Jan-Dec	---	---	---	---	None	---	None

Table 21.--Water features--Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft.	Ft.	Ft.				
62:									
Typic Cryaquents----------	B/D	April	0.0-1.5	>6.0	---	---	None	---	None
		May	0.0-1.5	>6.0	---	---	None	Brief	Frequent
		June	0.0-1.5	>6.0	---	---	None	Brief	Frequent
		July	0.0-1.5	>6.0	---	---	None	Brief	Frequent
		August	0.0-1.5	>6.0	---	---	None	Brief	Frequent
		September	0.0-1.5	>6.0	---	---	None	---	None
Cumulic Cryaquolls--------	B/D								
		April	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
		May	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
		June	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
		July	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
		August	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
63:									
Urban land----------	---	Jan-Dec	---	---	---	---	None	---	None
Breece----------	B	Jan-Dec	---	---	---	---	None	---	None
64:									
Water----------	---	Jan-Dec	---	---	---	---	None	---	None

Table 22.--Soil features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In.			
1:					
Arents	---	---	Low	High	High
Dumps, mine	---	---	None	---	---
2:					
Bendemeere	---	---	Moderate	High	High
Tolland	---	---	Low	Moderate	Moderate
3:					
Breece	---	---	Moderate	Moderate	Low
4:					
Cathedral	Bedrock (lithic)	10-20	Moderate	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
5:					
Cathedral	Bedrock (lithic)	10-20	Moderate	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
6:					
Cumulic Cryaquolls	---	---	High	Moderate	Low
7:					
Gateview	---	---	Moderate	Moderate	Low
Kittredge	---	---	Moderate	Moderate	Low
8:					
Grimstone	Bedrock (paralithic)	20-40	Low	Moderate	Moderate
Bullwark family	Bedrock (paralithic)	20-63	Moderate	Moderate	Moderate
9:					
Grimstone	Bedrock (paralithic)	20-40	Low	Moderate	Moderate
Bullwark family	Bedrock (paralithic)	20-63	Moderate	Moderate	Moderate
10:					
Grimstone	Bedrock (paralithic)	20-40	Low	Moderate	Moderate
Hiwan	Bedrock (lithic)	7-20	Low	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
11:					
Grimstone	Bedrock (paralithic)	20-40	Low	Moderate	Moderate
Peeler	---	---	Moderate	High	High
Rock outcrop	Bedrock (lithic)	0-0	None	---	---

Table 22.--Soil features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In.			
11:					
Grimstone	Bedrock (paralithic)	20-40	Low	Moderate	Moderate
Peeler	---	---	Moderate	High	High
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
12:					
Herbman	Bedrock (paralithic)	10-20	Low	Moderate	Moderate
13:					
Herbman	Bedrock (paralithic)	10-20	Low	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
14:					
Herbman	Bedrock (paralithic)	10-20	Low	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
15:					
Hiwan	Bedrock (lithic)	7-20	Low	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
Bendemeere	---	---	Moderate	High	High
16:					
Ivywild	Bedrock (paralithic)	20-40	Moderate	High	High
Legault	Bedrock (paralithic)	8-20	Low	Moderate	High
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
17:					
Ivywild	Bedrock (paralithic)	20-40	Moderate	High	High
Mammoth	---	---	Low	Moderate	Low
Legault	Bedrock (paralithic)	8-20	Low	Moderate	High
18:					
Kataka	Bedrock (paralithic)	20-40	Moderate	Moderate	Low
Resort	Bedrock (paralithic)	10-20	Low	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
19:					
Kittredge	---	---	Moderate	Moderate	Low
Guanella	---	---	Moderate	Moderate	Moderate

