United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Virginia Polytechnic Institute and State University

Soil Survey of Tazewell County, Virginia

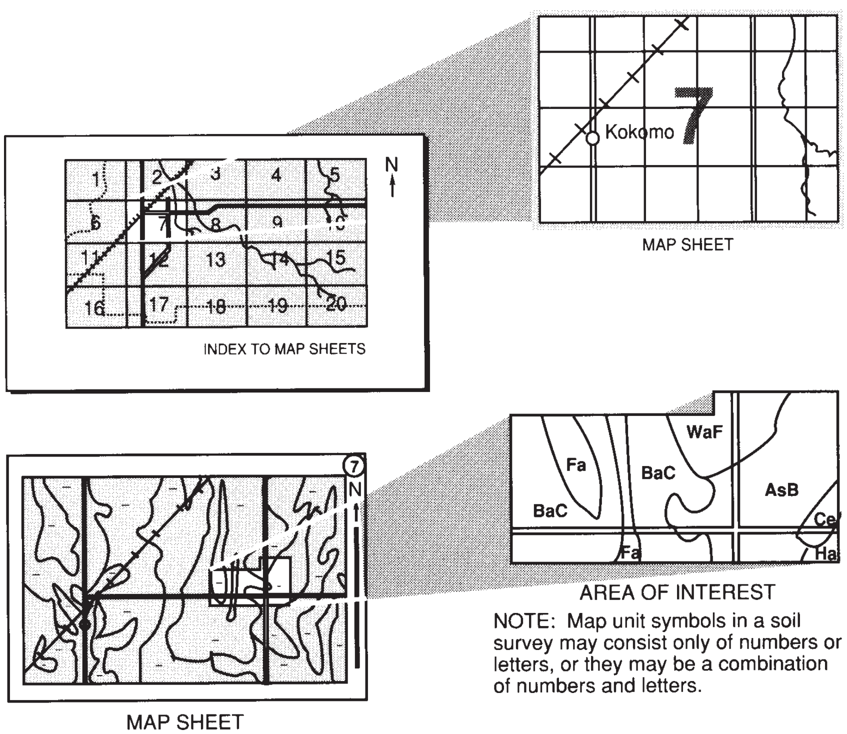
How To Use This Soil Survey

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 go to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Go 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 1995. Soil names and descriptions were approved in 1996. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1996. The most current official data are available at http://websoilsurvey.nrcs.usda.gov/app/. This survey was made cooperatively by the Natural Resources Conservation Service and the Virginia Polytechnic Institute and State University. Financial assistance was provided by the Virginia Department of Conservation and Recreation and the Tazewell County Board of Supervisors. The survey is part of the technical assistance furnished to the Tazewell Soil and Water Conservation District.

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

Cover: A cultivated field and a hayfield in an area of Murrill silt loam, 7 to 15 percent slopes.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at http://www.nrcs.usda.gov.

Contents

Issued 2009

Foreword

This soil survey contains information that affects land use planning in Tazewell County. It includes predictions of soil behavior for selected land uses. The survey 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, foresters, and agronomists can use the survey 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 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. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. 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.

John A. Bricker
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Tazewell County, Virginia

By David F. Wagner, Natural Resources Conservation Service

Fieldwork by David F. Wagner, Eddie L. Childers, Michael K. Schramm,
Thomas D. Adkins, Timothy Anders, and Robert R. Dobos, Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
Virginia Polytechnic Institute and State University

TAZEWELL COUNTY is in the southwestern part of Virginia, about 85 miles southwest of Roanoke (fig. 1). The county consists of 325,100 acres. According to the 2000 census, the population of Tazewell County is 44,598 *(19)*. Tazewell County was formed in 1799 from the Wythe and Russell Territories and was named for Senator Henry Tazewell.

The soils in the county formed in material weathered from shale, limestone, dolomite, siltstone, sandstone, or coal beds. The soils, except those on the steeper ridges and mountain slopes, are suited to various farm and nonfarm uses. Woodland makes up about 60 percent of the county. Woodland is mainly on moderately steep to very steep slopes.

The main sources of agricultural income are cattle, sheep, and dairies. Pigs and hogs are raised on a smaller scale, mostly for the production of feeder pigs. Pasture covers about 20 percent of the land area. Hay from grasses, legumes, and small grain is grown for winter feed on about 13,000 acres. Corn is grown for local feed. Burley tobacco is grown as a cash crop. Oak, yellow-poplar, and maple are also harvested. Roof-support material for the coal-mining industry is produced from oak trees in the county.

Coal mining and the production of mining equipment and supplies are important industries in Tazewell County. These industries employ more than 50 percent of the workforce in the county. Construction, electronics, communications, contract sewing, carbonated beverages, asphalt, and quarrying are also important.

The main highways in Tazewell County are Highways US-19 and US-460, which run from Bluefield through Tazewell, north through Richland, and southwest toward Bristol. Highway VA-16 runs north into West Virginia and south into North Carolina. Highway VA-61 connects Tazewell County with Rocky Gap to the west. Interstate 77, Interstate 81, and the West Virginia Turnpike run close to the county.

Tazewell County is ranked eighth in tourism in Virginia. It offers natural beauty, recreation, and historic sites. The Historic Crab Orchard Museum and Pioneer Park, the Jefferson National Forest, and the Clinch Valley Wildlife Preserve are popular tourist sites.

This soil survey updates the previous soil survey of Tazewell County, which was

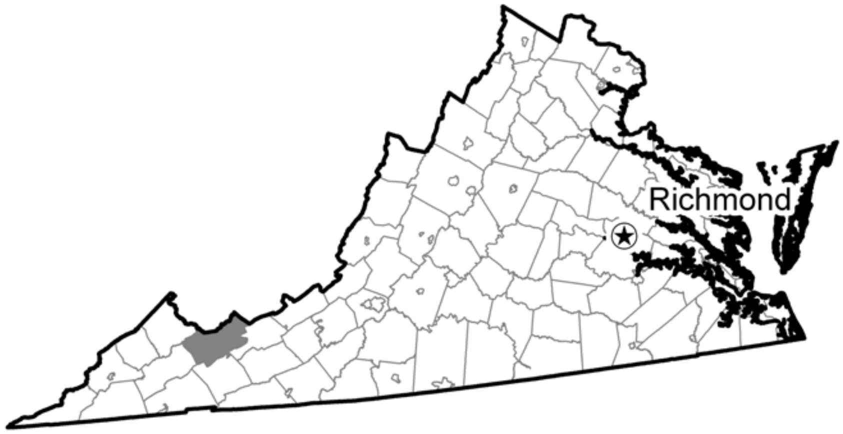


Figure 1.—Location of Tazewell County in Virginia.

published in 1948 *(11)*. It provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the Survey Area

This section provides general information about the survey area. It describes and physiography, relief, and drainage and climate.

Physiography, Relief, and Drainage

Tazewell County lies within the Appalachian Highlands. It is in the Valley and Ridge province and in the Appalachian Plateaus, Cumberland Plateau, and Cumberland Mountain section.

The Valley and Ridge province includes the central and southern parts of the county. It runs roughly southwest to northeast and covers about two-thirds of the land area. It has long valleys of varying widths that separate long, parallel, steep-sided ridges. In the valleys the soils are mainly moderately deep or deep. They are underlain by shale, siltstone, limestone, and dolomite. On the mountains, the soils are shallow to deep. They are underlain by shale, siltstone, and sandstone. Colluvium is common on side slopes and footslopes of mountains (fig. 2). Alluvium on flood plains and terraces is common along Laurel Creek, Mud Fork Creek, Maiden Spring Creek, and the Clinch River and its tributaries.

The Appalachian Plateaus, Cumberland Plateau, and Cumberland Mountain section includes the northwestern part of the county. It covers about one-third of the land area. It consists of hollows that separate random, steep-sided ridges. It formed on a weathered, eroded, ancient plateau. The soils are shallow to deep. They are underlain by shale, sandstone, and coal beds. A large acreage consists of strip mines and deep mines.

The highest point in the county, 4,710 feet, is on Beartown Ridge in the southeastern part of the county. The lowest elevation, 1,913 feet, is on the flood plain of the Clinch River near Raven, in the western part of the county.

The headwaters of several large streams are located in Tazewell County. Watersheds flow east into the New River, north into the Big Sandy River, west into the Clinch River, and south into the Holston River. The forks of the Clinch

Figure 2.—A typical mountain landscape on Murrill soils is in the foreground. An area of Bland and Carbo soils is above the fence. Oriskany soils are in the drainageways. Westmoreland, Poplimento, and Berks soils are on the steep nose slopes. Calvin and Wallen soils are on the main ridge of Clinch Mountain.

River, which run nearly the length of Tazewell County, begin near Tiptop and Gratton.

Surface drainage in the county is most rapid on convex-shaped upland hills and mountains and somewhat less rapid on upland flats and flood plains and on footslopes of uplands.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Burkes Garden, Virginia, in the period 1971 to 2000. 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.

In winter, the average temperature is 31.7 degrees F and the average daily minimum temperature is 21.8 degrees. The lowest temperature on record, which occurred at Burkes Garden on January 27, 1987, is -26 degrees. In summer, the average temperature is 65.9 degrees and the average daily maximum temperature is 77.2 degrees. The highest temperature, which occurred at Burkes Garden on July 16, 1954, is 96 degrees.

Growing degree days are shown in table 1. 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.

The average annual total precipitation is 45.71 inches. Of this, 21.04 inches, or about 46 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 4.56 inches, recorded at Burkes Garden on January 15, 1995. Thunderstorms occur on about 37 days each year, and most occur in June.

The average seasonal snowfall is 52.5 inches. The greatest snow depth at any one time during the period of record was 21 inches, recorded on January 28, 1998. On an average, 37 days per year have at least 1 inch of snow on the ground.

The average relative humidity in mid-afternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 61 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the northwest. Average windspeed is highest, 8.2 miles per hour, in March.

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 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, Frederick silt loam, 2 to 7 percent slopes, is a phase of the Frederick series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes. 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. Berks-Weikert complex, 35 to 55 percent slopes, is an example.

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

Table 4 lists the map units in this survey area. 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.

1A—Allegheny loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Stream terraces
Position on the landform: Toeslopes, treads, and risers
Size of areas: 5 to 75 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Allegheny and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown loam

Subsoil:
5 to 11 inches—brown fine sandy loam
11 to 24 inches—brown sandy clay loam
24 to 32 inches—brown gravelly sandy clay loam
32 to 48 inches—strong brown very gravelly sandy loam

Substratum:
48 to 61 inches—strong brown very gravelly sandy loam

Minor Components

Dissimilar components:
- Areas of Pope soils, which are well drained and subject to flooding; on the lower parts of the landscape
- Areas of well drained, fine-loamy soils that are subject to flooding; on the lower parts of the landscape

Similar components:
- Areas of well drained, coarse-loamy soils; in landscape positions similar to those of the Allegheny soil

Soil Properties and Qualities

Available water capacity: Moderate (about 6.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)

Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from sandstone, shale, and limestone

Use and Management Considerations

Cropland

This soil is well suited to corn, grass-legume hay, and alfalfa hay.

Pastureland

- This soil is well suited to pastureland.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- This soil is well suited to building site development.

Septic tank absorption fields

- Because of the excessive permeability, the proper treatment of the effluent from conventional septic systems is limited and the water table may become polluted.
- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: L
Hydric soil: No

1B—Allegheny loam, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Stream terraces
Position on the landform: Toeslopes, treads, and risers
Size of areas: 5 to 50 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Allegheny and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown loam

Subsoil:
5 to 11 inches—brown fine sandy loam
11 to 24 inches—brown sandy clay loam
24 to 32 inches—brown gravelly sandy clay loam
32 to 48 inches—strong brown very gravelly sandy loam

Substratum:
48 to 61 inches—strong brown very gravelly sandy loam

Minor Components

Dissimilar components:
- Areas of Pope soils, which are coarse-loamy and subject to flooding; on the lower parts of the landscape
- Areas of well drained, fine-loamy soils that are subject to flooding; on the lower parts of the landscape

Similar components:
- Areas of Allegheny soils on 7 to 15 percent slopes
- Areas of well drained, coarse-loamy soils; in landscape positions similar to those of the Allegheny soil

Soil Properties and Qualities

Available water capacity: Moderate (about 6.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from sandstone, shale, and limestone

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- This soil is well suited to building site development.

Septic tank absorption fields

- Because of the excessive permeability, the proper treatment of the effluent from conventional septic systems is limited and the water table may become polluted.
- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Frost action may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: L
Hydric soil: No

2C—Alticrest fine sandy loam, 7 to 15 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 60 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Alticrest and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 3 inches—brown fine sandy loam

Subsoil:
3 to 35 inches—yellowish brown sandy loam

Hard bedrock:
35 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Gilpin soils, which are well drained and have more silt and less sand than the Alticrest soil; in the same landscape positions

- Areas of Grimsley soils, which are well drained, have more rock fragments than the Alticrest soil, and are deeper to bedrock; in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 3.9 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: FF
Hydric soil: No

2D—Alticrest fine sandy loam, 15 to 25 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 60 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Alticrest and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 3 inches—brown fine sandy loam

Subsoil:
3 to 35 inches—yellowish brown sandy loam

Hard bedrock:
35 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Gilpin soils, which are well drained and have more silt and less sand than the Alticrest soil; in similar landscape positions
- Areas of Grimsley soils, which are well drained, are deeper to bedrock than the Alticrest soil, and have more rock fragments; in drainageways
- Areas of soils that have bedrock at a depth of more than 40 inches and that have more clay than the Alticrest soil
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Lily soils, which have more clay than the Alticrest soil; in similar landscape positions
- Areas of residual, shale soils that are 10 to 20 inches deep to bedrock; in landscape positions similar to those of the Alticrest soil
- Areas of residual soils that are 40 to 60 inches deep to bedrock; in landscape positions similar to those of the Alticrest soil

Soil Properties and Qualities

Available water capacity: Low (about 3.9 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: FF
Hydric soil: No

2E—Alticrest fine sandy loam, 25 to 40 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 150 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Alticrest and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 3 inches—brown fine sandy loam

Subsoil:
3 to 35 inches—yellowish brown sandy loam

Hard bedrock:
35 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Gilpin soils, which formed in residuum derived from shale and have more silt and less sand than the Alticrest soil; in similar landscape positions
- Areas of Grimsley soils, which are colluvial, are 40 to 60 inches deep to bedrock, and have more rock fragments than the Alticrest soil; in drainageways

- Areas of moderately well drained soils that are more than 40 inches deep to bedrock; in swales
- Areas of residual, shale soils that have bedrock at a depth of 10 to 20 inches; in landscape positions similar to those of the Alticrest soil
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Berks soils, which formed in residuum derived from shale and have more shale fragments than the Alticrest soil; in similar landscape positions
- Areas of Lily soils, which have more clay than the Alticrest soil; in similar landscape positions
- Areas of Wallen soils, which have more rock fragments than the Alticrest soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 3.9 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: FF
Hydric soil: No

3C—Berks-Weikert complex, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits and shoulders
Size of areas: 5 to 50 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Berks and similar soils: Typically 50 percent, ranging from about 45 to 55 percent
Weikert and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Weikert

Organic layer:
3 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 7 inches—yellowish brown channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam
12 to 17 inches—yellowish brown extremely channery silt loam

Substratum:
17 to 19 inches—yellowish brown extremely channery silt loam

Hard bedrock:
19 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and have sandstone fragments; in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock, have more clay and fewer rock fragments than the Berks and Weikert soils, and are intermingled in with the Berks and Weikert soils on the landscape, especially in saddles

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.5 inches); Weikert—very low (about 1.5 inches)
Slowest saturated hydraulic conductivity: Berks—moderately high (about 0.57 in/hr); Weikert—high (about 1.98 in/hr)
Depth class: Berks—moderately deep (20 to 40 inches); Weikert—shallow (10 to 20 inches)
Depth to root-restrictive feature: Berks—20 to 40 inches to bedrock (lithic); Weikert—14 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Berks—4s; Weikert—6s
Virginia soil management group: JJ
Hydric soils: No

3D—Berks-Weikert complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 50 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Berks and similar soils: Typically 50 percent, ranging from about 45 to 55 percent
Weikert and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Weikert

Organic layer:
3 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 7 inches—yellowish brown channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam
12 to 17 inches—yellowish brown extremely channery silt loam

Substratum:
17 to 19 inches—yellowish brown extremely channery silt loam

Hard bedrock:
19 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and colluvial and have sandstone fragments; in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock, have more clay and fewer rock fragments than the Berks and Weikert soils, and are intermingled with the Berks and Weikert soils on the landscape, especially in saddles

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.5 inches); Weikert—very low (about 1.5 inches)
Slowest saturated hydraulic conductivity: Berks—moderately high (about 0.57 in/hr); Weikert—high (about 1.98 in/hr)
Depth class: Berks—moderately deep (20 to 40 inches); Weikert—shallow (10 to 20 inches)

Depth to root-restrictive feature: Berks—20 to 40 inches to bedrock (lithic); Weikert—14 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: JJ
Hydric soils: No

3E—Berks-Weikert complex, 35 to 55 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 10 to 3,000 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Berks and similar soils: Typically 55 percent, ranging from about 50 to 65 percent
Weikert and similar soils: Typically 35 percent, ranging from about 25 to 40 percent

Typical Profile

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Weikert

Organic layer:
3 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 7 inches—yellowish brown channery silt loam

Subsoil:
7 to 12 inches—yellowish brown very channery silt loam
12 to 17 inches—yellowish brown extremely channery silt loam

Substratum:
17 to 19 inches—yellowish brown extremely channery silt loam

Hard bedrock:
19 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and colluvial and have sandstone fragments; in drainageways
- Areas of Wallen soils, which formed in sandstone and have sandstone fragments; on the higher parts of the landscape
- Areas of soils that are less than 10 inches deep to bedrock; scattered throughout the map unit
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that have fewer shale fragments throughout the profile than the Berks and Weikert soils
- Areas of soils that are 40 to 60 inches deep to bedrock, have more clay and fewer rock fragments than the Berks and Weikert soils, and are intermingled with the Berks and Weikert soils on the landscape, especially in saddles

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.5 inches); Weikert—very low (about 1.5 inches)
Slowest saturated hydraulic conductivity: Berks—moderately high (about 0.57 in/hr); Weikert—high (about 1.98 in/hr)
Depth class: Berks—moderately deep (20 to 40 inches); Weikert—shallow (10 to 20 inches)
Depth to root-restrictive feature: Berks—20 to 40 inches to bedrock (lithic); Weikert—14 to 20 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber

harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soils: No

4E—Berks-Gilpin complex, 25 to 35 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 75 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Berks and similar soils: Typically 45 percent, ranging from about 35 to 60 percent
Gilpin and similar soils: Typically 40 percent, ranging from about 30 to 55 percent

Typical Profile

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Gilpin

Organic layer:
2 inches to 0—undecomposed hardwood leaf litter and twigs

Surface layer:
0 to 2 inches—brown silt loam

Subsoil:
2 to 6 inches—yellowish brown silt loam
6 to 30 inches—strong brown silty clay loam

Substratum:
30 to 35 inches—yellowish brown extremely channery silt loam

Hard bedrock:
35 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Cedarcreek soils, which are very deep; in mined areas
- Areas of Grimsley soils, which are deep and colluvial and have sandstone fragments; in drainageways and on the lower footslopes
- Areas of soils that are less than 20 inches deep to bedrock and that have more sand than the Berks and Gilpin soils; scattered throughout the map unit
- Areas of soils that are more than 40 inches deep to bedrock and have more sand than the Berks and Gilpin soils; scattered throughout the map unit
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Alticrest soils, which formed in residuum derived from sandstone and have more sand, less silt, and fewer rock fragments than the Berks soil
- Areas of Lily soils, which formed in residuum derived from sandstone and have more sand and less silt than the Gilpin soil
- Areas of Wallen soils, which formed in residuum derived from sandstone, have sandstone fragments, and have more sand than the Berks soil
- Areas of soils that are 40 to 60 inches deep to bedrock and have shale fragments; scattered throughout the map unit, especially in saddles and on summits

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.5 inches); Gilpin—low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Berks—residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone; Gilpin—residuum weathered from noncalcareous shale

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: Berks—JJ; Gilpin—U
Hydric soils: No

4F—Berks-Gilpin complex, 35 to 70 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 300 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Berks and similar soils: Typically 65 percent, ranging from about 55 to 75 percent
Gilpin and similar soils: Typically 30 percent, ranging from about 25 to 40 percent

Typical Profile

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Gilpin

Organic layer:
2 inches to 0—undecomposed hardwood leaf litter and twigs

Surface layer:
0 to 2 inches—brown silt loam

Subsoil:
2 to 6 inches—yellowish brown silt loam
6 to 30 inches—strong brown silty clay loam

Substratum:
30 to 35 inches—yellowish brown extremely channery silt loam

Hard bedrock:
35 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Cedarcreek soils, which are very deep; in mined areas
- Areas of Grimsley soils, which are deep and colluvial and have sandstone fragments; in drainageways and on the lower footslopes
- Areas of soils that are less than 20 inches deep to bedrock and that have more sand than the Berks and Gilpin soils; scattered throughout the map unit
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Alticrest soils, which formed in residuum derived from sandstone and have more sand, less silt, and fewer rock fragments than the Berks soil
- Areas of Lily soils that formed in residuum derived from sandstone and that have more sand and less silt than the Gilpin soil
- Areas of Wallen soils that formed in residuum derived from sandstone, that have sandstone fragments, and that have more sand than the Berks soil
- Areas of soils that are 40 to 60 inches deep to bedrock and that have shale fragments; scattered throughout the map unit, especially in saddles and on summits
- Areas of soils that are 10 to 20 inches deep to bedrock and have shale fragments; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Berks—very low (about 2.5 inches); Gilpin—low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Berks—residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone; Gilpin—residuum weathered from noncalcareous shale

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Berks—JJ; Gilpin—U
Hydric soils: No

5D—Bland-Rock outcrop complex, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs

Position on the landform: Summits, shoulders, and backslopes on hills and footslopes on spurs
Size of areas: 5 to 150 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Bland and similar soils: Typically 80 percent, ranging from about 75 to 85 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Bland

Surface layer:
0 to 4 inches—reddish gray silty clay loam

Subsoil:
4 to 18 inches—reddish brown silty clay
18 to 30 inches—weak red silty clay; few yellowish red mottles

Substratum:
30 to 36 inches—dusky red channery clay

Hard bedrock:
36 inches—dusky red argillaceous limestone bedrock

Rock outcrop

This part of the map unit consists of exposures of hard reddish limestone ranging from from a few inches to about 3 feet in height.