Table 22.--Soil features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In.			
20:					
Kittredge	---	---	Moderate	Moderate	Low
Guanella	---	---	Moderate	Moderate	Moderate
21:					
Legault	Bedrock (paralithic)	8-20	Low	Moderate	High
22:					
Legault	Bedrock (paralithic)	8-20	Low	Moderate	High
23:					
Legault	Bedrock (paralithic)	8-20	Low	Moderate	High
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
24:					
Lininger	Bedrock (paralithic)	20-40	Moderate	Low	Low
Breece	---	---	Moderate	Moderate	Low
25:					
Lininger	Bedrock (paralithic)	20-40	Moderate	Low	Low
Resort	Bedrock (paralithic)	10-20	Low	Moderate	Low
26:					
Lininger	Bedrock (paralithic)	20-40	Moderate	Low	Low
Trag	---	---	Moderate	Moderate	Low
27:					
Lone Rock	---	---	Low	Moderate	Low
Breece	---	---	Moderate	Moderate	Low
28:					
Lone Rock	---	---	Low	Moderate	Low
Breece	---	---	Moderate	Moderate	Low
30:					
Mammoth	---	---	Low	Moderate	Low
Ohman	Bedrock (paralithic)	20-40	Low	High	High
Bendemeere	---	---	Moderate	High	High
31:					
Mammoth	---	---	Low	Moderate	Low
Ohman	Bedrock (paralithic)	20-40	Low	High	High
Bendemeere	---	---	Moderate	High	High

Table 22.--Soil features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In.			
32:					
Mammoth	---	---	Low	Moderate	Low
Ohman	Bedrock (paralithic)	20-40	Low	High	High
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
33:					
Ohman	Bedrock (paralithic)	20-40	Low	High	High
Ivywild	Bedrock (paralithic)	20-40	Moderate	High	High
34:					
Ohman	Bedrock (paralithic)	20-40	Low	High	High
Legault	Bedrock (paralithic)	8-20	Low	Moderate	High
35:					
Ohman	Bedrock (paralithic)	20-40	Low	High	High
Legault	Bedrock (paralithic)	8-20	Low	Moderate	High
36:					
Pettingell	---	---	Moderate	Moderate	Moderate
Rogert	Bedrock (lithic)	8-20	Low	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
37:					
Raleigh	Bedrock (paralithic)	10-20	Low	Moderate	Low
38:					
Raleigh	Bedrock (paralithic)	10-20	Low	Moderate	Low
39:					
Raleigh	Bedrock (paralithic)	10-20	Low	Moderate	Low
40:					
Raleigh	Bedrock (paralithic)	10-20	Low	Moderate	Low
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
41:					
Redfeather	Bedrock (lithic)	10-20	Moderate	Moderate	Low
Legault	Bedrock (paralithic)	8-20	Low	Moderate	Moderate
42:					
Redfeather	Bedrock (lithic)	10-20	Moderate	Moderate	Low

Table 22.--Soil features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In.			
42:					
Legault	Bedrock (paralithic)	8-20	Low	Moderate	Moderate
Tolvar	---	---	Moderate	Moderate	Moderate
43:					
Resort	Bedrock (paralithic)	10-20	Low	Moderate	Low
44:					
Resort	Bedrock (paralithic)	10-20	Low	Moderate	Low
45:					
Resort	Bedrock (paralithic)	7-20	Low	Moderate	Low
46:					
Resort	Bedrock (paralithic)	7-20	Low	Moderate	Low
47:					
Resort	Bedrock (paralithic)	10-20	Low	Moderate	Low
Cathedral	Bedrock (lithic)	10-20	Moderate	Moderate	Moderate
48:					
Resort	Bedrock (paralithic)	10-20	Low	Moderate	Low
Cathedral	Bedrock (lithic)	10-20	Moderate	Moderate	Moderate
Rubble land	Bedrock (lithic)	20-80	None	---	---
49:					
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
50:					
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
Cathedral	Bedrock (lithic)	10-20	Moderate	Moderate	Moderate
Resort	Bedrock (paralithic)	10-20	Low	Moderate	Low
51:					
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
Resort	Bedrock (paralithic)	7-20	Low	Moderate	Low
52:					
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
Rubble land	Bedrock (lithic)	20-80	None	---	---
Cathedral	Bedrock (lithic)	10-20	Moderate	Moderate	Moderate
53:					
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
Rubble land	Bedrock (lithic)	20-80	None	---	---