Minor Components

Dissimilar components:
- Areas of Berks soils, which formed in shale and have less clay and more rock fragments than the Bland soil; in landscape positions higher than those of the Bland soil
- Areas of Poplimento soils, which are very deep and formed in shale; in landscape positions higher than those of the Bland soil
- Areas of Westmoreland soils, which are moderately deep, formed in shale, and have less clay than the Bland soil; in landscape positions higher than those of the Bland soil
- Areas of poorly drained soils in narrow drainageways

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit

Properties and Qualities of the Bland Soil

Available water capacity: Low (about 4.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate

Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Bland—7s; Rock outcrop—8s
Virginia soil management group: Bland—Y; Rock outcrop—none assigned
Hydric soils: No

5E—Bland-Rock outcrop complex, 25 to 50 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes on hills and footslopes on spurs
Size of areas: 5 to 200 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Bland and similar soils: Typically 80 percent, ranging from about 75 to 85 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Bland

Surface layer:
0 to 4 inches—reddish gray silty clay loam

Subsoil:
4 to 18 inches—reddish brown silty clay
18 to 30 inches—weak red silty clay; few yellowish red mottles

Substratum:
30 to 36 inches—dusky red channery clay

Hard bedrock:
36 inches—dusky red argillaceous limestone bedrock

Rock outcrop

This part of the map unit consists of exposures of hard reddish limestone ranging from a few inches to about 3 feet in height.

Minor Components

Dissimilar components:
- Areas of Berks soils, which formed in shale and have less clay and more rock fragments than the Bland soil; in landscape positions higher than those of the Bland soil
- Areas of Poplimento soils, which are very deep and formed in shale; in landscape positions higher than those of the Bland soil
- Areas of Westmoreland soils, which are moderately deep, formed in shale, and have less clay than the Bland soil; in landscape positions higher than those of the Bland soil
- Areas of poorly drained soils in narrow drainageways

Similar components:
- Areas of soils that are more than 40 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are less than 20 inches deep to bedrock; scattered throughout the map unit

Properties and Qualities of the Bland Soil

Available water capacity: Low (about 4.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Bland—7s; Rock outcrop—8s
Virginia soil management group: Bland—Y; Rock outcrop—none assigned
Hydric soils: No

6B—Bland silty clay loam, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits and shoulders on hills and footslopes on spurs
Size of areas: 5 to 40 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Bland and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 4 inches—reddish gray silty clay loam

Subsoil:
4 to 18 inches—reddish brown silty clay
18 to 30 inches—weak red silty clay; few yellowish red mottles

Substratum:
30 to 36 inches—dusky red channery clay

Hard bedrock:
36 inches—dusky red argillaceous limestone bedrock

Minor Components

Dissimilar components:
- Areas of rock outcrops that are scattered throughout the map unit
- Areas of poorly drained soils in narrow drainageways

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock and that are intermingled with the Bland soil on the landscape
- Areas of soils that are 10 to 20 inches deep to bedrock and that are intermingled with the Bland soil on the landscape

Soil Properties and Qualities

Available water capacity: Low (about 4.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock and high clay content restrict the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 2e
Virginia soil management group: Y
Hydric soil: No

6C—Bland silty clay loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits and shoulders on hills and footslopes on spurs
Size of areas: 5 to 50 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Bland and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 4 inches—reddish gray silty clay loam

Subsoil:
4 to 18 inches—reddish brown silty clay
18 to 30 inches—weak red silty clay; few yellowish red mottles

Substratum:
30 to 36 inches—dusky red channery clay

Hard bedrock:
36 inches—dusky red argillaceous limestone bedrock

Minor Components

Dissimilar components:
- Areas of rock outcrop that are scattered throughout the map unit
- Areas of poorly drained soils in narrow drainageways

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock and that are intermingled with the Bland soil on the landscape
- Areas of soils that are 10 to 20 inches deep to bedrock and that are intermingled with the Bland soil on the landscape

Soil Properties and Qualities

Available water capacity: Low (about 4.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock and high clay content restrict the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: Y
Hydric soil: No

6D—Bland silty clay loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes on hills and footslopes on spurs
Size of areas: 5 to 60 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Bland and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 4 inches—reddish gray silty clay loam

Subsoil:
4 to 18 inches—reddish brown silty clay
18 to 30 inches—weak red silty clay; few yellowish red mottles

Substratum:
30 to 36 inches—dusky red channery clay

Hard bedrock:
36 inches—dusky red argillaceous limestone bedrock

Minor Components

Dissimilar components:
- Areas of rock outcrops that are scattered throughout the map unit
- Areas of poorly drained soils in narrow drainageways

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock and that are intermingled with the Bland soil on the landscape
- Areas of soils that are 10 to 20 inches deep to bedrock and that are intermingled with the Bland soil on the landscape

Soil Properties and Qualities

Available water capacity: Low (about 4.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock and high clay content restrict the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.

- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: Y
Hydric soil: No

7C—Botetourt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Stream terraces
Position on the landform: Treads, risers, and toeslopes
Size of areas: 4 acres
Shape of areas: Irregular or short and narrow

Map Unit Composition

Botetourt and similar soils: Typically 95 percent, ranging from about 95 to 100 percent

Typical Profile

Surface layer:
0 to 7 inches—dark yellowish brown loam

Subsoil:
7 to 18 inches—yellowish brown loam

18 to 37 inches—yellowish brown clay loam; gray iron depletions
37 to 48 inches—yellowish brown gravelly loam; light gray iron depletions

Substratum:
48 to 62 inches—yellowish brown gravelly loam; light gray iron depletions

Minor Components

Dissimilar components:
- Areas of Wolfgap soils, which are well drained and subject to flooding; on the lower parts of the landscape

Similar components:
- Areas of Coursey soils, which are moderately well drained and have a lower base saturation than the Botetourt soil; in landscape positions similar to those of the Botetourt soil

Soil Properties and Qualities

Available water capacity: High (about 10.5 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from limestone, shale, quartzite, and sandstone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root system of winter grain crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.

- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: G
Hydric soil: No

8D—Brushy gravelly loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes on hills and backslopes on spurs
Size of areas: 3 to 35 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Brushy and similar soils: Typically 75 percent, ranging from about 70 to 80 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown gravelly loam

Subsoil:
4 to 10 inches—dark yellowish brown very gravelly loam
10 to 23 inches—yellowish brown very gravelly loam

Hard bedrock:
23 inches—cherty limestone bedrock

Minor Components

Dissimilar components:
- Areas of Berks soils, which have shale fragments; in landscape positions similar to those of the Brushy soil

- Areas of Murrill soils, which are very deep, have fewer rock fragments than the Brushy soil, and formed in colluvium; in drainageways and on side slopes
- Areas of Oriskany soils, which are very deep and colluvial and have sandstone fragments; in drainageways and on side slopes
- Areas of Weikert soils, which are shallow and formed in residuum derived from shale; in similar landscape positions

Similar components:
- Areas of moderately deep soils that have fewer rock fragments than the Brushy soil; in landscape positions similar to those of the Brushy soil

Soil Properties and Qualities

Available water capacity: Very low (about 2.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from cherty limestone

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.

- Bedrock may interfere with the construction of haul roads and log landings.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: JJ
Hydric soil: No

8E—Brushy gravelly loam, 25 to 60 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes on hills and backslopes on spurs
Size of areas: 5 to 450 acres
Shape of areas: Irregular or long and narrow to broad

Map Unit Composition

Brushy and similar soils: Typically 80 percent, ranging from about 75 to 90 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown gravelly loam

Subsoil:
4 to 10 inches—dark yellowish brown very gravelly loam
10 to 23 inches—yellowish brown very gravelly loam

Hard bedrock:
23 inches—cherty limestone bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and colluvial and have sandstone fragments; in drainageways and on side slopes

- Areas of Wallen soils, which formed in residuum of sandstone and have sandstone fragments; on shoulders and side slopes in landscape positions higher that those of the Brushy soil
- Areas of Lily soils, which formed in residuum of sandstone and have fewer rock fragments than the Brushy soil; on shoulders and side slopes in landscape positions higher than those of the Brushy soil
- Areas of deep soils that have more clay and fewer rock fragments than the Brushy soil; on interfluves
- Areas of outcrops of cherty limestone

Similar components:
- Areas of soils that have fewer rock fragments than the Brushy soil; in similar landscape positions
- Areas of soils that are 10 to 20 inches deep to bedrock; in landscape positions similar to those of the Brushy soil
- Areas of soils that have sandstone channers on the surface

Soil Properties and Qualities

Available water capacity: Very low (about 2.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from cherty limestone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soil: No

9D—Calvin channery silt loam, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 10 to 50 acres
Shape of areas: Irregular or long and broad

Map Unit Composition

Calvin and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—decomposed and undecomposed leaves and twigs

Surface layer:
0 to 8 inches—reddish brown channery silt loam

Subsoil:
8 to 25 inches—reddish brown very channery silt loam

Substratum:
25 to 32 inches—reddish brown extremely channery silt loam

Hard bedrock:
32 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and colluvial, formed in bedrock, and have sandstone fragments; in drainageways

- Areas of Poplimento soils, which are very deep and have more clay and fewer rock fragments than the Calvin soil; in the lower landscape positions
- Areas of Wallen soils, which have more sand and less silt than the Calvin soil and are yellower; in the upper landscape positions
- Areas of Westmoreland soils, which are deep and have more clay and fewer rock fragments than the Calvin soil; in the lower landscape positions
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Berks soils, which are yellower than the Calvin soil; in the lower landscape positions
- Areas of Calvin silt loam that are scattered throughout the map unit
- Areas of Calvin channery silt loam, very stony, in the upper landscape positions
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 3.6 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from acid, red shale interbedded with fine-grained sandstone, mudrock, and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: JJ
Hydric soil: No

9E—Calvin channery silt loam, 35 to 55 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 15 to 600 acres
Shape of areas: Irregular or long and broad

Map Unit Composition

Calvin and similar soils: Typically 85 percent, ranging from about 80 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—decomposed and undecomposed leaves and twigs

Surface layer:
0 to 8 inches—reddish brown channery silt loam

Subsoil:
8 to 25 inches—reddish brown very channery silt loam

Substratum:
25 to 32 inches—reddish brown extremely channery silt loam

Hard bedrock:
32 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and colluvial and have sandstone fragments; in drainageways
- Areas of Poplimento soils, which are very deep and have more clay and fewer rock fragments than the Calvin soil; in the lower landscape positions
- Areas of Wallen soils, which have more sand and less silt than the Calvin soil and are yellower; in the upper landscape positions
- Areas of Westmoreland soils, which are deep and have more clay and fewer rock fragments than the Calvin soil; in the lower landscape positions
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Berks soils, which are yellower than the Calvin soil; in the lower landscape positions
- Areas of Calvin silt loam that are scattered throughout the map unit
- Areas of Calvin channery silt loam, very stony; in the upper landscape positions
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 3.6 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from acid, red shale interbedded with fine-grained sandstone, mudrock, and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soil: No

10D—Calvin channery silt loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 10 to 40 acres
Shape of areas: Irregular or long and broad

Map Unit Composition

Calvin and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—decomposed and undecomposed leaves and twigs

Surface layer:
0 to 8 inches—reddish brown channery silt loam

Subsoil:
8 to 25 inches—reddish brown very channery silt loam

Substratum:
25 to 32 inches—reddish brown extremely channery silt loam

Hard bedrock:
32 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and have sandstone fragments; in drainageways
- Areas of Poplimento soils, which are very deep and have more clay and fewer rock fragments than the Calvin soil; in the lower areas
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Berks soils, which are yellower than the Calvin soil; in the lower landscape positions
- Areas of Calvin silt loam that are scattered throughout the map unit
- Areas of Calvin channery silt loam that are scattered throughout the map unit
- Areas of Wallen soils, which formed in residuum derived from sandstone and have more sand and less silt than the Calvin soil and are yellower; in the higher landscape positions
- Areas of Westmoreland soils, which are deep and have more clay and fewer rock fragments than the Calvin soil; in the lower landscape positions
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 3.6 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Residuum weathered from acid, red shale interbedded with fine-grained sandstone, mudrock, and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: JJ
Hydric soil: No

10E—Calvin channery silt loam, 35 to 55 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 20 to 750 acres
Shape of areas: Irregular or long and broad

Map Unit Composition

Calvin and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—decomposed and undecomposed leaves and twigs

Surface layer:
0 to 8 inches—reddish brown channery silt loam

Subsoil:
8 to 25 inches—reddish brown very channery silt loam

Substratum:
25 to 32 inches—reddish brown extremely channery silt loam

Hard bedrock:
32 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and have sandstone fragments; in drainageways
- Areas of Poplimento soils, which are very deep and have more clay and fewer rock fragments than the Calvin soil; in the lower landscape positions
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Berks soils, which are yellower than the Calvin soil; in the lower landscape positions
- Areas of Calvin silt loam that are scattered throughout the map unit
- Areas of Calvin channery silt loam that are scattered throughout the map unit
- Areas of Wallen soils, which formed in residuum derived from sandstone, have more sand and less silt than the Calvin soil, and are yellower; in the upper landscape positions
- Areas of Westmoreland soils, which are deep and have more clay and fewer rock fragments than the Calvin soil; in the lower landscape positions
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 3.6 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Residuum weathered from acid, red shale interbedded with fine-grained sandstone, mudrock, and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soil: No

11C—Carbo silt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits and shoulders on hills and footslopes on spurs
Size of areas: 5 to 40 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Carbo and similar soils: Typically 85 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—strong brown silty clay loam
12 to 34 inches—strong brown clay

Hard bedrock:
34 inches—limestone bedrock

Minor Components

Dissimilar components:
- Areas of Pisgah and Poplimento soils, which are very deep; scattered throughout the map unit
- Areas of soils, near rock outcrops, that are 10 to 20 inches deep to bedrock
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Carbo soils on slopes of 2 to 7 percent
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock and high clay content restrict the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: Y
Hydric soil: No

11D—Carbo silt loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes on hills and footslopes on spurs
Size of areas: 5 to 65 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Carbo and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—strong brown silty clay loam
12 to 34 inches—strong brown clay

Hard bedrock:
34 inches—limestone bedrock

Minor Components

Dissimilar components:
- Areas of Pisgah and Poplimento soils, which are very deep; scattered throughout the map unit
- Areas of soils, near rock outcrops, that are 10 to 20 inches deep to bedrock
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock and high clay content restrict the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: Y
Hydric soil: No

11E—Carbo silt loam, 25 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs

Position on the landform: Summits, shoulders, and backslopes on hills and backslopes and footslopes on spurs
Size of areas: 5 to 60 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Carbo and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—strong brown silty clay loam
12 to 34 inches—strong brown clay

Hard bedrock:
34 inches—limestone bedrock

Minor Components

Dissimilar components:
- Areas of Pisgah and Poplimento soils, which are very deep; scattered throughout the map unit
- Areas of soils, near rock outcrops, that are 10 to 20 inches deep to bedrock
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: Y
Hydric soil: No

11F—Carbo silt loam, 35 to 65 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs

Position on the landform: Summits, shoulders, and backslopes on hills and backslopes and footslopes on spurs
Size of areas: 5 to 50 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Carbo and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—strong brown silty clay loam
12 to 34 inches—strong brown clay

Hard bedrock:
34 inches—limestone bedrock

Minor Components

Dissimilar components:
- Areas of Pisgah and Poplimento soils, which are very deep; scattered throughout the map unit
- Areas of soils, near rock outcrops, that are 10 to 20 inches deep to bedrock
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber

harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Y
Hydric soil: No

12D—Carbo-Rock outcrop complex, 7 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes on hills and footslopes on spurs
Size of areas: 5 to 100 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Carbo and similar soils: Typically 80 percent, ranging from about 75 to 90 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Carbo

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—strong brown silty clay loam
12 to 34 inches—strong brown clay

Hard bedrock:
34 inches—limestone bedrock

Rock outcrop

This part of the map unit consists of outcrops of hard grayish limestone ranging from a few inches to about 3 feet in height.

Minor Components

Dissimilar components:
- Areas of Frederick soils, which are very deep and are intermingled with the Carbo soil and Rock outcrop on the landscape
- Areas of Murrill soils, which are very deep and colluvial; on the lower landscapes
- Areas of Newbern soils, which are shallow and loamy and are intermingled with the Carbo soil and Rock outcrop on the landscape
- Areas of Oriskany soils, which are very deep and colluvial; in drainageways
- Areas of poorly drained soils in narrow drainageways

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock and that are intermingled with the Carbo soil and Rock outcrop on the landscape
- Areas of soils that are less than 20 inches deep to bedrock and that are intermingled with the Carbo soil and Rock outcrop on the landscape

Properties and Qualities of the Carbo Soil

Available water capacity: Low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Carbo—7s; Rock outcrop—8s
Virginia soil management group: Carbo—Y; Rock outcrop—none assigned
Hydric soils: No

12E—Carbo-Rock outcrop complex, 25 to 65 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes on hills and backslopes and footslopes on spurs
Size of areas: 5 to 500 acres
Shape of areas: Small and irregular to long and broad

Map Unit Composition

Carbo and similar soils: Typically 75 percent, ranging from about 65 to 85 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Carbo

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—strong brown silty clay loam
12 to 34 inches—strong brown clay

Hard bedrock:
34 inches—limestone bedrock

Rock outcrop

This part of the map unit consists of outcrops of hard grayish limestone ranging from a few inches to about 3 feet in height.

Minor Components

Dissimilar components:
- Areas of Frederick soils, which are very deep and are intermingled with the Carbo soil and Rock outcrop on the landscape
- Areas of Newbern soils, which are shallow and loamy and are intermingled with the Carbo soil and Rock outcrop on the landscape
- Areas of Oriskany soils, which are very deep and colluvial; in drainageways
- Areas of poorly drained soils in narrow drainageways

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock and that are intermingled with the Carbo soil and Rock outcrop on the landscape
- Areas of soils that are less than 20 inches deep to bedrock and that are intermingled with the Carbo soil and Rock outcrop on the landscape

Properties and Qualities of the Carbo Soil

Available water capacity: Low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None

Ponding hazard: None
Shrink-swell potential: High
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

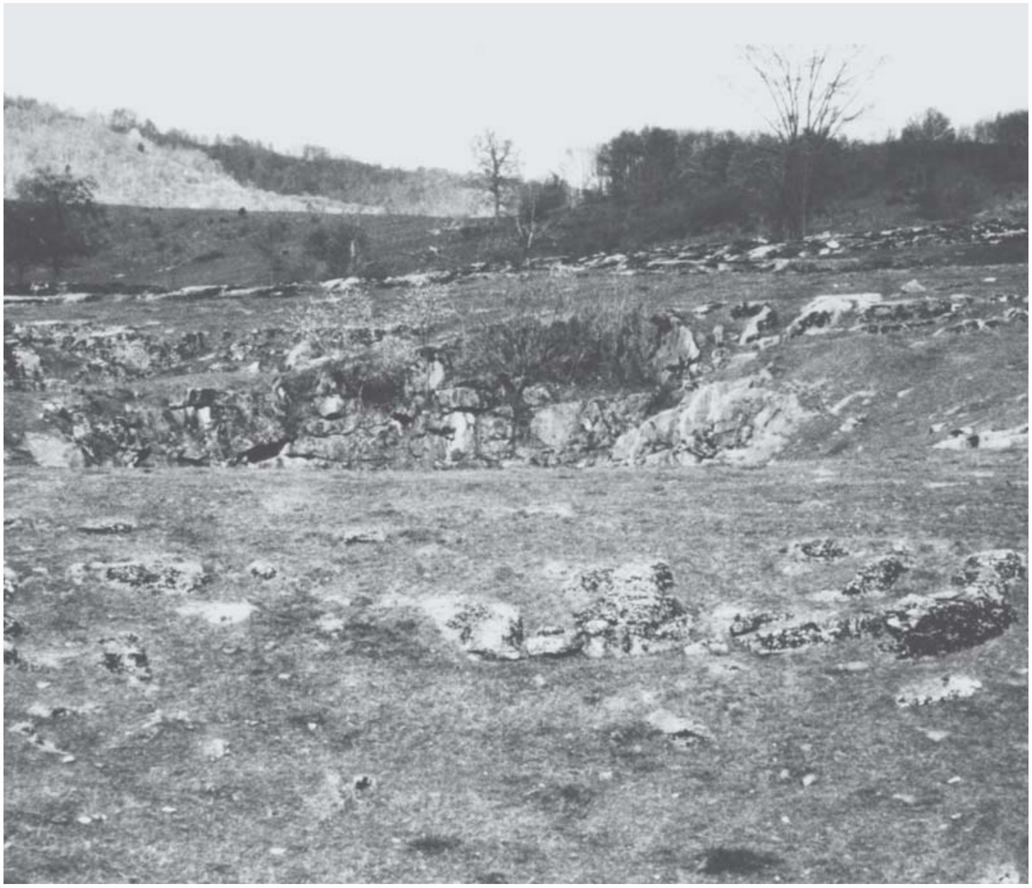


Figure 3.—Pasture in an area of Carbo-Rock outcrop complex, karst, 7 to 65 percent slopes.

- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Carbo—7s; Rock outcrop—8s
Virginia soil management group: Carbo—Y; Rock outcrop—none assigned
Hydric soils: No

13E—Carbo-Rock outcrop complex, karst, 7 to 65 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs in karst areas
Position on the landform: Summits, shoulders, and backslopes on hills and backslopes and footslopes on spurs (fig. 3)
Size of areas: 5 to 300 acres
Shape of areas: Small and irregular to long and broad

Note: Areas of this map unit have karst topography; many topographic depressions, such as sinkholes, and a few caves occur

Map Unit Composition

Carbo and similar soils: Typically 65 percent, ranging from about 60 to 70 percent
Rock outcrop: Typically 20 percent, ranging from about 15 to 25 percent

Typical Profile

Carbo

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 12 inches—strong brown silty clay loam
12 to 34 inches—strong brown clay

Hard bedrock:
34 inches—limestone bedrock

Rock outcrop

This part of the map unit consists of outcrops of hard grayish limestone ranging from a few inches to about 3 feet in height.

Minor Components

Dissimilar components:
- Areas of Frederick soils, which are very deep and are intermingled with the Carbo soil and Rock outcrop on the landscape
- Areas of poorly drained soils in narrow drainageways and in the center of some of the numerous sinkholes in the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock and that are intermingled with the Carbo soil and Rock outcrop on the landscape
- Areas of soils that are less than 20 inches deep to bedrock and that are intermingled with the Carbo soil and Rock outcrop on the landscape

Properties and Qualities of the Carbo Soil

Available water capacity: Low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Sinkholes (karst areas) increase the potential for ground-water contamination from the effluent from conventional septic systems; septic systems should not be placed near sinkholes.
- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Carbo—7s; Rock outcrop—8s
Virginia soil management group: Carbo—Y; Rock outcrop—none assigned
Hydric soils: No

14C—Cedarcreek-Alticrest-Rock outcrop complex, 5 to 15 percent slopes, very stony

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Cedarcreek and Alticrest—ridges and spurs; Rock outcrop—exposed surface-mine highwalls
Position on the landform: Summits and shoulders
Size of areas: 10 to 30 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Cedarcreek and similar soils: Typically 50 percent, ranging from about 45 to 50 percent
Alticrest and similar soils: Typically 30 percent, ranging from about 25 to 30 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 15 percent

Typical Profile

Cedarcreek

Surface layer:
0 to 4 inches—very dark grayish brown extremely stony loam

Substratum:
4 to 26 inches—dark yellowish brown and dark grayish brown extremely stony loam
26 to 58 inches—yellowish brown extremely stony loam
58 to 72 inches—dark grayish brown very channery loam

Alticrest

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 3 inches—brown fine sandy loam

Subsoil:
3 to 35 inches—yellowish brown sandy loam

Hard bedrock:
35 inches—sandstone bedrock

Rock outcrop

This part of the map unit consists of outcrops of shale and sandstone on exposed surface-mine highwalls.

Minor Components

Dissimilar components:
- Areas of Gilpin soils, which are moderately deep, formed in residuum derived from shale, have fewer rock fragments than the Cedarcreek soil, and have more clay and less sand than the Alticrest soil; scattered throughout the residual parts of the map unit
- Areas of Grimsley soils, which are deep and colluvial and have more clay in the subsoil than the Alticrest soil; in drainageways and on footslopes

Similar components:
- Areas of Berks soils, which are moderately deep, formed in residuum derived from

shale, and have more shale fragments than the Alticrest soil; scattered throughout the residual parts of the map unit
- Areas of Lily soils, which are moderately deep and have more clay and less sand in the subsoil than the Alticrest soil; scattered throughout the residual parts of the map unit

Properties and Qualities of the Cedarcreek and Alticrest Soils

Available water capacity: Cedarcreek—moderate (about 7.2 inches); Alticrest—low (about 3.9 inches)
Slowest saturated hydraulic conductivity: Cedarcreek—moderately high (about 0.57 in/hr); Alticrest—high (about 1.98 in/hr)
Depth class: Cedarcreek—very deep (more than 60 inches); Alticrest—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Cedarcreek—more than 60 inches; Alticrest—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Cedarcreek—low; Alticrest—high
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Cedarcreek—mine spoil derived from sandstone, siltstone, shale, and coal; Alticrest—residuum weathered from sandstone
Distinctive soil property: Cedarcreek soil is subject to differential settling

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Well suited to northern red oak, yellow-poplar, and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.

Building sites

- Because of differential settling, this map unit is not recommended for building site development.

Septic tank absorption fields

- Because of differential settling, this map unit is not recommended for septic tank absorption fields.

Local roads and streets

- Differential settling of the soil may damage local roads and streets.
- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cedarcreek and Alticrest—7s; Rock outcrop—8s
Virginia soil management group: Cedarcreek—JJ; Alticrest—FF; Rock outcrop—none assigned
Hydric soils: No

14E—Cedarcreek-Alticrest-Rock outcrop complex, 15 to 40 percent slopes, very stony

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Cedarcreek and Alticrest—ridges and spurs; Rock outcrop—exposed surface-mine highwalls
Position on the landform: Summits and shoulders
Size of areas: 10 to 300 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Cedarcreek and similar soils: Typically 50 percent, ranging from about 45 to 50 percent
Alticrest and similar soils: Typically 30 percent, ranging from about 25 to 30 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 15 percent

Typical Profile

Cedarcreek

Surface layer:
0 to 4 inches—very dark grayish brown extremely stony loam

Substratum:
4 to 26 inches—dark yellowish brown and dark grayish brown extremely stony loam
26 to 58 inches—yellowish brown extremely stony loam
58 to 72 inches—dark grayish brown very channery loam

Alticrest

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 3 inches—brown fine sandy loam

Subsoil:
3 to 35 inches—yellowish brown sandy loam

Hard bedrock:
35 inches—sandstone bedrock

Rock outcrop

This part of the map unit consists of outcrops of shale and sandstone on exposed surface-mine highwalls.

Minor Components

Dissimilar components:
- Areas of Gilpin soils, which are moderately deep, formed in residuum derived from shale, have fewer rock fragments than the Cedarcreek soil, and have more clay and less sand than the Alticrest soil; scattered among the residual soils in the map unit
- Areas of Grimsley soils, which are deep and colluvial and have more clay in the subsoil than the Alticrest soil; in drainageways and on footslopes

Similar components:
- Areas of Berks soils, which are moderately deep, formed in residuum derived from shale, and have more shale fragments than the Alticrest soil; scattered among the residual soils in the map unit
- Areas of Lily soils, which are moderately deep and have more clay and less sand in the subsoil than the Alticrest soil; scattered among the residual soils in the map unit

Properties and Qualities of the Cedarcreek and Alticrest Soils

Available water capacity: Cedarcreek—moderate (about 7.2 inches); Alticrest—low (about 3.9 inches)
Slowest saturated hydraulic conductivity: Cedarcreek—moderately high (about 0.57 in/hr); Alticrest—high (about 1.98 in/hr)
Depth class: Cedarcreek—very deep (more than 60 inches); Alticrest—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Cedarcreek—more than 60 inches; Alticrest—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Cedarcreek—medium; Alticrest—very high
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Cedarcreek—mine spoil derived from sandstone, siltstone, shale, and coal; Alticrest—residuum weathered from sandstone
Distinctive soil property: Cedarcreek soil is subject to differential settling

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Well suited to northern red oak and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.

Building sites

- Because of differential settling, this map unit is not recommended for building site development.

Septic tank absorption fields

- Because of differential settling, this map unit is not recommended for septic tank absorption fields.

Local roads and streets

- Differential settling of the soil may damage local roads and streets.
- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cedarcreek and Alticrest—7s; Rock outcrop—8s
Virginia soil management group: Cedarcreek—JJ; Alticrest—FF; Rock outcrop—none assigned
Hydric soils: No

15C—Cedarcreek-Rock outcrop complex, 0 to 15 percent slopes, very stony

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Cedarcreek—mountains and hills; Rock outcrop—exposed surface-mine highwalls
Position on the landform: Summits, shoulders, backslopes, and some footslopes
Size of areas: 5 to 60 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Cedarcreek and similar soils: Typically 80 percent, ranging from about 75 to 85 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 15 percent

Typical Profile

Cedarcreek

Surface layer:
0 to 4 inches—very dark grayish brown extremely stony loam

Substratum:
4 to 26 inches—dark yellowish brown and dark grayish brown extremely stony loam

26 to 58 inches—yellowish brown extremely stony loam
58 to 72 inches—dark grayish brown very channery loam

Rock outcrop

This part of the map unit consists of outcrops of shale and sandstone on exposed surface-mine highwalls.

Minor Components

Dissimilar components:
- Areas of Alticrest, Berks, Gilpin, and Lily soils, which are well drained and are less than 40 inches deep to bedrock; in unmined areas
- Areas of Grimsley soils, which are well drained and have a natural subsoil; in drainageways and on footslopes
- Areas of residual soils that are less than 20 inches deep to bedrock
- Areas of residual soils that are more than 40 inches deep to bedrock

Similar components:
- Areas of strip-mine soils that have a higher pH in the subsoil than is typical for the Cedarcreek soil

Properties and Qualities of the Cedarcreek Soil

Available water capacity: Moderate (about 7.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Mine spoil derived from sandstone, siltstone, shale, and coal
Distinctive soil property: Cedarcreek soil is subject to differential settling

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Well suited to northern red oak and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The depth to hard bedrock restricts the use of equipment during site preparation for planting or seeding and interferes with mechanical planting equipment.

- The use of mechanical planting equipment is impractical because of the content of rock fragments.

Building sites

- Because of differential settling, this map unit is not recommended for building site development.

Septic tank absorption fields

- Because of differential settling, this map unit is not recommended for septic tank absorption fields.

Local roads and streets

- Differential settling of the soil may damage local roads and streets.
- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cedarcreek—7s; Rock outcrop—8s
Virginia soil management group: Cedarcreek—JJ; Rock outcrop—none assigned
Hydric soils: No

15D—Cedarcreek-Rock outcrop complex, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Cedarcreek—mountains and hills; Rock outcrop—exposed surface-mine highwalls
Position on the landform: Summits, shoulders, backslopes, and some footslopes
Size of areas: 5 to 60 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Cedarcreek and similar soils: Typically 80 percent, ranging from about 75 to 85 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 15 percent

Typical Profile

Cedarcreek

Surface layer:
0 to 4 inches—very dark grayish brown extremely stony loam

Substratum:
4 to 26 inches—dark yellowish brown and dark grayish brown extremely stony loam
26 to 58 inches—yellowish brown extremely stony loam
58 to 72 inches—dark grayish brown very channery loam

Rock outcrop

This part of the map unit consists of outcrops of shale and sandstone on exposed surface-mine highwalls.

Minor Components

Dissimilar components:
- Areas of Alticrest, Berks, Gilpin, and Lily soils, which are well drained and are less than 40 inches deep to bedrock; in unmined areas
- Areas of Grimsley soils, which are well drained and have a natural subsoil; in drainageways and on footslopes
- Areas of residual soils that are less than 20 inches deep to bedrock
- Areas of residual soils that are more than 40 inches deep to bedrock

Similar components:
- Areas of strip-mine soils that have a higher pH in the subsoil than is typical for the Cedarcreek soil

Properties and Qualities of the Cedarcreek Soil

Available water capacity: Moderate (about 7.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Mine spoil derived from sandstone, siltstone, shale, and coal
Distinctive soil property: Cedarcreek soil is subject to differential settling

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Well suited to northern red oak and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The depth to hard bedrock restricts the use of equipment during site preparation for planting or seeding and interferes with mechanical planting equipment.

- The use of mechanical planting equipment is impractical because of the content of rock fragments.

Building sites

- Because of differential settling, this map unit is not recommended for building site development.

Septic tank absorption fields

- Because of differential settling, this map unit is not recommended for septic tank absorption fields.

Local roads and streets

- Differential settling of the soil may damage local roads and streets.
- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cedarcreek—7s; Rock outcrop—8s
Virginia soil management group: Cedarcreek—JJ; Rock outcrop—none assigned
Hydric soils: No

15E—Cedarcreek-Rock outcrop complex, 35 to 80 percent slopes, very stony

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Cedarcreek—mountains and hills; Rock outcrop—exposed surface-mine highwalls
Position on the landform: Summits, shoulders, backslopes, and some footslopes
Size of areas: 5 to 60 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Cedarcreek and similar soils: Typically 80 percent, ranging from about 75 to 85 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 15 percent

Typical Profile

Cedarcreek

Surface layer:
0 to 4 inches—very dark grayish brown extremely stony loam

Substratum:
4 to 26 inches—dark yellowish brown and dark grayish brown extremely stony loam
26 to 58 inches—yellowish brown extremely stony loam
58 to 72 inches—dark grayish brown very channery loam

Rock outcrop

This part of the map unit consists of outcrops of shale and sandstone on exposed surface-mine highwalls.

Minor Components

Dissimilar components:
- Areas of Alticrest, Berks, Gilpin, and Lily soils, which are well drained and less than 40 inches deep to bedrock; in unmined areas
- Areas of Grimsley soils, which are well drained and have a natural subsoil; in drainageways and on footslopes
- Areas of residual soils that are less than 20 inches deep to bedrock
- Areas of residual soils that are more than 40 inches deep to bedrock

Similar components:
- Areas of strip-mine soils that have a higher pH in the subsoil than is typical for the Cedarcreek soil

Properties and Qualities of the Cedarcreek Soil

Available water capacity: Moderate (about 7.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Mine spoil derived from sandstone, siltstone, shale, and coal
Distinctive soil property: Cedarcreek soil is subject to differential settling

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Well suited to northern red oak and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The depth to hard bedrock restricts the use of equipment during site preparation for planting or seeding and interferes with mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.

Building sites

- Because of differential settling, this map unit is not recommended for building site development.

Septic tank absorption fields

- Because of differential settling, this map unit is not recommended for septic tank absorption fields.

Local roads and streets

- Differential settling of the soil may damage local roads and streets.
- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cedarcreek—7s; Rock outcrop—8s
Virginia soil management group: Cedarcreek—JJ; Rock outcrop—none assigned
Hydric soils: No

16D—Chiswell-Litz complex, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, backslopes, and some footslopes
Size of areas: 3 to 30 acres
Shape of areas: Long and narrow or irregular

Map Unit Composition

Chiswell and similar soils: Typically 60 percent, ranging from about 55 to 65 percent
Litz and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Chiswell

Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 11 inches—yellowish brown channery silt loam
11 to 14 inches—yellowish brown very channery silt loam

Substratum:
14 to 17 inches—yellowish brown extremely channery silt loam

Soft bedrock:
17 to 20 inches—light olive brown bedrock

Hard bedrock:
20 inches—shale bedrock

Litz

Surface layer:
0 to 5 inches—brown channery loam

Subsurface layer:
5 to 11 inches—yellowish brown channery loam

Subsoil:
11 to 26 inches—strong brown and dark yellowish brown very channery loam and very channery clay loam

Hard bedrock:
26 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Carbo soils that are near the edge of the map unit
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that have fewer rock fragments than the Chiswell and Litz soils; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Chiswell—very low (about 1.5 inches); Litz—low (about 3.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Chiswell—shallow (10 to 20 inches); Litz—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Chiswell—10 to 20 inches to bedrock (paralithic) and 10 to 30 inches to bedrock (lithic); Litz—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from shale interbedded with fine-grained sandstone and siltstone and, in some places, limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to chestnut oak; poorly suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Chiswell—6s; Litz—4e
Virginia soil management group: JJ
Hydric soils: No

16E—Chiswell-Litz complex, 25 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 3 to 50 acres
Shape of areas: Long and narrow or irregular

Map Unit Composition

Chiswell and similar soils: Typically 60 percent, ranging from about 55 to 65 percent
Litz and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Chiswell

Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 11 inches—yellowish brown channery silt loam
11 to 14 inches—yellowish brown very channery silt loam

Substratum:
14 to 17 inches—yellowish brown extremely channery silt loam

Soft bedrock:
17 to 20 inches—light olive brown bedrock

Hard bedrock:
20 inches—shale bedrock

Litz

Surface layer:
0 to 5 inches—brown channery loam

Subsurface layer:
5 to 11 inches—yellowish brown channery loam

Subsoil:
11 to 26 inches—strong brown and dark yellowish brown very channery loam and very channery clay loam

Hard bedrock:
26 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Carbo soils that are near the edges of the map unit
- Areas of very shallow soils that are near rock outcrops
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that have fewer rock fragments than the Chiswell and Litz soils; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Chiswell—very low (about 1.5 inches); Litz—low (about 3.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Chiswell—shallow (10 to 20 inches); Litz—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Chiswell—10 to 20 inches to bedrock (paralithic) and 10 to 30 inches to bedrock (lithic); Litz—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low

Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from shale interbedded with fine-grained sandstone and siltstone and, in some places, limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to chestnut oak; poorly suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: JJ
Hydric soils: No

16F—Chiswell-Litz complex, 35 to 60 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 3 to 75 acres
Shape of areas: Long and narrow to irregular

Map Unit Composition

Chiswell and similar soils: Typically 60 percent, ranging from about 55 to 65 percent
Litz and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Chiswell

Surface layer:
0 to 2 inches—dark brown silt loam

Subsoil:
2 to 11 inches—yellowish brown channery silt loam
11 to 14 inches—yellowish brown very channery silt loam

Substratum:
14 to 17 inches—yellowish brown extremely channery silt loam

Soft bedrock:
17 to 20 inches—light olive brown bedrock

Hard bedrock:
20 inches—shale bedrock

Litz

Surface layer:
0 to 5 inches—brown channery loam

Subsurface layer:
5 to 11 inches—yellowish brown channery loam

Subsoil:
11 to 26 inches—strong brown and dark yellowish brown very channery loam and very channery clay loam

Hard bedrock:
26 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Carbo soils that are near the edges of the map unit

- Areas of very shallow soils that are near rock outcrops
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that have fewer rock fragments than the Chiswell and Litz soils; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Chiswell—very low (about 1.5 inches); Litz—low (about 3.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Chiswell—shallow (10 to 20 inches); Litz—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Chiswell—10 to 20 inches to bedrock (paralithic) and 10 to 30 inches to bedrock (lithic); Litz—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from shale interbedded with fine-grained sandstone and siltstone and, in some places, limestone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak; poorly suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the nature and depth of the soft bedrock, the ease of excavation is reduced and the difficulty of constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soils: No

17B—Coursey loam, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Stream terraces
Position on the landform: Treads, risers, and footslopes
Size of areas: 5 to 30 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Coursey and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 8 inches—very dark grayish brown loam

Subsoil:
8 to 13 inches—light yellowish brown loam
13 to 26 inches—brownish yellow sandy clay loam
26 to 40 inches—brownish yellow sandy clay loam; light brownish gray iron depletions and strong brown masses of oxidized iron
40 to 53 inches—yellowish brown sandy clay loam; strong brown masses of oxidized iron and light brownish gray iron depletions
53 to 60 inches—brown and yellowish brown sandy clay loam; strong brown masses of oxidized iron and light brownish gray iron depletions
60 to 65 inches—light brownish gray sandy clay loam; strong brown and yellowish brown masses of oxidized iron

Minor Components

Dissimilar components:
- Areas of Pope soils, which are well drained and are subject to flooding; in landscape positions lower than those of the Coursey soil
- Areas of Purdy soils, which are poorly drained; in landscape positions slightly lower than those of the Coursey soil

- Areas of Grimsley soils, which are well drained and have more rock fragments than the Coursey soil; on footslopes
- Areas of soils that were disturbed or covered either by development or mining

Similar components:
- Areas of Allegheny soils, which are well drained; in landscape positions higher than those of the Coursey soil

Soil Properties and Qualities

Available water capacity: Moderate (about 7.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 24 to 36 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Alluvium derived from limestone, sandstone, and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root system of winter grain crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: G
Hydric soil: No

18B—Craigsville very gravelly sandy loam, 0 to 5 percent slopes, frequently flooded

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Flood plains
Position on the landform: Toeslopes
Size of areas: 5 to 100 acres
Shape of areas: Long and winding

Map Unit Composition

Craigsville and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 7 inches—dark brown very gravelly sandy loam

Subsoil:
7 to 23 inches—brown very cobbly sandy loam
23 to 35 inches—reddish brown extremely cobbly sandy loam

Substratum:
35 to 61 inches—reddish brown extremely stony loamy sand

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are colluvial, are not subject to flooding, and have more clay in the subsoil than the Craigsville soil; on the higher parts of the landscape at the edge of the map unit
- Areas of moderately well drained soils in old channels and depressions

Similar components:
- Areas of Pope soils, which have fewer gravel, cobbles, and stones than the Craigsville soil; generally in the higher landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 5.4 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches

Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Surface fragments: None
Parent material: Alluvium derived from shale, siltstone, and sandstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Frequent flooding restricts the use of winter grain crops.
- Flooding may damage crops.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Flooding may damage pastures.

Woodland

Suitability: Well suited to northern red oak and eastern white pine; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable Best Management Practices (BMPs).
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3s
Virginia soil management group: CC
Hydric soil: No

19D—Drypond-Rock outcrop complex, 15 to 35 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Summits, shoulders, and the upper parts of backslopes
Size of areas: 5 to 100 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Drypond and similar soils: Typically 65 percent, ranging from about 60 to 70 percent
Rock outcrop: Typically 25 percent, ranging from about 20 to 30 percent

Typical Profile

Drypond

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 3 inches—brown very gravelly sandy loam

Subsoil:
3 to 11 inches—yellowish brown very gravelly sandy loam

Substratum:
11 to 16 inches—yellowish brown extremely gravelly sandy loam

Hard bedrock:
16 inches—quartzite bedrock

Rock outcrop

This part of the map unit consists of outcrops of hard quartzite.