Table 22.--Soil features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In.			
53:					
Cathedral	Bedrock (lithic)	10-20	Moderate	Moderate	Moderate
54:					
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
Tolland	---	---	Low	Moderate	Moderate
55:					
Rogert	Bedrock (lithic)	8-20	Low	Moderate	Low
Herbman	Bedrock (paralithic)	10-20	Low	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
56:					
Tahana	Bedrock (paralithic)	20-40	Low	Moderate	Low
Legault	Bedrock (paralithic)	8-20	Low	Moderate	High
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
57:					
Tolland	---	---	Low	Moderate	Moderate
Rock outcrop	Bedrock (lithic)	0-0	None	---	---
58:					
Tonahutu	Bedrock (paralithic)	40-60	Moderate	High	High
Ohman	Bedrock (paralithic)	20-40	Low	High	High
59:					
Trag	---	---	Moderate	Moderate	Low
60:					
Troutdale	Bedrock (paralithic)	20-40	Moderate	Moderate	Low
Rogert	Bedrock (lithic)	8-20	Low	Moderate	Low
Kittredge	---	---	Moderate	Moderate	Low
61:					
Troutdale	Bedrock (paralithic)	20-40	Moderate	Moderate	Low
Sprucedale	Bedrock (paralithic)	10-20	Low	Moderate	Low
62:					
Typic Cryaquents	---	---	High	High	Low
Cumulic Cryaquolls	---	---	High	Moderate	Low
63:					
Urban land	---	---	None	---	---
Breece	---	---	Moderate	Moderate	Low

Table 22.--Soil features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In.			
64:					
Water	---	---	---	---	---

Table 23.--Classification of the soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Arents	Arents
Bendemeere	Loamy-skeletal, paramicaceous Lamellic Haplocryalfs
Breece	Coarse-loamy, mixed, superactive, frigid Pachic Haplustolls
Bullwark family	Loamy-skeletal, paramicaceous Lamellic Eutrocryepts
Cathedral	Loamy-skeletal, paramicaceous, frigid Lithic Haplustolls
Cumulic Cryaquolls	Cumulic Cryaquolls
*Gateview	Loamy-skeletal, paramicaceous Pachic Haplocryolls
Grimstone	Fine-loamy, paramicaceous Ustic Glossocryalfs
Guanella	Coarse-loamy, paramicaceous Pachic Haplocryolls
Herbman	Loamy-skeletal, paramicaceous, shallow Ustic Haplocryolls
*Herbman	Sandy-skeletal, paramicaceous, shallow Ustic Haplocryolls
Hiwan	Sandy-skeletal, paramicaceous Lithic Cryorthents
Ivywild	Loamy-skeletal, paramicaceous Ustic Dystrocryepts
Kataka	Loamy-skeletal, paramicaceous, frigid Typic Argiustolls
Kittredge	Fine-loamy, paramicaceous Ustic Argicryolls
Legault	Sandy-skeletal, paramicaceous, shallow Typic Cryorthents
Lininger	Fine-loamy, paramicaceous, frigid Typic Argiustolls
Lone Rock	Sandy-skeletal, mixed, frigid Typic Haplustolls
Mammoth	Loamy-skeletal, paramicaceous Lamellic Dystrocryepts
Ohman	Loamy-skeletal, paramicaceous Lamellic Dystrocryepts
Peeler	Fine-loamy, mixed, superactive Ustic Glossocryalfs
Pettingell	Loamy-skeletal, paramicaceous Ustic Haplocryolls
Raleigh	Loamy-skeletal, paramicaceous, shallow Ustic Haplocryolls
*Redfeather	Loamy-skeletal, paramicaceous Lithic Glossocryalfs
Resort	Sandy-skeletal, paramicaceous, frigid, shallow Entic Haplustolls
Rogert	Loamy-skeletal, mixed, superactive Lithic Haplocryolls
*Rogert	Loamy-skeletal, paramicaceous Lithic Haplocryolls
Sprucedale	Loamy, paramicaceous, shallow Ustic Argicryolls
Tahana	Sandy-skeletal, paramicaceous Ustic Eutrocryepts
Tolland	Sandy-skeletal, paramicaceous Ustic Eutrocryepts
Tolvar	Loamy-skeletal, mixed, superactive Ustollic Glossocryalfs
*Tonahutu	Loamy-skeletal, paramicaceous Lamellic Haplocryalfs
Trag	Fine-loamy, mixed, superactive, frigid Typic Argiustolls
Troutdale	Fine-loamy, paramicaceous Ustic Argicryolls
Typic Cryaquents	Typic Cryaquents

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