Minor Components

Dissimilar components:
- Areas of Calvin soils, which formed in shale, have more silt and less sand than the Drypond soil, have redder colors, and are deeper to bedrock; in the lower landscape positions
- Areas of Brushy soils, which formed in chert and are deeper to bedrock than the Drypond soil; in the lower positions
- Areas of Lily soils, which formed in sandstone and are deeper to bedrock than the Drypond soil; in the lower landscape positions

Similar components:
- Areas of Wallen soils, which are deeper to bedrock than the Drypond soil; scattered throughout the map unit
- Areas of rubbly and bouldery soils that are scattered throughout the map unit

Properties and Qualities of the Drypond Soil

Available water capacity: Very low (about 1.1 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Depth class: Shallow (10 to 20 inches)
Depth to root-restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 3.00 to 15.00 percent angular stones
Parent material: Residuum weathered from sandstone and quartzite

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Poorly suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Drypond—7s; Rock outcrop—8s
Virginia soil management group: Drypond—JJ; Rock outcrop—none assigned
Hydric soils: No

19E—Drypond-Rock outcrop complex, 35 to 80 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mainly mountains; in some places rock outcrops are escarpments
Position on the landform: Summits, shoulders, and the upper parts of backslopes
Size of areas: 5 to 20 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Drypond and similar soils: Typically 65 percent, ranging from about 60 to 70 percent
Rock outcrop: Typically 25 percent, ranging from about 20 to 30 percent

Typical Profile

Drypond

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 3 inches—brown very gravelly sandy loam

Subsoil:
3 to 11 inches—yellowish brown very gravelly sandy loam

Substratum:
11 to 16 inches—yellowish brown extremely gravelly sandy loam

Hard bedrock:
16 inches—quartzite bedrock

Rock outcrop

This part of the map unit consists of outcrops of hard quartzite.

Minor Components

Dissimilar components:
- Areas of Calvin soils, which formed in shale, have more silt and less sand than the Drypond soil, are redder, and are deeper to bedrock; in the lower landscape positions
- Areas of Brushy soils, which formed in chert and are deeper to bedrock than the Drypond soil; in the lower landscape positions
- Areas of Lily soils, which formed in sandstone and are deeper to bedrock than the Drypond soil; in the lower landscape positions

Similar components:
- Areas of Wallen soils, which are deeper to bedrock than the Drypond soil; scattered throughout the map unit
- Areas of rubbly and bouldery soils that are scattered throughout the map unit

Properties and Qualities of the Drypond Soil

Available water capacity: Very low (about 1.1 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Depth class: Shallow (10 to 20 inches)
Depth to root-restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 3.00 to 15.00 percent angular stones
Parent material: Residuum weathered from sandstone and quartzite

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Poorly suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.

- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Drypond—7s; Rock outcrop—8s
Virginia soil management group: Drypond—JJ; Rock outcrop—none assigned
Hydric soils: No

20B—Frederick silt loam, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 90 acres
Shape of areas: Long and winding or irregular

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam

14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of moderately well drained soils that have a fragipan and have less clay in the subsoil than the Frederick soil; on colluvial side slopes and footslopes
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick gravelly silt loam that are scattered throughout the map unit
- Areas of Murrill soils, which are well drained and have less clay in the upper part of the subsoil than the Frederick soil; on colluvial side slopes and footslopes
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest areas of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: M
Hydric soil: No

20C—Frederick silt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and footslopes
Size of areas: 5 to 50 acres
Shape of areas: Long and winding or irregular

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles

50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of moderately well drained soils that have a fragipan and that have less clay in the subsoil than the Frederick soil; on colluvial side slopes and footslopes
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick gravelly silt loam
- Areas of Murrill soils, which are well drained and have less clay in the upper part of the subsoil than the Frederick soil; on colluvial side slopes and footslopes
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest areas of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: M
Hydric soil: No

20D—Frederick silt loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and footslopes
Size of areas: 5 to 100 acres
Shape of areas: Long or winding or irregular

Map Unit Composition

Frederick and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles

34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of soils that have bedrock within a depth of 20 inches; near rock outcrops
- Areas of rock outcrop that are scattered throughout the map unit

Similar components:
- Areas of Frederick gravelly silt loam
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest areas of the map unit
- Areas of soils that have less clay in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 48 to 72 inches; scattered throughout the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: M
Hydric soil: No

20E—Frederick silt loam, 25 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 50 acres
Shape of areas: Long and winding

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles

27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick gravelly silt loam that are scattered throughout the map unit
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest areas of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have less clay in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and

careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: M
Hydric soil: No

20F—Frederick silt loam, 35 to 60 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Shoulders and backslopes
Size of areas: 5 to 50 acres
Shape of areas: Long and winding

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles

27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick gravelly silt loam that are scattered throughout the map unit
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest areas of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have less clay in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: M
Hydric soil: No

21B—Frederick gravelly silt loam, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and footslopes
Size of areas: 5 to 15 acres
Shape of areas: Short to long and winding

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown gravelly silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of moderately well drained soils that have a fragipan and have less clay in the subsoil than the Frederick soil; on colluvial side slopes and footslopes
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick silt loam that are scattered throughout the map unit
- Areas of Murrill soils, which have less clay in the upper part of the subsoil than the Frederick soil and are well drained; on colluvial fans and footslopes
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium derived from limestone, sandstone, and shale; in the lowest areas of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).

- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: M
Hydric soil: No

21C—Frederick gravelly silt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and footslopes
Size of areas: 5 to 50 acres
Shape of areas: Short to long and winding

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown gravelly silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of moderately well drained soils that have a fragipan and that have less clay in the subsoil than the Frederick soil; on colluvial side slopes and footslopes
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick silt loam scattered throughout the map unit
- Areas of Murrill soils, which are well drained and have less clay in the upper part of the subsoil than the Frederick soil; on colluvial fans and footslopes
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest parts of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: M
Hydric soil: No

21D—Frederick gravelly silt loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, backslopes, and footslopes
Size of areas: 5 to 100 acres
Shape of areas: Long and winding or irregular

Map Unit Composition

Frederick and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown gravelly silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of Wallen soils, which are moderately deep, formed in residuum derived from sandstone, are more than 35 percent rock fragments, and have more sand and less clay than the Frederick soil; in the higher landscape positions, on the south side of Buckhorn Mountain
- Areas of soils that are more than 35 percent chert fragments; scattered throughout the mapped areas in the valley between Buckhorn and Rich Mountains

- Areas of very stony soils on Whitley Ridge
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick silt loam that are scattered throughout the map unit
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest parts of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit
- Areas of soils that have less clay in the subsoil than the Frederick soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.

- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: M
Hydric soil: No

21E—Frederick gravelly silt loam, 25 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 100 acres
Shape of areas: Long and winding

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 80 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown gravelly silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of Carbo soils, which are moderately deep; near rock outcrops
- Areas of Wallen soils, which are moderately deep, formed in residuum derived from

sandstone, are more than 35 percent rock fragments, and have more sand and less clay than the Frederick soil; in the higher landscape positions, on the south side of Buckhorn Mountain
- Areas of soils that are more than 35 percent chert fragments; scattered throughout the valley between Buckhorn and Rich Mountains
- Areas of very stony soils on Whitley Ridge
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick silt loam that are scattered throughout the map unit
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest parts of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.

- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: M
Hydric soil: No

21F—Frederick gravelly silt loam, 35 to 60 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Shoulders and backslopes
Size of areas: 5 to 50 acres
Shape of areas: Long and winding

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown gravelly silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of Wallen soils, which are moderately deep, formed in residuum derived from

sandstone, are more than 35 percent rock fragments, and have more sand and less clay than the Frederick soil; in the higher landscape positions, on the south side of Buckhorn Mountain
- Areas of soils that are more than 35 percent chert fragments; scattered throughout the mapped areas in the valley between Buckhorn and Rich Mountains
- Areas of very stony soils on Whitley Ridge
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Frederick silt loam that are scattered throughout the map unit
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest parts of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: M
Hydric soil: No

22B—Frederick silt loam, karst, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills in karst areas
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 20 acres
Shape of areas: Narrow or irregular
Note: Areas of this map unit have karst topography; many topographic depressions, such as sinkholes, occur

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of moderately well drained soils in the center of numerous sinkholes that are scattered throughout the map unit

- Areas of poorly drained soils in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Murrill soils, which are well drained and have less clay in the subsoil than the Frederick soil; on colluvial side slopes and footslopes
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest parts of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay and alfalfa hay; not suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Sinkholes (karst areas) increase the potential for ground-water contamination from the effluent from conventional septic systems; septic systems should not be placed near sinkholes.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Collapsing sinkholes may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 2e
Virginia soil management group: M
Hydric soil: No

22C—Frederick silt loam, karst, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills with karst topography
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 200 acres
Shape of areas: Long and winding or irregular
Note: Areas of this map unit have karst topography; many topographic depressions, such as sinkholes, occur

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of moderately well drained soils in the center of numerous sinkholes scattered throughout the map unit
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Murrill soils, which are well drained and have less clay in the subsoil than the Frederick soil; on colluvial side slopes and footslopes
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest parts of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils, that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to alfalfa hay; not suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Sinkholes (karst areas) increase the potential for ground-water contamination from the effluent from conventional septic systems; septic systems should not be placed near sinkholes.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: M
Hydric soil: No

22D—Frederick silt loam, karst, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills with karst topography
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 225 acres
Shape of areas: Long and winding or irregular
Note: Areas of this map unit have karst topography; many topographic depressions, such as sinkholes, occur

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of moderately well drained soils in the center of numerous sinkholes scattered throughout the map unit
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Timberville soils, which are well drained and formed in colluvium and alluvium; in the lowest parts of the map unit
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit
- Areas of soils that have less clay in the subsoil than the Frederick soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay and alfalfa hay; not suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Sinkholes (karst areas) increase the potential for ground-water contamination from the effluent from conventional septic systems; septic systems should not be placed near sinkholes.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: M
Hydric soil: No

22E—Frederick silt loam, karst, 25 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills with karst topography
Position on the landform: Summits, shoulders, backslopes, and some footslopes

Size of areas: 5 to 225 acres
Shape of areas: Long and winding or irregular
Note: Areas of this map unit have karst topography; many topographic depressions, such as sinkholes, occur

Map Unit Composition

Frederick and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown silt loam

Subsoil:
8 to 14 inches—strong brown silty clay loam
14 to 27 inches—yellowish red silty clay; few red mottles
27 to 34 inches—yellowish red clay; common brownish yellow and common red mottles
34 to 50 inches—yellowish red clay; few brownish yellow and few red mottles
50 to 62 inches—yellowish red silty clay; common brownish yellow and common red mottles

Minor Components

Dissimilar components:
- Areas of moderately well drained soils in the center of numerous sinkholes scattered throughout the map unit
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of soils that are yellower in the subsoil than the Frederick soil; scattered throughout the map unit
- Areas of soils that have a surface layer and subsoil less than 60 inches thick; scattered throughout the map unit
- Areas of soils that have bedrock within a depth of 4 to 6 feet; scattered throughout the map unit
- Areas of soils that have less clay in the subsoil than the Frederick soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 6.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from dolomitic limestone that is interbedded with sandstone and shale in some places

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Sinkholes (karst areas) increase the potential for ground-water contamination from the effluent from conventional septic systems; septic systems should not be placed near sinkholes.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: M
Hydric soil: No

23C—Gilpin-Berks complex, 7 to 15 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Summits and shoulders
Size of areas: 5 to 20 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Gilpin and similar soils: Typically 50 percent, ranging from about 45 to 55 percent
Berks and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Gilpin

Organic layer:
2 inches to 0—undecomposed hardwood leaf litter and twigs

Surface layer:
0 to 2 inches—brown silt loam

Subsoil:
2 to 6 inches—yellowish brown silt loam
6 to 30 inches—strong brown silty clay loam

Substratum:
30 to 35 inches—yellowish brown extremely channery silt loam

Hard bedrock:
35 inches—shale bedrock

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Cedarcreek soils, which are very deep to bedrock; in mined areas
- Areas of Grimsley soils, which are deep and colluvial and have fragments of sandstone; in drainageways and on the lower footslopes
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Alticrest soils, which formed in residuum derived from sandstone and have more sand, less silt, and fewer rock fragments than the Berks soil
- Areas of Lily soils, which formed in residuum derived from sandstone and have more sand and less silt than the Gilpin soil
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit, especially in saddles and on summits

Soil Properties and Qualities

Available water capacity: Gilpin—low (about 4.8 inches); Berks—very low (about 2.5 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Gilpin—residuum weathered from noncalcareous shale; Berks—residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Gilpin—3e; Berks—4s
Virginia soil management group: Gilpin—U; Berks—JJ
Hydric soils: No

23D—Gilpin-Berks complex, 15 to 25 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 40 acres
Shape of areas: Irregular or very long and broad

Map Unit Composition

Gilpin and similar soils: Typically 50 percent, ranging from about 45 to 55 percent
Berks and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Gilpin

Organic layer:
2 inches to 0—undecomposed hardwood leaf litter and twigs

Surface layer:
0 to 2 inches—brown silt loam

Subsoil:
2 to 6 inches—yellowish brown silt loam
6 to 30 inches—strong brown silty clay loam

Substratum:
30 to 35 inches—yellowish brown extremely channery silt loam

Hard bedrock:
35 inches—shale bedrock

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Cedarcreek soils, which are very deep to bedrock; in mined areas
- Areas of Grimsley soils, which are deep and colluvial and have sandstone fragments; in drainageways and on the lower footslopes
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Alticrest soils, which formed in residuum derived from sandstone and have more sand, less silt, and fewer rock fragments than the Berks soil
- Areas of Lily soils, which formed in residuum derived from sandstone and have more sand and less silt than the Gilpin soil
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit, especially in saddles and on summits

Soil Properties and Qualities

Available water capacity: Gilpin—low (about 4.8 inches); Berks—very low (about 2.5 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Gilpin—residuum weathered from noncalcareous shale; Berks—residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: Gilpin—U; Berks—JJ
Hydric soils: No

24C—Grimsley loam, 8 to 15 percent slopes, very stony

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges, spurs, and drainageways
Position on the landform: Footslopes
Size of areas: 5 to 25 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Grimsley and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 2 inches—dark grayish brown loam

Subsurface layer:
2 to 10 inches—yellowish brown channery loam

Subsoil:
10 to 60 inches—yellowish brown very channery clay loam

Minor Components

Dissimilar components:
- Areas of Alticrest soils, which are moderately deep, formed in residuum derived from sandstone, and have fewer rock fragments than the Grimsley soil; in the higher landscape positions
- Areas of Cedarcreek soils, which formed in mine spoil and do not have genetic horizons; in disturbed areas
- Areas of Gilpin soils, which are moderately deep, formed in residuum derived from shale, and have fewer rock fragments than the Grimsley soil; on nose slopes and shoulders
- Areas of Lily soils, which are moderately deep, formed in residuum derived from sandstone, and have fewer rock fragments than the Grimsley soil; in the higher landscape positions
- Areas of Philo soils on narrow flood plains
- Areas of moderately well drained soils that are similar to the Grimsley soil; in drainageways

Similar components:
- Areas of Berks soils, which are moderately deep and formed in residuum derived from shale; on nose slopes and shoulders
- Areas of Grimsley loam, very stony; scattered throughout the map unit
- Areas of Grimsley sandy loam, very stony; scattered throughout the map unit

- Areas of soils that are more than 60 inches deep to bedrock; generally in the lower landscape positions
- Areas of deep, colluvial soils that have fewer rock fragments than the Grimsley soil; scattered throughout the map unit
- Areas of nonstony Grimsley soils

Soil Properties and Qualities

Available water capacity: Low (about 5.0 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: 40 to 80 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Moderately suited to southern red oak, northern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: CC
Hydric soil: No

24D—Grimsley loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges, spurs, and drainageways
Position on the landform: Footslopes and backslopes
Size of areas: 5 to 100 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Grimsley and similar soils: Typically 90 percent, ranging from about 90 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 2 inches—dark grayish brown loam

Subsurface layer:
2 to 10 inches—yellowish brown channery loam

Subsoil:
10 to 60 inches—yellowish brown very channery clay loam

Minor Components

Dissimilar components:
- Areas of Alticrest soils, which are moderately deep, formed in residuum derived from sandstone, and have fewer rock fragments than the Grimsley soil; in the higher landscape positions
- Areas of Cedarcreek soils, which formed in mine spoil and do not have natural horizons; in disturbed areas
- Areas of Gilpin soils, which are moderately deep, formed in residuum derived from shale, and have fewer rock fragments than the Grimsley soil; on nose slopes and shoulders
- Areas of Lily soils, which are moderately deep, formed in residuum derived from sandstone, and have fewer rock fragments than the Grimsley soil; in the higher landscape positions
- Areas of Philo soils on narrow flood plains
- Areas of moderately well drained soils that are similar to the Grimsley soil; in drainageways

Similar components:
- Areas of Berks soils, which are moderately deep and formed in residuum derived from shale; on nose slopes and shoulders
- Areas of Grimsley loam, very stony; scattered throughout the map unit
- Areas of Grimsley sandy loam, very stony; scattered throughout the map unit

- Areas of soils that are more than 60 inches deep to bedrock; generally in the lower landscape positions
- Areas of deep, colluvial soils that have fewer rock fragments than the Grimsley soil; scattered throughout the map unit
- Areas of nonstony Grimsley soils

Soil Properties and Qualities

Available water capacity: Low (about 5.0 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: 40 to 80 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to southern red oak, northern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: CC
Hydric soil: No

24E—Grimsley loam, 35 to 70 percent slopes, very stony

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges, spurs, and drainageways
Position on the landform: Footslopes and backslopes
Size of areas: 5 to 500 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Grimsley and similar soils: Typically 85 percent, ranging from about 75 to 90 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 2 inches—dark grayish brown loam

Subsurface layer:
2 to 10 inches—yellowish brown channery loam

Subsoil:
10 to 60 inches—yellowish brown very channery clay loam

Minor Components

Dissimilar components:
- Areas of Alticrest soils, which are moderately deep, formed in residuum derived from sandstone, and have fewer rock fragments than the Grimsley soil; in the higher landscape positions
- Areas of Cedarcreek soils, which formed in mine spoil in disturbed areas and do not have horizons that occurred naturally
- Areas of Gilpin soils, which are moderately deep, formed in residuum derived from shale, and have fewer rock fragments than the Grimsley soil; on nose slopes and shoulders
- Areas of Lily soils, which are moderately deep, formed in residuum derived from sandstone, and have fewer rock fragments than the Grimsley soil; in the higher landscape positions
- Areas of Philo soils on narrow flood plains
- Areas of moderately well drained soils that are similar to the Grimsley soil; in drainageways
- Areas of sandy soils in the upper landscape positions

Similar components:
- Areas of Berks soils, which are moderately deep and formed in residuum derived from shale; on nose slopes and shoulders
- Areas of Grimsley loam, very stony; scattered throughout the map unit
- Areas of Grimsley sandy loam, very stony; scattered throughout the map unit

- Areas of soils that are more than 60 inches deep to bedrock; generally in the lower landscape positions
- Areas of deep, colluvial soils that have fewer rock fragments than the Grimsley soil; scattered throughout the map unit
- Areas of nonstony Grimsley soils

Soil Properties and Qualities

Available water capacity: Low (about 5.0 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: 40 to 80 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Colluvium derived from sandstone and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to southern red oak, northern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: CC
Hydric soil: No

25D—Grimsley-Cedarcreek-Berks complex, 8 to 35 percent slopes, very rocky

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Shoulder, footslopes, and backslopes
Size of areas: 10 to 50 acres
Shape of areas: Irregular or very long and broad
Note: 2 to 10 percent of this map unit is covered with rock outcrops

Map Unit Composition

Grimsley and similar soils: Typically 40 percent, ranging from about 35 to 40 percent
Cedarcreek and similar soils: Typically 30 percent, ranging from about 25 to 30 percent
Berks and similar soils: Typically 25 percent, ranging from about 20 to 25 percent

Typical Profile

Grimsley

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 2 inches—dark grayish brown loam

Subsurface layer:
2 to 10 inches—yellowish brown channery loam

Subsoil:
10 to 60 inches—yellowish brown very channery clay loam

Cedarcreek

Surface layer:
0 to 4 inches—very dark grayish brown extremely stony loam

Substratum:
4 to 26 inches—dark yellowish brown and dark grayish brown extremely stony loam
26 to 58 inches—yellowish brown extremely stony loam
58 to 72 inches—dark grayish brown very channery loam

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Lily soils, which are moderately deep, formed in residuum derived from sandstone, and have fewer rock fragments than the Grimsley, Cedarcreek, and Berks soils
- Areas of moderately well drained soils; in drainageways

Similar components:
- Areas of Alticrest soils, which formed in residuum derived from sandstone and have more sand and fewer rock fragments than the Berks soil
- Areas of Gilpin soils, which formed in residuum derived from shale and have fewer rock fragments than the Berks soil

Soil Properties and Qualities

Available water capacity: Grimsley—low (about 5.0 inches); Cedarcreek—moderate (about 7.2 inches); Berks—very low (about 2.5 inches)
Slowest saturated hydraulic conductivity: Grimsley—high (about 1.98 in/hr); Cedarcreek and Berks—moderately high (about 0.57 in/hr)
Depth class: Grimsley and Cedarcreek—very deep (more than 60 inches); Berks—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Grimsley—40 to 80 inches to bedrock (lithic); Cedarcreek—more than 60 inches; Berks—20 to 40 inches to bedrock (lithic)
Drainage class: Grimsley—somewhat excessively drained; Cedarcreek and Berks—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Grimsley and Cedarcreek—medium; Berks—high
Surface fragments: Grimsley and Cedarcreek—about 0.10 to 3.00 percent subangular stones; Berks—none
Parent material: Grimsley—colluvium derived from sandstone and shale; Cedarcreek—mine spoil derived from sandstone, siltstone, shale, and coal; Berks—residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone
Distinctive soil property: Cedarcreek soil is subject to differential settling

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Rock fragments on the surface may restrict the operation of farm machinery.
- Rock outcrops may limit machinery operations.

Woodland

Suitability: Moderately suited to southern red oak, northern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: Grimsley—CC; Cedarcreek and Berks—JJ
Hydric soils: No

25E—Grimsley-Cedarcreek-Berks complex, 35 to 70 percent slopes, rocky

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Ridges and spurs
Position on the landform: Shoulder, footslopes, and backslopes
Size of areas: 10 to 500 acres
Shape of areas: Irregular or very long and broad
Note: 1 to 2 percent of this map unit is covered with rock outcrops

Map Unit Composition

Grimsley and similar soils: Typically 40 percent, ranging from about 35 to 40 percent
Cedarcreek and similar soils: Typically 35 percent, ranging from about 30 to 35 percent
Berks and similar soils: Typically 20 percent, ranging from about 20 to 25 percent

Typical Profile

Grimsley

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 2 inches—dark grayish brown loam

Subsurface layer:
2 to 10 inches—yellowish brown channery loam

Subsoil:
10 to 60 inches—yellowish brown very channery clay loam

Cedarcreek

Surface layer:
0 to 4 inches—very dark grayish brown extremely stony loam

Substratum:
4 to 26 inches—dark yellowish brown and dark grayish brown extremely stony loam
26 to 58 inches—yellowish brown extremely stony loam
58 to 72 inches—dark grayish brown very channery loam

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Lily soils, which are moderately deep, formed in residuum derived from sandstone, and have fewer rock fragments than the Grimsley, Cedarcreek, and Berks soils
- Areas of moderately well drained soils; in drainageways

Similar components:
- Areas of Alticrest soils, which formed in residuum derived from sandstone and have more sand and fewer rock fragments than the Berks soil
- Areas of Gilpin soils, which formed in residuum derived from shale and have fewer rock fragments than the Berks soil

Soil Properties and Qualities

Available water capacity: Grimsley—low (about 5.0 inches); Cedarcreek—moderate (about 7.2 inches); Berks—very low (about 2.5 inches)
Slowest saturated hydraulic conductivity: Grimsley—high (about 1.98 in/hr); Cedarcreek and Berks—moderately high (about 0.57 in/hr)
Depth class: Grimsley and Cedarcreek—very deep (more than 60 inches); Berks—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Grimsley—40 to 80 inches to bedrock (lithic); Cedarcreek—more than 60 inches; Berks—20 to 40 inches to bedrock (lithic)
Drainage class: Grimsley—somewhat excessively drained; Cedarcreek and Berks—well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Grimsley and Cedarcreek—medium; Berks—high
Surface fragments: Grimsley and Cedarcreek—about 0.10 to 3.00 percent subangular stones; Berks—none
Parent material: Grimsley—colluvium derived from sandstone and shale; Cedarcreek—mine spoil derived from sandstone, siltstone, shale, and coal; Berks—residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone
Distinctive soil property: Cedarcreek soil is subject to differential settling

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to southern red oak, northern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Grimsley—CC; Cedarcreek and Berks—JJ
Hydric soils: No

26B—Groseclose silt loam, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 90 acres
Shape of areas: Long and winding or irregular

Map Unit Composition

Groseclose and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown silt loam

Subsoil:
5 to 11 inches—brown silty clay loam
11 to 52 inches—yellowish red clay

Substratum:
52 to 61 inches—yellowish red silty clay loam

Minor Components

Dissimilar components:
- Areas of Guernsey soils, which are moderately well drained; in the most gently sloping areas of the map unit
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of very deep soils that have a surface layer and subsoil more than 60 inches thick; scattered throughout the map unit
- Areas of deep, clayey soils scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from limestone interbedded with shale, siltstone, and sandstone

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: M
Hydric soil: No

26C—Groseclose silt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and footslopes
Size of areas: 5 to 50 acres
Shape of areas: Long and winding or irregular

Map Unit Composition

Groseclose and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown silt loam

Subsoil:
5 to 11 inches—brown silty clay loam
11 to 52 inches—yellowish red clay

Substratum:
52 to 61 inches—yellowish red silty clay loam

Minor Components

Dissimilar components:
- Areas of moderately well drained Guernsey soils; in the most gently sloping parts of the map unit
- Areas of Gilpin soils in the higher landscape positions
- Areas of rock outcrop scattered throughout the map unit

Similar components:
- Areas of very deep soils that have a surface layer and subsoil more than 60 inches thick; scattered throughout the map unit
- Areas of deep, clayey soils scattered throughout the map unit
- Areas of deep, fine-loamy soils scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)

Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from limestone interbedded with shale, siltstone, and sandstone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: M
Hydric soil: No

26D—Groseclose silt loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, backslopes, and footslopes
Size of areas: 5 to 60 acres
Shape of areas: Long and winding or irregular

Map Unit Composition

Groseclose and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown silt loam

Subsoil:
5 to 11 inches—brown silty clay loam
11 to 52 inches—yellowish red clay

Substratum:
52 to 61 inches—yellowish red silty clay loam

Minor Components

Dissimilar components:
- Areas of Gilpin soils, which are moderately deep and have less clay than the Groseclose soil; in the higher landscape positions
- Areas of Litz soils, which are moderately deep and have less clay and more rock fragments than the Groseclose soil; in the higher landscape positions
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of very deep soils that have a surface layer and subsoil more than 60 inches thick; scattered throughout the map unit
- Areas of very deep soils that have a solum that is thinner that that of the Groseclose soil; scattered throughout the map unit
- Areas of deep, fine-loamy soils scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)

Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone interbedded with shale, siltstone, and sandstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: M
Hydric soil: No

26E—Groseclose silt loam, 25 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 50 acres
Shape of areas: Long and winding or irregular

Map Unit Composition

Groseclose and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 5 inches—dark yellowish brown silt loam

Subsoil:
5 to 11 inches—brown silty clay loam
11 to 52 inches—yellowish red clay

Substratum:
52 to 61 inches—yellowish red silty clay loam

Minor Components

Dissimilar components:
- Areas of Carbo soils, which are moderately deep; near rock outcrops
- Areas of Gilpin soils, which are moderately deep and have less clay than the Groseclose soil; in the higher landscape positions
- Areas of Litz soils, which are moderately deep and have less clay and more rock fragments than the Groseclose soil; in the higher landscape positions
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of very deep soils that have a surface layer and subsoil more than 60 inches thick; scattered throughout the map unit

- Areas of very deep soils that have a thinner solum than the Groseclose soil; scattered throughout the map unit
- Areas of deep soils that have less clay than the Groseclose soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from limestone interbedded with shale, siltstone, and sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: M
Hydric soil: No

27B—Guernsey silt loam, 2 to 7 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Base of slopes of hills
Position on the landform: Footslopes and toeslopes
Size of areas: 5 to 50 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Guernsey and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 10 inches—brown silt loam

Subsoil:
10 to 21 inches—yellowish brown silty clay loam
21 to 44 inches—strong brown silty clay loam; light gray iron depletions
44 to 56 inches—strong brown silty clay loam; yellowish brown masses of oxidized iron

Substratum:
56 to 61 inches—light gray silty clay; strong brown masses of oxidized iron

Minor Components

Dissimilar components:
- Areas of Allegheny soils, which are well drained and have less clay than the Guernsey soil; in landscape positions similar to or higher than those of the Guernsey soil
- Areas of moderately deep, moderately well drained soils that formed in residuum derived from shale; on the higher parts of the landscape

Similar components:
- Areas of Coursey soils, which have less clay than the Guernsey soil; on similar landscapes
- Areas of Guernsey soils on 0 to 2 percent slopes; in landscape positions similar to or lower than those of this Guernsey soil
- Areas of somewhat poorly drained soils in landscape positions similar to or slightly lower than those of the Guernsey soil

Soil Properties and Qualities

Available water capacity: High (about 9.0 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: 50 to 80 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Medium
Surface fragments: None
Parent material: Residuum and colluvium derived from sandstone, siltstone, shale, and limestone

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: M
Hydric soil: No

27C—Guernsey silt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Base of slopes of hills
Position on the landform: Footslopes
Size of areas: 5 to 50 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Guernsey and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 10 inches—brown silt loam

Subsoil:
10 to 21 inches—yellowish brown silty clay loam
21 to 44 inches—strong brown silty clay loam; light gray iron depletions
44 to 56 inches—strong brown silty clay loam; yellowish brown masses of oxidized iron

Substratum:
56 to 61 inches—light gray silty clay; strong brown masses of oxidized iron

Minor Components

Dissimilar components:
- Areas of Allegheny soils, which are well drained and have less clay than the

Guernsey soil; in landscape positions similar to or higher than those of the Guernsey soil
- Areas of moderately deep, moderately well drained soils that formed in residuum derived from shale; on the higher parts of the landscape

Similar components:
- Areas of somewhat poorly drained soils; in landscape positions similar to or slightly lower than those of the Guernsey soil
- Areas of Coursey soils which have less clay the Guernsey soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 9.0 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: 50 to 80 inches to bedrock (paralithic)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Medium
Surface fragments: None
Parent material: Residuum and colluvium derived from sandstone, siltstone, shale, and limestone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.

- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: M
Hydric soil: No

28C—Lily fine sandy loam, 7 to 15 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits and shoulders
Size of areas: 5 to 30 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Lily and similar soils: Typically 85 percent, ranging from about 80 to 85 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 30 inches—yellowish brown clay loam

Substratum:
30 to 36 inches—yellowish brown gravelly sandy loam

Hard bedrock:
36 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Berks soils, which formed in residuum derived from shale and have more shale fragments than the Lily soil; in similar landscape positions
- Areas Grimsley soils, which are deep colluvium; in drainageways
- Areas of Wallen soils which have more rock fragments than the Lily soil; scattered throughout the map unit, mainly on nose slopes and summits
- Areas of soils that formed in residuum derived from shale and that are less than 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that formed in residuum derived from shale and that are more than 40 inches deep to bedrock; scattered throughout the map unit
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Alticrest soils, which have more sand and less clay than the Lily soil; scattered throughout the map unit
- Areas of Gilpin soils, which formed in residuum derived from shale and have more silt and less sand than the Lily soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 4.2 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: U
Hydric soil: No

28D—Lily fine sandy loam, 15 to 25 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 50 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Lily and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 30 inches—yellowish brown clay loam

Substratum:
30 to 36 inches—yellowish brown gravelly sandy loam

Hard bedrock:
36 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Berks soils, which formed in residuum derived from shale and have more shale fragments than the Lily soil; in similar landscape positions
- Areas of Grimsley soils, which are deep and colluvial; in drainageways
- Areas of Wallen soils that have more rock fragments than the Lily soil; scattered throughout the map unit, especially on nose slopes and summits
- Areas of soils that formed in residuum derived from shale and that are less than 20 inches deep to bedrock; scattered throughout the map unit
- Areas of colluvial soils that are more than 40 inches deep to bedrock and have a fragipan; on footslopes
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Alticrest soils, which have more sand and less clay than the Lily soil; scattered throughout the map unit
- Areas of Gilpin soils, which formed in residuum derived from shale and have more silt and less sand than the Lily soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 4.2 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.

- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to chestnut oak; moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: U
Hydric soil: No

28E—Lily fine sandy loam, 25 to 35 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 100 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Lily and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 30 inches—yellowish brown clay loam

Substratum:
30 to 36 inches—yellowish brown gravelly sandy loam

Hard bedrock:
36 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Berks soils, which formed in residuum derived from shale and have more shale fragments than the Lily soil; in similar landscape positions
- Areas of Grimsley soils, which are deep and colluvial; in drainageways
- Areas of Wallen soils, which have more rock fragments than the Lily soil; scattered throughout the map unit, especially on nose slopes and summits
- Areas of soils that formed in residuum derived from shale and that are less than 20 inches deep to bedrock; scattered throughout the map unit
- Areas of moderately well drained soils on benches and footslopes
- Areas of soils that formed in residuum derived from shale and that are more than 40 inches deep to bedrock; scattered throughout the map unit
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Alticrest soils, which have more sand and less clay than the Lily soil; scattered throughout the map unit
- Areas of Gilpin soils, which formed in residuum derived from shale and have more silt and less sand than the Lily soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 4.2 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained

Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Well suited to chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: U
Hydric soil: No

28F—Lily fine sandy loam, 35 to 65 percent slopes

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Shoulders and backslopes
Size of areas: 5 to 150 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Lily and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 30 inches—yellowish brown clay loam

Substratum:
30 to 36 inches—yellowish brown gravelly sandy loam

Hard bedrock:
36 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Berks soils, which formed in residuum derived from shale and have more shale fragments than the Lily soil; in similar landscape positions
- Areas of Grimsley soils, which are deep and colluvial; in drainageways
- Areas of Wallen soils, which have more rock fragments than the Lily soil; scattered throughout the map unit, especially on nose slopes and summits
- Areas of soils that formed in residuum derived from shale and that are less than 20 inches deep to bedrock; scattered throughout the map unit
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Alticrest soils, which have more sand and less clay than the Lily soil; scattered throughout the map unit
- Areas of Gilpin soils, which formed in residuum derived from shale and have more silt and less sand than the Lily soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Low (about 4.2 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)

Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e

Virginia soil management group: U
Hydric soil: No

29D—Lily fine sandy loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 100 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Lily and similar soils: Typically 80 percent, ranging from about 75 to 80 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 30 inches—yellowish brown clay loam

Substratum:
30 to 36 inches—yellowish brown gravelly sandy loam

Hard bedrock:
36 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Berks soils, which formed in residuum derived from shale and have shale fragments; in the lower landscape positions
- Areas of Brushy soils, which formed in cherty limestone and have more chert fragments than the Lily soil; in the lower landscape positions
- Areas of Murrill soils, which are very deep and colluvial; in the lower landscape positions
- Areas of Oriskany soils, which are very deep and colluvial and have more rock fragments than the Lily soil; in drainageways

Similar components:
- Areas of deep soils that formed in residuum derived from sandstone; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 4.2 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None

Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: U
Hydric soil: No

29E—Lily fine sandy loam, 35 to 65 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 100 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Lily and similar soils: Typically 85 percent, ranging from about 80 to 85 percent

Typical Profile

Organic layer:
2 inches to 0—undecomposed hardwood leaves and twigs

Surface layer:
0 to 4 inches—brown fine sandy loam

Subsoil:
4 to 30 inches—yellowish brown clay loam

Substratum:
30 to 36 inches—yellowish brown gravelly sandy loam

Hard bedrock:
36 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Alticrest soils, which have more sand and less clay than the Lily soil; scattered throughout the map unit
- Areas of Berks soils, which formed in residuum derived from shale and have more shale fragments than the Lily soil; in the lower landscape positions
- Areas of Brushy soils, which formed in cherty limestone and have more chert fragments than the Lily soil; in the lower landscape positions
- Areas of Murrill soils, which are colluvial and very deep; in the lower landscape positions
- Areas of Oriskany soils, which are colluvial and very deep and have more rock fragments than the Lily soil; in drainageways
- Areas of Weikert soils, which are shallow, formed in residuum derived from shale, and have more shale fragments than the Lily soil; in the lower landscape positions

Similar components:
- Areas of deep soils that formed in residuum derived from sandstone; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 4.2 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet

Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Residuum weathered from sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Well suited to chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: U
Hydric soil: No

30C—Madsheep channery silt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Summits and shoulders
Size of areas: 5 to 10 acres
Shape of areas: Irregular or long and broad

Map Unit Composition

Madsheep and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Organic layer:
3 inches to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 5 inches—dark brown channery silt loam

Subsoil:
5 to 22 inches—yellowish red very channery silt loam

Substratum:
22 to 25 inches—reddish brown extremely channery silt loam

Hard bedrock:
25 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Paddyknob soils, which formed in residuum derived from sandstone, have more sand and less silt than the Madsheep soil, and are yellower; in the higher landscape positions
- Areas of rock outcrops in the higher landscape positions

Similar components:
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 3.1 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None

Parent material: Residuum weathered from acid red shale interbedded with fine-grained sandstone, mudstone, and siltstone

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn and grass-legume hay; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The bedrock restricts the rooting depth of crops.
- Because of the limited available water capacity, plants may suffer from moisture stress.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: JJ
Hydric soil: No

30D—Madsheep channery silt loam, 15 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 10 to 50 acres
Shape of areas: Irregular or long and broad

Map Unit Composition

Madsheep and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
3 inches to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 5 inches—dark brown channery silt loam

Subsoil:
5 to 22 inches—yellowish red very channery silt loam

Substratum:
22 to 25 inches—reddish brown extremely channery silt loam

Hard bedrock:
25 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Paddyknob soils, which formed in residuum derived from sandstone, have more sand and less silt than the Madsheep soil, and are yellower; in the higher landscape positions
- Areas of rock outcrops in the higher landscape positions

Similar components:
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 3.1 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None

Parent material: Residuum weathered from acid red shale interbedded with fine-grained sandstone, mudstone, and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.
- Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
- The bedrock may restrict the rooting depth of plants.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: JJ
Hydric soil: No

31E—Madsheep channery silt loam, 35 to 55 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 10 to 50 acres
Shape of areas: Irregular or long and broad

Map Unit Composition

Madsheep and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Organic layer:
3 inches to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 5 inches—dark brown channery silt loam

Subsoil:
5 to 22 inches—yellowish red very channery silt loam

Substratum:
22 to 25 inches—reddish brown extremely channery silt loam

Hard bedrock:
25 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Paddyknob soils, which formed in residuum derived from sandstone, have more sand and less silt than the Madsheep soil, and are yellower; in the upper landscape positions
- Areas of rock outcrops that are scattered throughout the map unit but are mostly on nose slopes and in the upper landscape positions

Similar components:
- Areas of Madsheep channery silt loam that are scattered throughout the map unit but are mostly in the lower landscape positions
- Areas of soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 3.1 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None

Shrink-swell potential: Low
Runoff class: High
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Residuum weathered from acid red shale interbedded with fine-grained sandstone, mudstone, and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soil: No

32A—Melvin silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Flood plains
Position on the landform: Backswamps and toeslopes
Size of areas: 5 to 100 acres
Shape of areas: Long and winding

Map Unit Composition

Melvin and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 3 inches—dark yellowish brown silt loam
3 to 10 inches—light brownish gray silt loam; brown iron-manganese masses

Subsoil:
10 to 30 inches—dark grayish brown and dark gray silt loam; brown iron-manganese masses

Substratum:
30 to 50 inches—dark gray silt loam
50 to 62 inches—dark gray gravelly sandy loam

Minor Components

Dissimilar components:
- Areas of Lindside soils, which are moderately well drained; in landscape positions similar to or slightly higher than those of the Melvin soil
- Areas of soils that have a thick, dark surface layer; scattered throughout the map unit
- Areas of soils that have a gravelly or very gravelly solum; scattered throughout the map unit

Similar components:
- Areas of Newark soils, which are somewhat poorly drained; in landscape positions similar to or slightly higher than those of the Melvin soil
- Areas of soils that are more than 35 percent clay in the subsoil; scattered throughout the map unit
- Areas of soils that have more sand and less silt in the control section than the Melvin soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Very high (about 12.5 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 to 12 inches
Water table kind: Apparent
Flooding hazard: Frequent
Ponding hazard: Frequent

Depth of ponding: 0.0 to 1.0 foot
Shrink-swell potential: Low
Runoff class: Negligible
Surface fragments: None
Parent material: Alluvium derived from limestone, shale, siltstone, and sandstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Poorly suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to sweetgum
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable Best Management Practices (BMPs).
- Flooding may damage haul roads.
- Flooding and ponding restrict the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- Flooding and ponding are limitations affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- Flooding and ponding are limitations affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- Ponding affects the ease of excavation and grading and limits the bearing capacity of the soil.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6w
Virginia soil management group: NN
Hydric soil: Yes

33—Mine Tipples, Dumps, and Tailings

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125)
Landform: Areas of coal mines
Position on the landform: Variable
Size of areas: 5 to 25 acres
Shape of areas: Irregular

Map Unit Composition

Mine Dumps: Typically 55 percent, ranging from about 50 to 60 percent
Mine Tailings: Typically 35 percent, ranging from about 30 to 40 percent
Mine Tipples: Typically 8 percent, ranging from about 5 to 10 percent

Typical Profile

Mine dumps consist of waste piles of refuse from the mining of coal and associated shale and sandstone fragments. Mine tailings consist of sediment ponds containing waste from the mining of coal and associated shale and sandstone fragments. Mine tipples consist of areas of buildings and equipment for collecting coal from loaded rail-cars or conveyor belts. Due to the variability of the materials, a typical profile is not given.

Use and Management Considerations

Onsite investigation is needed to determine the suitability of any area of this map unit for specific uses.

34B—Murrill silt loam, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Base of slopes of ridges and spurs
Position on the landform: Footslopes (fig. 4)
Size of areas: 5 to 50 acres
Shape of areas: Long and narrow or broad and irregular

Map Unit Composition

Murrill and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 10 inches—brown silt loam

Subsoil:
10 to 22 inches—strong brown silt loam
22 to 44 inches—strong brown clay loam
44 to 56 inches—yellowish red and strong brown gravelly clay
56 to 61 inches—strong brown gravelly clay

Minor Components

Dissimilar components:
- Areas of moderately deep soils near the edges of the map unit

Figure 4.—Stripcropping on Murrill silt loam, 2 to 7 percent slopes.

Similar components:
- Areas of Timberville soils in drainageways
- Areas of clayey, colluvial soils scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 7.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Colluvium derived from acid sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak, yellow-poplar, and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: L
Hydric soil: No

34C—Murrill silt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Base of slopes of ridges and spurs
Position on the landform: Footslopes (fig. 5)
Size of areas: 5 to 110 acres
Shape of areas: Long and narrow or broad and irregular

Map Unit Composition

Murrill and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 10 inches—brown silt loam

Subsoil:
10 to 22 inches—strong brown silt loam
22 to 44 inches—strong brown clay loam
44 to 56 inches—yellowish red and strong brown gravelly clay
56 to 61 inches—strong brown gravelly clay

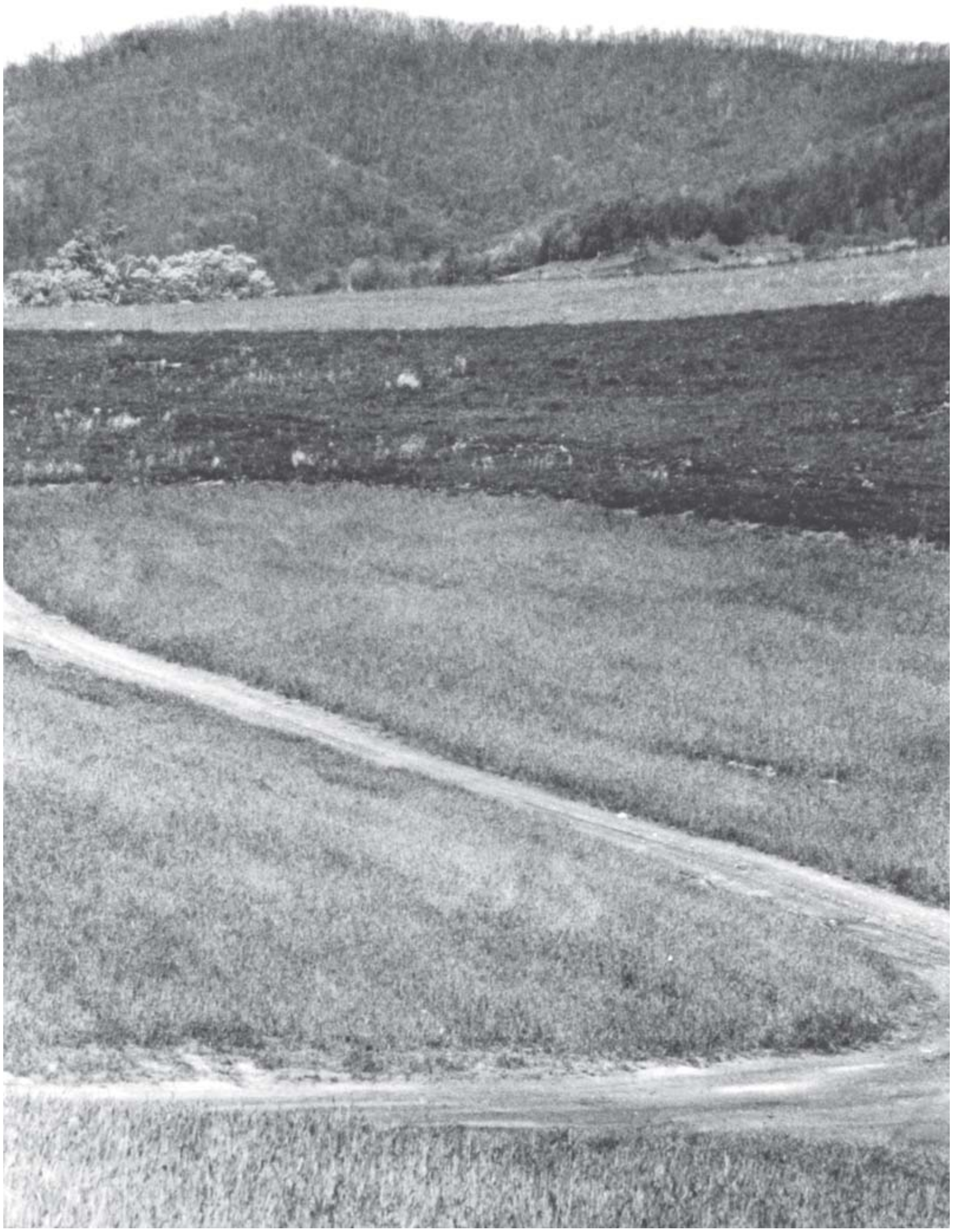


Figure 5.—A contoured hayfield in an area of Murrill silt loam, 7 to 15 percent slopes, is in the foreground. Areas of Frederick gravelly silt loam, 7 to 15 percent slopes, and Frederick gravelly silt loam, 15 to 25 percent slopes, are on the hilltop.

Minor Components

Dissimilar components:

- Areas of Oriskany soils, which have a gravelly or cobbly surface layer; on landscapes similar to those of the Murrill soil and in the higher, colluvial areas
- Areas of moderately deep soils near the edges of the map unit

Similar components:
- Areas of clayey, colluvial soils scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 7.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Colluvium derived from acid sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak, yellow-poplar, and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: L
Hydric soil: No

34D—Murrill silt loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Base of slopes of ridges and spurs
Position on the landform: Footslopes
Size of areas: 5 to 40 acres
Shape of areas: Long and narrow or broad and irregular

Map Unit Composition

Murrill and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 10 inches—brown silt loam

Subsoil:
10 to 22 inches—strong brown silt loam
22 to 44 inches—strong brown clay loam
44 to 56 inches—yellowish red and strong brown gravelly clay
56 to 61 inches—strong brown gravelly clay

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which have a loamy-skeletal control section; on landscapes similar to those of the Murrill soil and in the higher, colluvial areas

Similar components:
- Areas of clayey, colluvial soils that are scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 7.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.20 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High

Surface fragments: None
Parent material: Colluvium derived from acid sandstone and shale

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
• The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
• The risk of compaction increases when the soil is wet.
• Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
• The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak, yellow-poplar, and eastern white pine
• Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
• The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
• Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
• The slope may restrict the use of some mechanical planting equipment.
• The low soil strength interferes with the construction of haul roads and log landings.
• The low soil strength may create unsafe conditions for log trucks.
• The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

• The slope influences the use of machinery and the amount of excavation required.
• The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

• The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

• The low soil strength is unfavorable for supporting heavy loads.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: L
Hydric soil: No

35A—Newark-Lindside complex, 0 to 3 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Flood plains
Position on the landform: Toeslopes
Size of areas: 3 to 125 acres
Shape of areas: Long and narrow or irregular

Map Unit Composition

Newark and similar soils: Typically 45 percent, ranging from about 40 to 45 percent
Lindside and similar soils: Typically 40 percent, ranging from about 40 to 45 percent

Typical Profile

Newark

Surface layer:
0 to 5 inches—dark brown silt loam

Subsoil:
5 to 19 inches—grayish brown and brown silt loam; strong brown iron-manganese masses
19 to 30 inches—grayish brown silty clay loam; brown iron-manganese masses

Substratum:
30 to 45 inches—gray silty clay loam; dark yellowish brown and yellowish brown iron-manganese masses
45 to 61 inches—dark gray silty clay loam; yellowish brown masses of oxidized iron and strong brown iron-manganese masses

Lindside

Surface layer:
0 to 9 inches—brown silt loam

Subsoil:
9 to 20 inches—brown silty clay loam
20 to 51 inches—grayish brown silty clay loam; dark yellowish brown iron-manganese masses

Substratum:
51 to 61 inches—dark gray silty clay loam; greenish gray and gray iron depletions

Minor Components

Dissimilar components:
- Areas of Guernsey soils, which have more clay and less sand than the Newark and Lindside soils; on footslopes
- Areas of Philo soils, which are subject to frequent flooding and have more sand and less clay than the Newark and Lindside soils
- Areas of Timberville soils, which have more clay than the Newark and Lindside soils; in the higher landscape positions
- Areas of poorly drained soils that have more sand and less silt than the Newark and Lindside soils and that are subject to frequent flooding; in landscape positions similar to or lower than those of the Newark and Lindside soils
- Areas of well drained soils that have more sand and less silt than the Newark and

Lindside soils; in landscape positions similar to or higher than those of the Newark and Lindside soils
- Areas of poorly drained soils that have a thick, dark surface layer and that are subject to frequent flooding; in landscape positions similar to or lower than those of the Newark and Lindside soils
- Areas of poorly drained and somewhat poorly drained soils that have more clay than the Newark and Lindside soils; in the higher landscape positions
- Areas of soils that formed in limestone residuum and have more clay than the Newark and Lindside soils; in similar landscape positions

Similar components:
- Areas of Melvin soils, which are poorly drained and subject to frequent flooding; in slight depressions and in landscape positions similar to those of the Newark and Lindside soils
- Areas of soils that have more sand and less silt than the Newark and Lindside soils; in similar landscape positions
- Areas of soils that have more clay in the subsoil than the Newark and Lindside soils; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 11.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Newark—somewhat poorly drained; Lindside—moderately well drained
Depth to seasonal water saturation: Newark—about 6 to 18 inches; Lindside—about 18 to 36 inches
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Newark—very high; Lindside—low
Surface fragments: None
Parent material: Alluvium derived from limestone

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn; not suited to grass-legume hay and alfalfa hay
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Flooding may damage crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pastureland

Suitability: Moderately suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.

- Compaction may occur when the soils are wet.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable Best Management Practices (BMPs).
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Flooding is a limitation affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
Land capability class: Newark—4w; Lindside—2w
Virginia soil management group: Newark—NN; Lindside—G
Hydric soils: No

36F—Newbern-Rock outcrop complex, 25 to 70 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Newbern—hills; Rock outcrop—escarpments
Position on the landform: Backslopes along streams
Size of areas: 5 to 50 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Newbern and similar soils: Typically 65 percent, ranging from about 60 to 70 percent
Rock outcrop: Typically 30 percent, ranging from about 25 to 35 percent

Typical Profile

Newbern

Surface layer:
0 to 5 inches—dark yellowish brown silt loam

Subsoil:
5 to 14 inches—dark yellowish brown silt loam

Hard bedrock:
14 inches—limestone bedrock

Rock outcrop

This part of the map unit consists of outcrops of hard limestone interbedded with shale.

Minor Components

Dissimilar components:
- Areas of Carbo soils, which are moderately deep and have more clay than the Newbern soil; generally near the edges of the map unit
- Areas of soils that are less than 20 inches deep to bedrock and that have more clay than the Newbern soil; generally near the edges of the map unit

Similar components:
- Areas of Newbern loam scattered throughout the map unit
- Areas of Newbern channery or gravelly silt loam scattered throughout the map unit
- Areas of soils that are silty clay loam in the subsoil; scattered throughout the map unit

Properties and Qualities of the Newbern Soil

Available water capacity: Very low (about 2.0 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Shallow (10 to 20 inches)
Depth to root-restrictive feature: 10 to 20 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: None
Parent material: Mainly residuum weathered from limestone; in some places limestone interbedded with shale or siltstone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber

harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The low soil strength interferes with the construction of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- The low soil strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Newbern—7s; Rock outcrop—8s
Virginia soil management group: Newbern—JJ; Rock outcrop—none assigned
Hydric soils: No

37C—Oriskany gravelly fine sandy loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges, spurs, and drainageways
Position on the landform: Footslopes
Size of areas: 5 to 75 acres
Shape of areas: Irregular

Map Unit Composition

Oriskany and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 6 inches—dark brown gravelly fine sandy loam

Subsurface layer:
6 to 14 inches—yellowish brown very cobbly fine sandy loam

Subsoil:
14 to 61 inches—strong brown extremely stony sandy clay loam

Minor Components

Dissimilar components:
- Areas of Craigsville soils, which have less clay than the Oriskany soil and are subject to frequent flooding; on flood plains along small streams

Similar components:
- Areas of Murrill soils, which have fewer rock fragments throughout and have more clay in the subsoil than the Oriskany soil; scattered throughout the map unit
- Areas of Oriskany soils on 2 to 7 percent slopes
- Areas of soils that have more clay throughout than the Oriskany soil; scattered throughout the map unit
- Areas of soils that have more silt throughout than the Oriskany soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 5.9 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Colluvium derived from acid sandstone, siltstone, and shale

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay, poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.

- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: CC
Hydric soil: No

37D—Oriskany gravelly fine sandy loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges, spurs, and drainageways
Position on the landform: Footslopes
Size of areas: 5 to 50 acres
Shape of areas: Irregular

Map Unit Composition

Oriskany and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 6 inches—dark brown gravelly fine sandy loam

Subsurface layer:
6 to 14 inches—yellowish brown very cobbly fine sandy loam

Subsoil:
14 to 61 inches—strong brown extremely stony sandy clay loam

Minor Components

Dissimilar components:
- Areas of Craigsville soils, which are subject to frequent flooding and have less clay than the Oriskany soil; on flood plains along small streams

Similar components:
- Areas of Murrill soils that have fewer rock fragments throughout and that have more clay in the subsoil than the Oriskany soil; scattered throughout the map unit
- Areas of soils that have more clay throughout the profile than the Oriskany soil; scattered throughout the map unit
- Areas of soils that have more silt throughout than the Oriskany soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 5.9 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Colluvium derived from acid sandstone, siltstone, and shale

Use and Management Considerations

Cropland

Suitability: Moderately suited to grass-legume hay; poorly suited to corn; not suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.

- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: CC
Hydric soil: No

38C—Oriskany gravelly fine sandy loam, 7 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges, spurs, and drainageways
Position on the landform: Footslopes (fig. 6)
Size of areas: 5 to 100 acres
Shape of areas: Irregular

Map Unit Composition

Oriskany and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 6 inches—dark brown gravelly fine sandy loam

Subsurface layer:
6 to 14 inches—yellowish brown very cobbly fine sandy loam

Subsoil:
14 to 61 inches—strong brown extremely stony sandy clay loam

Minor Components

Dissimilar components:
- Areas of Craigsville soils, which are subject to frequent flooding and have less clay than the Oriskany soil; on flood plains along small streams

Similar components:
- Areas of Murrill soils, which have fewer rock fragments throughout and more clay in the subsoil than the Oriskany soil; scattered throughout the map unit
- Areas of Oriskany soils on 2 to 7 percent slopes
- Areas of soils that have more clay throughout than the Oriskany soil; scattered throughout the map unit

Figure 6.—Pasture in an area of Oriskany gravelly fine sandy loam, 7 to 15 percent slopes, very stony.

- Areas of soils that have more silt throughout than the Oriskany soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 5.9 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Colluvium derived from acid sandstone, siltstone, and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Moderately suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Moderately suited to northern red oak, yellow-poplar, and eastern white pine

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: CC
Hydric soil: No

38D—Oriskany gravelly fine sandy loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges, spurs, and drainageways
Position on the landform: Footslopes and backslopes
Size of areas: 5 to 1,000 acres
Shape of areas: Irregular

Map Unit Composition

Oriskany and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 6 inches—dark brown gravelly fine sandy loam

Subsurface layer:
6 to 14 inches—yellowish brown very cobbly fine sandy loam

Subsoil:
14 to 61 inches—strong brown extremely stony sandy clay loam

Minor Components

Dissimilar components:
- Areas of Craigsville soils, which are subject to frequent flooding and have less clay than the Oriskany soil; on flood plains along small streams
- Areas of soils that have more than 35 percent clay and have fewer rock fragments than the Oriskany soil; scattered throughout the map unit
- Areas of soils that have a brittle layer in the subsoil; scattered throughout the map unit
- Areas of moderately deep soils that are generally on the higher landscapes of the map unit

Similar components:
- Areas of Murrill soils, which have fewer rock fragments throughout and have more clay in the subsoil than the Oriskany soil; scattered throughout the map unit
- Areas of soils that have more clay throughout than the Oriskany soil; scattered throughout the map unit
- Areas of soils that have more silt throughout than the Oriskany soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 5.9 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Colluvium derived from acid sandstone, siltstone, and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak, yellow-poplar, and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative

impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: CC
Hydric soil: No

38E—Oriskany gravelly fine sandy loam, 35 to 55 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges, spurs, and drainageways
Position on the landform: Footslopes and backslopes
Size of areas: 5 to 200 acres
Shape of areas: Irregular

Map Unit Composition

Oriskany and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 6 inches—dark brown gravelly fine sandy loam

Subsurface layer:
6 to 14 inches—yellowish brown very cobbly fine sandy loam

Subsoil:
14 to 61 inches—strong brown extremely stony sandy clay loam

Minor Components

Dissimilar components:
- Areas of Lily soils, which are moderately deep and formed in residuum derived from sandstone; in the higher landscape positions
- Areas of soils that are more than 35 percent clay and that have fewer rock fragments than the Oriskany soil; scattered throughout the map unit
- Areas of soils, scattered throughout the map unit, that have a brittle layer in the subsoil

Similar components:
- Areas of soils that have more clay throughout than the Oriskany soil; scattered throughout the map unit
- Areas of soils that have more silt throughout than the Oriskany soil; scattered throughout the map unit
- Areas of soils that have fewer rock fragments than the Oriskany soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Low (about 5.9 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 3.00 to 15.00 percent subangular stones
Parent material: Colluvium derived from acid sandstone, siltstone, and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak, yellow-poplar, and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: CC
Hydric soil: No

39D—Paddyknob-Rock outcrop complex, 15 to 35 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mainly mountains; some of the rock outcrops are escarpments
Position on the landform: Summits and shoulders
Size of areas: 5 to 50 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Paddyknob and similar soils: Typically 75 percent, ranging from about 70 to 75 percent
Rock outcrop: Typically 20 percent, ranging from about 15 to 20 percent

Typical Profile

Paddyknob

Organic layer:
2 inches to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—gravelly loam

Subsoil:
4 to 10 inches—strong brown gravelly loam
10 to 21 inches—strong brown very gravelly sandy loam

Substratum:
21 to 26 inches—strong brown very gravelly loam

Hard bedrock:
26 inches—sandstone bedrock

Rock outcrop

This part of the map unit consists of outcrops of hard sandstone.

Minor Components

Dissimilar components:
- Areas of Madsheep soils, which formed in residuum derived from shale, have more silt and less sand than the Paddyknob soil, and are redder; in the lower landscape positions

Similar components:
- Areas of Paddyknob channery loam scattered throughout the map unit
- Areas of Paddyknob sandy loam scattered throughout the map unit
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit, especially near rock outcrops
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Properties and Qualities of the Paddyknob Soil

Available water capacity: Very low (about 2.6 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 3.00 to 15.00 percent subangular stones
Parent material: Residuum weathered from acid sandstone interbedded with shale and siltstone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Poorly suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Paddyknob—7s; Rock outcrop—8s
Virginia soil management group: Paddyknob—JJ; Rock outcrop—none assigned
Hydric soils: No

39E—Paddyknob-Rock outcrop complex, 35 to 80 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mainly mountains; some of the rock outcrops are escarpments
Position on the landform: Shoulders and the upper part of backslopes
Size of areas: 5 to 100 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Paddyknob and similar soils: Typically 70 percent, ranging from about 65 to 70 percent
Rock outcrop: Typically 25 percent, ranging from about 20 to 25 percent

Typical Profile

Paddyknob

Organic layer:
2 inches to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—gravelly loam

Subsoil:
4 to 10 inches—strong brown gravelly loam
10 to 21 inches—strong brown very gravelly sandy loam

Substratum:
21 to 26 inches—strong brown very gravelly loam

Hard bedrock:
26 inches—sandstone bedrock

Rock outcrop

This part of the map unit consists of outcrops of hard sandstone.

Minor Components

Dissimilar components:
- Areas of Madsheep soils, which formed in residuum derived from shale, have more silt and less sand than the Paddyknob soil, and are redder; in the lower landscape positions

Similar components:
- Areas of Paddyknob channery loam scattered throughout the map unit
- Areas of Paddyknob sandy loam scattered throughout the map unit
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit, especially near rock outcrops
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Properties and Qualities of the Paddyknob Soil

Available water capacity: Very low (about 2.6 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 3.00 to 15.00 percent subangular stones
Parent material: Residuum weathered from acid sandstone interbedded with shale and siltstone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Poorly suited to northern red oak

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.

- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Paddyknob—7s; Rock outcrop—8s
Virginia soil management group: Paddyknob—JJ; Rock outcrop—none assigned
Hydric soils: No

40D—Paddyknob gravelly loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Summits and shoulders
Size of areas: 5 to 50 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Paddyknob and similar soils: Typically 85 percent, ranging from about 85 to 90 percent

Typical Profile

Organic layer:
2 inches to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—gravelly loam

Subsoil:
4 to 10 inches—strong brown gravelly loam
10 to 21 inches—strong brown very gravelly sandy loam

Substratum:
21 to 26 inches—strong brown very gravelly loam

Hard bedrock:
26 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Madsheep soils, which formed in residuum derived from shale, have more silt and less sand than the Paddyknob soil, and are redder; in the lower landscape positions
- Areas of rock outcrops that are scattered throughout the map unit

Similar components:
- Areas of Paddyknob channery loam scattered throughout the map unit
- Areas of Paddyknob sandy loam scattered throughout the map unit
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit, especially near rock outcrops
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Very low (about 2.6 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Residuum weathered from acid sandstone that is interbedded with shale and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Poorly suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: JJ
Hydric soil: No

40E—Paddyknob gravelly loam, 35 to 55 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mountains
Position on the landform: Shoulders and the upper part of backslopes
Size of areas: 5 to 60 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Paddyknob and similar soils: Typically 90 percent, ranging from about 90 to 95 percent

Typical Profile

Organic layer:
2 inches to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—gravelly loam

Subsoil:
4 to 10 inches—strong brown gravelly loam
10 to 21 inches—strong brown very gravelly sandy loam

Substratum:
21 to 26 inches—strong brown very gravelly loam

Hard bedrock:
26 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Madsheep soils, which formed in residuum derived from shale, have more silt and less sand than the Paddyknob soil, and are redder; in the lower landscape positions
- Areas of rock outcrop scattered throughout the map unit

Similar components:
- Areas of Paddyknob channery loam scattered throughout the map unit
- Areas of Paddyknob sandy loam scattered throughout the map unit
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit, especially near rock outcrops
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Very low (about 2.6 inches)
Slowest saturated hydraulic conductivity: High (about 5.95 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Residuum weathered from acid sandstone interbedded with shale and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Poorly suited to northern red oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soil: No

41A—Philo fine sandy loam, 0 to 3 percent slopes, frequently flooded

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Flood plains
Position on the landform: Toeslopes
Size of areas: 5 to 30 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Philo and similar soils: Typically 90 percent, ranging from about 80 to 95 percent

Typical Profile

Surface layer:
0 to 5 inches—very dark grayish brown fine sandy loam

Subsoil:
5 to 20 inches—dark yellowish brown fine sandy loam
20 to 44 inches—olive brown fine sandy loam; light brownish gray iron depletions and strong brown masses of oxidized iron

Substratum:
44 to 60 inches—light olive brown very cobbly sandy loam; strong brown masses of oxidized iron and light brownish gray iron depletions

Minor Components

Dissimilar components:
- Areas of Coursey soils, which are moderately well drained, are not subject to flooding, and have more clay than the Philo soil; in the higher landscape positions
- Areas of Grimsley soils, which have more rock fragments than the Philo soil; on footslopes
- Areas of well drained Pope soils that are in landscape positions subject to rare flooding
- Areas of poorly drained soils that are in the slightly lower landscape positions
- Areas of soils that were disturbed or covered during mining operations

Similar components:
- Areas of well drained Craigsville soils that have more rock fragments than the Philo soil; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Deep and very deep (40 to more than 60 inches)
Depth to root-restrictive feature: 40 to 80 inches to bedrock (lithic)
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table kind: Apparent
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn; moderately suited to grass-legume hay; not suited to alfalfa hay
- Excessive permeability increases the risk of ground-water contamination.
- Frequent flooding restricts the use of winter grain crops.
- Flooding may damage crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.

Woodland

Suitability: Well suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable Best Management Practices (BMPs).
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.

Building sites

- Flooding is a limitation affecting building site development.

- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.

Interpretive Groups

Prime farmland: Prime farmland if protected from flooding or not frequently flooded during the growing season
Land capability class: 3w
Virginia soil management group: H
Hydric soil: No

42B—Pisgah silt loam, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Valleys
Position on the landform: Summits and shoulders (figs. 7 and 8)
Size of areas: 5 to 500 acres
Shape of areas: Long and winding or broad and irregular

Map Unit Composition

Pisgah and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 2 inches—dark brown silt loam

Subsurface layer:
2 to 8 inches—brown silt loam

Subsoil:
8 to 13 inches—brown clay loam
13 to 50 inches—yellowish brown clay

Substratum:
50 to 65 inches—yellowish brown, strong brown, and brown clay; common brownish yellow mottles

Minor Components

Dissimilar components:
- Areas of Carbo soils, which are moderately deep and have more clay than the Pisgah soil; scattered throughout the map unit
- Areas of moderately well drained and somewhat poorly drained soils in depressions

Figure 7.—A hayfield in an area of Pisgah silt loam, 2 to 7 percent slopes.

- Areas of poorly drained soils in drainageways
- Areas of rock outcrop scattered throughout the map unit

Similar components:
- Areas of soils that have a surface layer of gravelly silt loam; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.

- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited

- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar

- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Figure 8.—A cultivated field in an area of Pisgah silt loam, 2 to 7 percent slopes. The wooded background is in an area of Westmoreland-Poplimento-Berks complex, 35 to 65 percent slopes.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: M
Hydric soil: No

42C—Pisgah silt loam, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Valleys
Position on the landform: Summits and shoulders
Size of areas: 5 to 50 acres
Shape of areas: Long and winding or irregular

Map Unit Composition

Pisgah and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 2 inches—dark brown silt loam

Subsurface layer:
2 to 8 inches—brown silt loam

Subsoil:
8 to 13 inches—brown clay loam
13 to 50 inches—yellowish brown clay

Substratum:
50 to 65 inches—yellowish brown, strong brown, and brown clay; common brownish yellow mottles

Minor Components

Dissimilar components:
- Areas of Carbo soils, which are moderately deep and have more clay than the Pisgah soil; scattered throughout the map unit
- Areas of moderately well drained and somewhat poorly drained soils in depressions
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of soils that have a surface layer of gravelly silt loam; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: M
Hydric soil: No

43B—Pisgah silt loam, karst, 2 to 7 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Valleys with karst topography
Position on the landform: Summits and shoulders
Size of areas: 5 to 650 acres
Shape of areas: Long and winding or broad and irregular
Note: Areas of this map unit have karst topography; many topographic depressions, such as sinkholes, occur

Map Unit Composition

Pisgah and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 2 inches—dark brown silt loam

Subsurface layer:
2 to 8 inches—brown silt loam

Subsoil:
8 to 13 inches—brown clay loam
13 to 50 inches—yellowish brown clay

Substratum:
50 to 65 inches—yellowish brown, strong brown, and brown clay; common brownish yellow mottles

Minor Components

Dissimilar components:
- Areas of Carbo soils, which are moderately deep and have more clay than the Pisgah soil
- Areas of moderately well drained and somewhat poorly drained soils in sinks and depressions
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of soils that have a surface layer of gravelly silt loam; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay and alfalfa hay; not suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Sinkholes (karst areas) increase the potential for ground-water contamination from the effluent from conventional septic systems; septic systems should not be placed near sinkholes.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Collapsing sinkholes may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 2e
Virginia soil management group: M
Hydric soil: No

43C—Pisgah silt loam, karst, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Valleys with karst topography
Position on the landform: Summits and shoulders
Size of areas: 5 to 450 acres
Shape of areas: Long and winding or broad and irregular
Note: Areas of this map unit have karst topography; many topographic depressions, such as sinkholes, occur

Map Unit Composition

Pisgah and similar soils: Typically 95 percent, ranging from about 90 to 95 percent

Typical Profile

Surface layer:
0 to 2 inches—dark brown silt loam

Subsurface layer:
2 to 8 inches—brown silt loam

Subsoil:
8 to 13 inches—brown clay loam
13 to 50 inches—yellowish brown clay

Substratum:
50 to 65 inches—yellowish brown, strong brown, and brown clay; common brownish yellow mottles

Minor Components

Dissimilar components:
- Areas of Carbo soils, which are moderately deep and have more clay than the Pisgah soil
- Areas of moderately well drained and somewhat poorly drained soils in sinks and depressions
- Areas of poorly drained soils in drainageways
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of soils that have a surface layer of gravelly silt loam; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from limestone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to alfalfa hay; not suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The potential for ground-water contamination is increased because of the karst (sinkhole) areas.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- Because of the potential for sinkhole collapse, building site development in karst areas is not recommended.

Septic tank absorption fields

- Sinkholes (karst areas) increase the potential for ground-water contamination from the effluent from conventional septic systems; septic systems should not be placed near sinkholes.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.
- Collapsing sinkholes may damage local roads and streets.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: M
Hydric soil: No

44—Pits, quarry

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills
Position on the landform: Variable
Size of areas: 20 to 100 acres
Shape of areas: Irregular

Map Unit Composition

Pits, quarry: Typically 100 percent, ranging from about 95 to 100 percent

Typical Profile

Pits, quarry, consist of open excavations from which soil and rock have been removed, exposing rock and other material. These pits are commonly limestone gravel quarries. Because of the variability of the materials, a typical profile is not given.

Use and Management Considerations

Onsite investigation is needed to determine the suitability of any area of this map unit for specific uses.

45A—Pope fine sandy loam, 0 to 2 percent slopes, rarely flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Flood plains

Figure 9.—A tobacco field and storage barn on Pope fine sandy loam, 0 to 2 percent slopes, rarely flooded.

Position on the landform: Toeslopes (fig. 9)
Size of areas: 3 to 100 acres
Shape of areas: Long and narrow or irregular

Map Unit Composition

Pope and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 8 inches—dark yellowish brown fine sandy loam

Subsoil:
8 to 15 inches—brown gravelly sandy loam
15 to 27 inches—strong brown sandy loam
27 to 45 inches—strong brown gravelly sandy loam

Substratum:
45 to 65 inches—strong brown very gravelly loamy sand

Minor Components

Dissimilar components:
- Areas of Philo soils, which are moderately well drained and are subject to frequent flooding; in the lower landscape positions
- Areas of soils that have a surface layer that is thicker and darker than that of the Pope soil; in similar landscape positions
- Areas of somewhat poorly drained soils that have more clay than the Pope soil; in landscape positions similar to or higher than those of the Pope soil

- Areas of somewhat poorly drained soils that are subject to occasional flooding; in the lower landscape positions
- Areas of moderately well drained soils that are subject to occasional flooding; in the lower landscape positions
- Areas of moderately well drained soils that have more clay and less sand than the Pope soil; on terraces

Similar components:
- Areas of Craigsville soils, which are subject to frequent flooding; in landscape positions lower than those of the Pope soil and in old stream channels
- Areas of soils that have more sand and less clay than the Pope soil and that are subject to occasional flooding; in landscape positions lower than those of the Pope soil and in old stream channels
- Areas of soils that have more clay and silt but less sand than the Pope soil; in similar landscape positions
- Areas of soils that are redder than the Pope soil

Soil Properties and Qualities

Available water capacity: Moderate (about 8.3 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: Rare
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very low
Surface fragments: None
Parent material: Alluvium derived from acid sandstone and shale

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay

Pastureland

- This soil is well suited to pastureland.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- This soil is well suited to haul roads and log landings and to equipment operations.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- Because of the excessive permeability, the proper treatment of the effluent from conventional septic systems is limited and the water table may become polluted.
- Flooding is a limitation affecting septic tank absorption fields.

Local roads and streets

- Frost action and flooding may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: A
Hydric soil: No

46C—Poplimento-Westmoreland complex, 7 to 15 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 3 to 200 acres
Shape of areas: Long and narrow or irregular

Map Unit Composition

Poplimento and similar soils: Typically 45 percent, ranging from about 40 to 50 percent
Westmoreland and similar soils: Typically 40 percent, ranging from about 35 to 45 percent

Typical Profile

Poplimento

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 11 inches—yellowish brown silty clay loam
11 to 35 inches—yellowish brown silty clay
35 to 45 inches—yellowish brown clay
45 to 56 inches—yellowish brown channery silty clay loam
56 to 62 inches—dark yellowish brown silty clay loam

Westmoreland

Surface layer:
0 to 7 inches—dark brown silt loam

Subsoil:
7 to 31 inches—strong brown silty clay loam
31 to 47 inches—brown channery silt loam

Substratum:
47 to 61 inches—strong brown very channery silt loam

Minor Components

Dissimilar components:
- Areas of Berks soils, which are moderately deep and have more shale fragments than the Poplimento and Westmoreland soils; in the convex, higher areas of the map unit or in landscape positions similar to those of the Poplimento and Westmoreland soils

- Areas of Guernsey soils, which are moderately well drained; on the gentler slopes in the lower areas
- Areas of Oriskany soils, which formed in colluvium derived from sandstone and shale and have more rock fragments than the Poplimento and Westmoreland soils; in drainageways

Similar components:
- Areas of deep soils that have a thicker solum than the Westmoreland soil; in similar landscape positions
- Areas of deep, fine soils that have a thinner solum than the Poplimento soil; in similar landscape positions
- Areas of soils that have shale fragments throughout the profile and that overlie limestone; in landscape positions similar to those of the Poplimento and Westmoreland soils
- Areas of moderately deep, fine-loamy soils; in landscape positions similar to those of the Poplimento and Westmoreland soils

Soil Properties and Qualities

Available water capacity: Moderate (about 7.1 inches)
Slowest saturated hydraulic conductivity: Poplimento—moderately high (about 0.20 in/hr); Westmoreland—moderately high (about 0.57 in/hr)
Depth class: Poplimento—very deep (more than 60 inches); Westmoreland—deep and very deep (40 to more than 60 inches)
Depth to root-restrictive feature: Poplimento—more than 60 inches; Westmoreland—40 to 80 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Poplimento—high; Westmoreland—low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from shale interbedded with limestone

Use and Management Considerations

Cropland

Suitability: Well suited to grass-legume hay; moderately suited to corn and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).

- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: Poplimento—M; Westmoreland—U
Hydric soils: No

46D—Poplimento-Westmoreland complex, 15 to 25 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Hills and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 3 to 250 acres
Shape of areas: Long and narrow or irregular

Map Unit Composition

Poplimento and similar soils: Typically 60 percent, ranging from about 45 to 70 percent
Westmoreland and similar soils: Typically 35 percent, ranging from about 25 to 40 percent

Typical Profile

Poplimento

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 11 inches—yellowish brown silty clay loam
11 to 35 inches—yellowish brown silty clay
35 to 45 inches—yellowish brown clay
45 to 56 inches—yellowish brown channery silty clay loam
56 to 62 inches—dark yellowish brown silty clay loam

Westmoreland

Surface layer:
0 to 7 inches—dark brown silt loam

Subsoil:
7 to 31 inches—strong brown silty clay loam
31 to 47 inches—brown channery silt loam

Substratum:
47 to 61 inches—strong brown very channery silt loam

Minor Components

Dissimilar components:
- Areas of moderately deep Berks soils that have more shale fragments than the Poplimento and Westmoreland soils; in convex, higher areas and in landscape positions similar to those of the Poplimento and Westmoreland soils
- Areas of Oriskany soils that formed in colluvium derived from sandstone and shale and that have more rock fragments than the Poplimento and Westmoreland soils; in drainageways
- Areas of clayey soils that formed in colluvium derived from sandstone and shale; in drainageways

Similar components:
- Areas of Murrill soils that formed in colluvium derived from sandstone and shale and that have a surface layer and subsoil more than 60 inches thick; in drainageways
- Areas of deep, fine soils that have a thinner solum than in the Poplimento soil; in similar landscape positions
- Areas of deep soils that have a thicker solum than the Westmoreland soil; in similar landscape positions
- Areas of moderately deep, fine soils; in landscape positions similar to those of the Poplimento and Westmoreland soils
- Areas of moderately deep, fine-loamy soils; in landscape positions similar to those of the Poplimento and Westmoreland soils

Soil Properties and Qualities

Available water capacity: Moderate (about 7.1 inches)
Slowest saturated hydraulic conductivity: Poplimento—moderately high (about 0.20 in/hr); Westmoreland—moderately high (about 0.57 in/hr)
Depth class: Poplimento—very deep (more than 60 inches); Westmoreland—deep and very deep (40 to more than 60 inches)
Depth to root-restrictive feature: Poplimento—more than 60 inches; Westmoreland—40 to 80 inches to bedrock (lithic)
Drainage class: Well drained

Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Poplimento—high; Westmoreland—low
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from shale interbedded with limestone

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, grass-legume hay, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The restricted permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4e
Virginia soil management group: Poplimento—M; Westmoreland—U
Hydric soils: No

47A—Purdy silt loam, 0 to 2 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Stream terraces
Position on the landform: Treads, footslopes, and backswamps
Size of areas: 5 to 60 acres
Shape of areas: Long and winding

Map Unit Composition

Purdy and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 6 inches—grayish brown silt loam; yellowish brown masses of oxidized iron and dark brown iron-manganese masses

Subsoil:
6 to 14 inches—grayish brown silt loam; strong brown masses of oxidized iron
14 to 31 inches—grayish brown silty clay; strong brown masses of oxidized iron
31 to 42 inches—gray clay; yellowish brown masses of oxidized iron
42 to 47 inches—gray silty clay; brownish yellow masses of oxidized iron and dark reddish brown iron-manganese masses

Substratum:
47 to 61 inches—gray gravelly clay loam; strong brown masses of oxidized iron

Minor Components

Dissimilar components:
- Areas of Guernsey soils, which are moderately well drained; in landscape positions similar to those of the Purdy soil and in slightly higher spots
- Areas of Coursey soils, which are moderately well drained; in landscape positions similar to or slightly higher than those of the Purdy soil
- Areas of moderately deep, poorly drained soils

Similar components:
- Areas of somewhat poorly drained soils in landscape positions similar to those of the Purdy soil

Soil Properties and Qualities

Available water capacity: High (about 9.6 inches)
Slowest saturated hydraulic conductivity: Low (about 0.00 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Poorly drained
Depth to seasonal water saturation: About 0 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: Rare
Depth of ponding: 0.0 to 1.0 foot
Shrink-swell potential: Moderate
Runoff class: Negligible
Surface fragments: None
Parent material: Alluvium and colluvium derived from limestone, shale, siltstone, and sandstone

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn; not suited to grass-legume hay and alfalfa hay
- The high clay content restricts the rooting depth of crops.
- Frost action may damage the root system of winter grain crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pastureland

Suitability: Poorly suited
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.
- Frost action may damage the root systems of plants.

Woodland

Suitability: Moderately suited to sweetgum
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- Soil wetness may limit the use of log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- Ponding is a limitation affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- Ponding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Ponding affects the ease of excavation and grading and limits the bearing capacity of the soil.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 4w
Virginia soil management group: NN
Hydric soil: Yes

48B—Timberville silt loam, 2 to 7 percent slopes, frequently flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Base of slopes of hills and drainageways
Position on the landform: Toeslopes
Size of areas: 5 to 50 acres
Shape of areas: Long and narrow to moderately broad

Map Unit Composition

Timberville and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 12 inches—dark yellowish brown silt loam

Subsoil:
12 to 25 inches—brown silty clay loam
25 to 35 inches—reddish brown gravelly silty clay
35 to 61 inches—dark reddish brown silty clay

Minor Components

Dissimilar components:
- Areas of soils that have more than 35 percent rock fragments; in landscape positions similar to those of the Timberville soil
- Areas of soils that have a brittle layer; in landscape positions similar to those of the Timberville soil
- Areas of moderately well drained soils; in drainageways

Similar components:
- Areas of Frederick soils, which have a Bt horizon within a depth of 20 inches; in the higher landscape positions
- Areas of karst in landscape positions similar to those of the Timberville soil, mostly near Wards Cove

Soil Properties and Qualities

Available water capacity: Moderate (about 8.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Surface fragments: None
Parent material: Colluvium and alluvium derived from limestone, sandstone, and shale

Use and Management Considerations

Cropland

Suitability: Well suited to corn and grass-legume hay; moderately suited to alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Frequent flooding restricts the use of winter grain crops.
- Flooding may damage crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Flooding may damage pastures.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable Best Management Practices (BMPs).
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.
- The low soil strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland if protected from flooding or not frequently flooded during the growing season
Land capability class: 2w
Virginia soil management group: G
Hydric soil: No

49B—Tumbling loam, 2 to 7 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Base of slopes of mountains
Position on the landform: Footslopes
Size of areas: 5 acres
Shape of areas: Irregular

Map Unit Composition

Tumbling and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 9 inches—dark yellowish brown loam

Subsoil:
9 to 16 inches—yellowish brown clay loam
16 to 44 inches—strong brown clay loam
44 to 62 inches—yellowish red clay loam; common yellowish brown mottles

Minor Components

Dissimilar components:
- Areas of Craigsville soils, which are subject to frequent flooding and have less clay than the Tumbling soil; on flood plains along small streams
- Areas of Berks soils, which are moderately deep and have more rock fragments than the Tumbling soil; on residual uplands

Soil Properties and Qualities

Available water capacity: Moderate (about 6.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Colluvium derived from sandstone, quartzite, and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Moderately suited to northern red oak, yellow-poplar, and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- This soil is well suited to building site development.

Septic tank absorption fields

- This soil is well suited to septic tank absorption fields.

Local roads and streets

- Frost action may damage local roads and streets

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: O
Hydric soil: No

49C—Tumbling loam, 7 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Base of slopes of mountains
Position on the landform: Footslopes
Size of areas: 4 acres
Shape of areas: Irregular

Map Unit Composition

Tumbling and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 9 inches—dark yellowish brown loam

Subsoil:
9 to 16 inches—yellowish brown clay loam
16 to 44 inches—strong brown clay loam
44 to 62 inches—yellowish red clay loam; common yellowish brown mottles

Minor Components

Dissimilar components:
- Areas of Craigsville soils, which are subject to frequent flooding and have less clay than the Tumbling soil; on flood plains along small streams
- Areas of Berks soils, which are moderately deep and have more rock fragments than the Tumbling soil; on residual uplands

Soil Properties and Qualities

Available water capacity: Moderate (about 6.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: About 0.10 to 3.00 percent subangular stones
Parent material: Colluvium derived from sandstone, quartzite, and shale

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Moderately suited to northern red oak, yellow-poplar, and eastern white pine
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: O
Hydric soil: No

50—Udorthents-Urban land complex

Setting

Major land resource area: Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Cut and fill areas
Position on the landform: Variable
Size of areas: 5 to 500 acres
Shape of areas: Irregular or very long and narrow

Map Unit Composition

Udorthents: Typically 45 percent, ranging from about 40 to 50 percent
Urban land: Typically 30 percent, ranging from about 25 to 35 percent

Typical Profile

Udorthents consist of disturbed soil and rock material that have variable colors, textures, and composition. Urban land consists of areas covered by highways, streets, parking lots, and buildings. Because of the variability of the material, typical profiles are not given.

Use and Management Considerations

Onsite investigation is needed to determine the suitability of any area for specific uses.

51D—Wallen-Rock outcrop complex, 15 to 35 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mainly ridges; some of the rock outcrops are escarpments
Position on the landform: Summits and shoulders
Size of areas: 5 to 100 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Wallen and similar soils: Typically 65 percent, ranging from about 60 to 70 percent
Rock outcrop: Typically 25 percent, ranging from about 20 to 30 percent

Typical Profile

Wallen

Organic layer:
1 inch to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—very dark brown channery sandy loam

Subsoil:
4 to 22 inches—yellowish brown very channery sandy loam

Substratum:
22 to 24 inches—yellowish brown and strong brown extremely channery sandy loam

Hard bedrock:
24 inches—sandstone bedrock

Rock outcrop

This part of the map unit consists of exposures of hard sandstone.

Minor Components

Dissimilar components:
- Areas of Calvin soils, which formed in shale, have more silt and less sand than the Wallen soil, and are redder; in the lower landscape positions
- Areas of Oriskany soils, which are very deep and colluvial; in drainageways

Similar components:
- Areas of Wallen channery loam scattered throughout the map unit
- Areas of Wallen sandy loam scattered throughout the map unit
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Properties and Qualities of the Wallen Soil

Available water capacity: Very low (about 2.0 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 3.00 to 15.00 percent angular stones
Parent material: Residuum weathered from acid sandstone interbedded with shale and siltstone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).

- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Wallen—7s; Rock outcrop—8s
Virginia soil management group: Wallen—JJ; Rock outcrop—none assigned
Hydric soils: No

51E—Wallen-Rock outcrop complex, 35 to 80 percent slopes, extremely stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Mainly ridges; some of the rock outcrops are escarpments
Position on the landform: Summits, shoulders, and backslopes

Size of areas: 5 to 200 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Wallen and similar soils: Typically 65 percent, ranging from about 60 to 70 percent
Rock outcrop: Typically 25 percent, ranging from about 20 to 30 percent

Typical Profile

Wallen

Organic layer:
1 inch to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—very dark brown channery sandy loam

Subsoil:
4 to 22 inches—yellowish brown very channery sandy loam

Substratum:
22 to 24 inches—yellowish brown and strong brown extremely channery sandy loam

Hard bedrock:
24 inches—sandstone bedrock

Rock outcrop

This part of the map unit consists of exposures of hard sandstone.

Minor Components

Dissimilar components:
- Areas of Calvin soils, which formed in shale, have more silt and less sand than the Wallen soil, and are redder; in the lower landscape positions
- Areas of Oriskany soils, which are very deep and colluvial; in drainageways

Similar components:
- Areas of Wallen channery loam scattered throughout the map unit
- Areas of Wallen sandy loam scattered throughout the map unit
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Properties and Qualities of the Wallen Soil

Available water capacity: Very low (about 2.0 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)
Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 3.00 to 15.00 percent angular stones
Parent material: Residuum weathered from acid sandstone that is interbedded with shale and siltstone

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The high content of stones or boulders on the surface may obstruct the construction of haul roads and log landings.
- The amount of rock fragments on the surface may reduce the traction of wheeled harvest equipment.
- Rock fragments on the surface interfere with the use of site preparation equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.
- Because of rock outcrops, rock removal may be needed.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.
- Because of rock outcrops, special design of septic tank absorption fields is needed.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.
- Because of rock outcrops, special design of the grade of local roads and streets and special consideration of their location are needed to avoid rock removal.

Interpretive Groups

Prime farmland: Not prime farmland

Land capability class: Wallen—7s; Rock outcrop—8s
Virginia soil management group: Wallen—JJ; Rock outcrop—none assigned
Hydric soils: No

52C—Wallen channery sandy loam, 7 to 15 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges
Position on the landform: Summits and shoulders
Size of areas: 5 to 150 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Wallen and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
1 inch to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—very dark brown channery sandy loam

Subsoil:
4 to 22 inches—yellowish brown very channery sandy loam

Substratum:
22 to 24 inches—yellowish brown and strong brown extremely channery sandy loam

Hard bedrock:
24 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and colluvial; in drainageways
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Wallen channery loam scattered throughout the map unit
- Areas of Wallen sandy loam scattered throughout the map unit
- Areas of Calvin soils, which formed in shale, have more silt and less sand than the Wallen soil, and are redder; in the lower areas
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit
- Areas of residual soils that have fewer rock fragments in the soil profile than the Wallen soil; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Very low (about 2.0 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Residuum weathered from acid sandstone that is interbedded with shale and siltstone

Use and Management Considerations

Cropland

• This soil is unsuited to cropland.

Pastureland

Suitability: Poorly suited
• The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
• Because of the limited available water capacity, plants may suffer from moisture stress during the drier summer months.
• The bedrock may restrict the rooting depth of plants.
• Large stones on the surface may restrict the operation of some farm machinery.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
• Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
• The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
• The slope may restrict the use of some mechanical planting equipment.
• Bedrock may interfere with the construction of haul roads and log landings.
• Rock fragments restrict the use of equipment during site preparation for planting or seeding.
• Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
• The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

• The slope influences the use of machinery and the amount of excavation required.
• Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

• Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
• The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

• Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
• Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6s
Virginia soil management group: JJ
Hydric soil: No

52D—Wallen channery sandy loam, 15 to 35 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 10 to 250 acres
Shape of areas: Irregular or long and narrow to moderately broad

Map Unit Composition

Wallen and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
1 inch to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—very dark brown channery sandy loam

Subsoil:
4 to 22 inches—yellowish brown very channery sandy loam

Substratum:
22 to 24 inches—yellowish brown and strong brown extremely channery sandy loam

Hard bedrock:
24 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and colluvial; in drainageways
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Wallen channery loam scattered throughout the map unit
- Areas of Wallen sandy loam scattered throughout the map unit
- Areas of Calvin soils, which formed in shale, have more silt and less sand than the Wallen soil, and are redder; in the lower areas of the map unit
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Very low (about 2.0 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Residuum weathered from acid sandstone that is interbedded with shale and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7s
Virginia soil management group: JJ
Hydric soil: No

52E—Wallen channery sandy loam, 35 to 65 percent slopes, very stony

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges
Position on the landform: Shoulders and backslopes
Size of areas: 5 to 60 acres
Shape of areas: Irregular or long and narrow

Map Unit Composition

Wallen and similar soils: Typically 90 percent, ranging from about 85 to 95 percent

Typical Profile

Organic layer:
1 inch to 0—partly decomposed and undecomposed loose leaves

Surface layer:
0 to 4 inches—very dark brown channery sandy loam

Subsoil:
4 to 22 inches—yellowish brown very channery sandy loam

Substratum:
22 to 24 inches—yellowish brown and strong brown extremely channery sandy loam

Hard bedrock:
24 inches—sandstone bedrock

Minor Components

Dissimilar components:
- Areas of Oriskany soils, which are very deep and colluvial; in drainageways
- Areas of rock outcrops scattered throughout the map unit

Similar components:
- Areas of Wallen channery loam scattered throughout the map unit
- Areas of Wallen sandy loam scattered throughout the map unit
- Areas of Calvin soils, which formed in shale, have more silt and less sand than the Wallen soil, and are redder; in the lower areas
- Areas of residual soils that are 10 to 20 inches deep to bedrock; scattered throughout the map unit
- Areas of residual soils that are 40 to 60 inches deep to bedrock; scattered throughout the map unit

Soil Properties and Qualities

Available water capacity: Very low (about 2.0 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)
Depth to root-restrictive feature: 20 to 40 inches to bedrock (lithic)

Drainage class: Somewhat excessively drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Very high
Surface fragments: About 0.10 to 3.00 percent angular stones
Parent material: Residuum weathered from acid sandstone that is interbedded with shale and siltstone

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

- This soil is unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and chestnut oak
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- Because of the limited depth to bedrock, the ease of excavation is greatly reduced and the difficulty in constructing foundations and installing utilities is increased.

Septic tank absorption fields

- Because of the limited depth to bedrock, the filtering capacity of the soil is reduced and the difficulty of properly installing the effluent distibution lines is increased.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: JJ
Hydric soil: No

53E—Westmoreland-Poplimento-Berks complex, 25 to 35 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Summits, shoulders, and backslopes
Size of areas: 5 to 550 acres
Shape of areas: Long and narrow or irregular

Map Unit Composition

Westmoreland and similar soils: Typically 60 percent, ranging from about 50 to 70 percent
Poplimento and similar soils: Typically 20 percent, ranging from about 15 to 30 percent
Berks and similar soils: Typically 15 percent, ranging from about 15 to 25 percent

Typical Profile

Westmoreland

Surface layer:
0 to 7 inches—dark brown silt loam

Subsoil:
7 to 31 inches—strong brown silty clay loam
31 to 47 inches—brown channery silt loam

Substratum:
47 to 61 inches—strong brown very channery silt loam

Poplimento

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 11 inches—yellowish brown silty clay loam
11 to 35 inches—yellowish brown silty clay
35 to 45 inches—yellowish brown clay
45 to 56 inches—yellowish brown channery silty clay loam
56 to 62 inches—dark yellowish brown silty clay loam

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Bland soils, which formed in argillaceous limestone; in the lower landscape positions
- Areas of Oriskany soils, which formed in colluvium derived from sandstone and shale and have more rock fragments than the Westmoreland, Poplimento, and Berks soils; in drainageways

Similar components:
- Areas of Murrill soils, which formed in colluvium derived from sandstone and shale and have a surface layer and a subsoil more than 60 inches thick; in drainageways
- Areas of Weikert soils, which are shallow; in the convex, higher landscape positions
- Areas of clayey soils that formed in colluvium derived from sandstone and shale; in drainageways
- Areas of deep, fine-loamy soils that have a thicker solum than the Westmoreland soil; in similar landscape positions
- Areas of deep, fine soils that have a thinner solum than the Poplimento soil; in similar landscape positions
- Areas of deep and very deep soils that have more rock fragments than the Westmoreland, Poplimento, and Berks soils; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Westmoreland and Poplimento—moderate (about 7.1 inches); Berks—very low (about 2.5 inches)
Slowest saturated hydraulic conductivity: Westmoreland and Berks—moderately high (about 0.57 in/hr); Poplimento—moderately high (about 0.20 in/hr)
Depth class: Westmoreland—deep and very deep (40 to more than 60 inches); Poplimento—very deep (more than 60 inches); Berks—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Westmoreland—40 to 80 inches to bedrock (lithic); Poplimento—more than 60 inches; Berks—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Westmoreland and Berks—low; Poplimento—high
Runoff class: High
Surface fragments: None
Parent material: Westmoreland and Poplimento—residuum weathered from shale that is interbedded with limestone; Berks—residuum weathered from acid shale that is interbedded with fine-grained sandstone and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The slope may restrict the use of some farm equipment.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- Because of the slope, the use of mechanical planting equipment is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 6e
Virginia soil management group: Westmoreland—U; Poplimento—M; Berks—JJ
Hydric soils: No

53F—Westmoreland-Poplimento-Berks complex, 35 to 65 percent slopes

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Ridges and spurs
Position on the landform: Shoulders and backslopes
Size of areas: 5 to 1,050 acres
Shape of areas: Long and narrow to broad or irregular

Map Unit Composition

Westmoreland and similar soils: Typically 45 percent, ranging from about 35 to 50 percent
Poplimento and similar soils: Typically 30 percent, ranging from about 25 to 40 percent
Berks and similar soils: Typically 20 percent, ranging from about 15 to 30 percent

Typical Profile

Westmoreland

Surface layer:
0 to 7 inches—dark brown silt loam

Subsoil:
7 to 31 inches—strong brown silty clay loam
31 to 47 inches—brown channery silt loam

Substratum:
47 to 61 inches—strong brown very channery silt loam

Poplimento

Surface layer:
0 to 6 inches—brown silt loam

Subsoil:
6 to 11 inches—yellowish brown silty clay loam
11 to 35 inches—yellowish brown silty clay
35 to 45 inches—yellowish brown clay
45 to 56 inches—yellowish brown channery silty clay loam
56 to 62 inches—dark yellowish brown silty clay loam

Berks

Organic layer:
2 inches to 0—partly decomposed and undecomposed leaves and twigs

Surface layer:
0 to 6 inches—yellowish brown channery silt loam

Subsoil:
6 to 14 inches—yellowish brown very channery silt loam
14 to 24 inches—yellowish brown extremely channery silt loam

Substratum:
24 to 33 inches—yellowish brown extremely channery silt loam

Hard bedrock:
33 inches—shale bedrock

Minor Components

Dissimilar components:
- Areas of Carbo soils, which formed in limestone and are more than 60 percent clay; in the lower landscape positions
- Areas of Oriskany soils, which formed in colluvium derived from sandstone and shale and have more rock fragments than the Westmoreland, Poplimento, and Berks soils; in drainageways
- Areas of shallow, clayey soils that formed in limestone; on nose slopes

Similar components:
- Areas of Murrill soils, which formed in colluvium derived from sandstone and shale and have a surface layer and subsoil more than 60 inches thick; in drainageways
- Areas of Newbern soils, which are shallow and loamy; on nose slopes
- Areas of Timberville soils, which formed in alluvium and colluvium in drainageways; on the lower footslopes and on toeslopes
- Areas of Weikert soils, which are shallow; on nose slopes
- Areas of fine soils that are 40 to 60 inches deep to bedrock; in landscape positions similar to those of the Westmoreland, Poplimento, and Berks soils
- Areas of moderately deep, fine soils; in landscape positions similar to those of the Westmoreland, Poplimento, and Berks soils
- Areas of fine soils that have a surface layer and a subsoil more than 60 inches thick; in landscape positions similar to those of the Westmoreland, Poplimento, and Berks soils
- Areas of moderately deep, fine-loamy soils; in landscape positions similar to those of the Westmoreland, Poplimento, and Berks soils
- Areas of deep soils that have a thicker solum than the Westmoreland soil; in landscape positions similar to those of the Westmoreland, Poplimento, and Berks soils
- Areas of deep and very deep soils that have more rock fragments than the Westmoreland, Poplimento, and Berks soils; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Westmoreland and Poplimento—moderate (about 7.1 inches); Berks—very low (about 2.5 inches)
Slowest saturated hydraulic conductivity: Westmoreland and Berks—moderately high (about 0.57 in/hr); Poplimento—moderately high (about 0.20 in/hr)
Depth class: Westmoreland—deep and very deep (40 to more than 60 inches); Poplimento—very deep (more than 60 inches); Berks—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Westmoreland—40 to 80 inches to bedrock (lithic); Poplimento—more than 60 inches; Berks—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Westmoreland and Berks—low; Poplimento—high
Runoff class: High
Surface fragments: None
Parent material: Westmoreland and Poplimento—residuum weathered from shale that is interbedded with limestone; Berks—residuum weathered from acid shale that is interbedded with fine-grained sandstone and siltstone

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Moderately suited to northern red oak and yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable Best Management Practices (BMPs).
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the limited depth to bedrock, the ease of excavation is reduced and the difficulty of constructing roads is increased.
- Because of shrinking and swelling, the use of the soil as base material for local roads and streets is restricted.
- The low soil strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: Westmoreland—U; Poplimento—M; Berks—JJ
Hydric soils: No

54A—Wolfgap clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Appalachian Ridges and Valleys (MLRA 128)
Landform: Flood plains
Position on the landform: Toeslopes
Size of areas: 2 acres
Shape of areas: Irregular

Map Unit Composition

Wolfgap and similar soils: Typically 85 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 11 inches—dark brown clay loam (yellowish brown, dry)

Subsoil:
11 to 35 inches—yellowish brown sandy clay loam
35 to 58 inches—strong brown sandy clay loam

Substratum:
58 to 72 inches—strong brown extremely gravelly fine sandy loam

Minor Components

Dissimilar components:
- Areas of Botetourt soils, which are moderately well drained; on terrace risers

Soil Properties and Qualities

Available water capacity: Moderate (about 7.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Alluvium derived from limestone, shale, siltstone, and sandstone

Use and Management Considerations

Cropland

Suitability: Well suited to corn, grass-legume hay, and alfalfa hay
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Flooding may damage crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.

Woodland

Suitability: Well suited to northern red oak; moderately suited to yellow-poplar
- Proper planning for timber harvesting is essential in minimizing the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable Best Management Practices (BMPs).
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- The low soil strength interferes with the construction of haul roads and log landings.
- The low soil strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 1
Virginia soil management group: A
Hydric soil: No

W—Water

This map unit is the the Cumberland Plateau and Mountains (MLRA 125) and Southern Appalachian Ridges and Valleys (MLRA 128) major land resource areas. It consists of areas inundated with water for most of the year and generally includes rivers, lakes, and ponds.

This map unit is not assigned any interpretive groups.

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 crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for agricultural waste management. 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 gravel, sand, reclamation material, 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.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, and the system of land capability classification used by the Natural Resources Conservation Service is explained.

Effective pasture management practices include maintaining a mixture of grasses and legumes, rotating pasture, deferring grazing, controlling undesirable vegetation, and using proper stocking rates.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 5. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification and the Virginia Soil Management Group of map units in the survey area also are shown in the table.

The yields are based on the Virginia Agronomic Land Evaluation System *(20)*. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

Realistic yield goals can be maintained over a long-term basis through proper nutrient management and other soil amendments such as lime. Applications of nitrogen and phosphorus from organic or inorganic forms should be in keeping with approved nutrient management practices and regulations.

Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 5 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit *(17)*. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, forestland, wildlife habitat, or recreation.

The capability classification of the soils in this survey area is given in the section “Detailed Soil Map Units” and in table 5.

Virginia Soil Management Groups

The Virginia Agronomic Land Use Evaluation System (VALUES) is a system that ranks soils for management and productivity *(20)*. VALUES places each soil series in Virginia into one of 43 management groups. The format of the management groups, A through QQ, include the following soil characteristics—regional occurrence; parent material; landscape position or influence; solum thickness; dominant profile features, such as texture; available water capacity for plants; and internal soil drainage. Yields that are both economically and environmentally feasible were assigned to each management group, based on yields of field trial crop data and research. The following paragraphs describe the soil management groups in Tazewell County.

Group A. The soils of this group formed in alluvial parent materials and are on gently sloping flood plains or stream terraces which have watersheds that originate west of the Blue Ridge. These soils are deep or very deep and are medium textured throughout. They have a high available water capacity and are well drained.

Group G. The soils of this group formed in locally transported, medium textured sediments of either colluvial or alluvial origin that overlie a wide range of residual materials. These soils are in landscape positions that include footslopes and toeslopes, the heads of drainageways, depressions, and narrow upland drainageways. These deep and very deep soils are silty to loamy in the upper part of the subsoil, which is underlain with clayey to stony materials. They have a moderately high available water capacity and are moderately well drained or somewhat poorly drained.

Group L. The soils of this group formed from old transported deposits of alluvium or colluvium. These soils are common on stream terraces, footslopes, and older, elevated, upland landscapes that were once stream terraces. They are deep or very deep, have medium textured surface layers, have more clayey subsurface layers, and commonly contain gravel and rounded stones. They have a moderate or high available water capacity and typically are well drained.

Group M. The soils of this group formed in material weathered from carbonate rocks. These soils are on upland summits and side slopes. These deep or very deep soils have reddish brown clayey subsurface layers that contain coarse fragments in some areas. They have a moderate available water capacity, unless the content of coarse fragments is significantly high, and they are well drained.

Group O. The soils of this group formed from transported materials ranging from mountain colluvium to old alluvium on dissected uplands and deposits on old elevated river terraces. These very deep to shallow soils have very dark red clayey subsurface layers, which have significant amounts of coarse fragments in some areas. They have a moderate available water capacity and are well drained.

Group U. The soils of this group formed from a variety of residual parent materials ranging from Triassic sediments to sandstone, shale, and limestone to colluvium from these materials. These moderately deep to shallow soils commonly have fine-loamy subsurface layers. They commonly have coarse fragments making up one-third of the soil volume and, as a result, have a moderate or moderately low available water capacity. They are well drained or moderately well drained.

Group Y. The soils of this group formed from the residuum of weathered limestone, shale, or other carbonate-influenced rocks. These shallow to moderately deep soils represent upland landscapes. They have clayey subsurface layers, which contain coarse fragments in some areas. They have a moderate or low available water capacity where they are shallow to bedrock, and they are mostly well drained.

Group CC. The soils of this group formed in a range of parent materials that include alluvium and colluvium. These soils occur on a variety of landscapes, including uplands, stream terraces, colluvial areas, and bottomlands. They commonly have a moderately deep solum, are very deep to bedrock, have clayey-skeletal to coarse-loamy subsurface layers (which have as much as 70 percent coarse fragments in some areas), and have a moderately low available water capacity. They are well drained.

Group FF. The soils of this group formed in sandstone and shale residual parent materials and mountain colluvium. These soils are on steeply dissected uplands and mountain side slopes. They are moderately shallow and mostly have loamy-skeletal subsurface layers, which may contain 80 percent, or more, coarse fragments. As a result, the available water capacity is low or very low. The soils are well drained or moderately well drained.

Group HH. The soils of this group formed from loamy sediments in flood-plain positions. They are moderately deep to very deep soils that have fine-loamy or clayey subsurface textures and a moderate available water capacity. They range from somewhat poorly drained to moderately well drained.

Group JJ. The soils of this group formed from a wide variety of residual parent materials, ranging from sandstone, shale, and limestone to phyllite or schist. These soils are shallow to moderately deep, dominantly are loamy-skeletal throughout, and contain 30 to 70 percent coarse fragments. This group includes some very deep soils if the natural soil porosity has been disturbed. The soils of this group have a very low available water capacity and are well drained.

Group NN. The soils of this group are undrained. These soils formed in alluvium along streams or on terraces. They are moderately deep to very deep, have silty to clay loam subsurface layers, have a moderately high available water capacity, and are somewhat poorly drained or poorly drained.

The management groups for the map units in the survey area are given in the section “Detailed Soil Map Units” and in table 5.

Prime Farmland

Table 6 lists the map units in the survey area that are considered prime farmland. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation’s food supply.

Prime farmland is of major importance in meeting the Nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation’s prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 13,242 acres in the survey area, or nearly 4 percent of the total acreage, meets the soil requirements for prime farmland. Areas of prime farmland are scattered throughout the county. Most areas are in the limestone valley and on stream terraces or flood plains.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

For some soils identified in table 6 as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

Hydric Soils

This section lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site *(6, 8)*.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology *(3, 8, 9, 10)*. Criteria for all 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 *(4)*. These soils, under natural conditions, 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 *(5)*. These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” *(15)* and “Keys to Soil Taxonomy” *(14)* and in the “Soil Survey Manual” *(18)*.

If soils are wet enough for a long enough period of time 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 are specified in “Field Indicators of Hydric Soils in the United States” *(6)*.

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 information can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site *(6, 8)*.

32A Melvin silt loam, 0 to 2 percent slopes, frequently flooded
47A Purdy silt loam, 0 to 2 percent slopes

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly 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.

5D	Bland-Rock outcrop complex, 15 to 25 percent slopes
5E	Bland-Rock outcrop complex, 25 to 50 percent slopes
6B	Bland silty clay loam, 2 to 7 percent slopes
6C	Bland silty clay loam, 7 to 15 percent slopes
6D	Bland silty clay loam, 15 to 25 percent slopes
12D	Carbo-Rock outcrop complex, 7 to 25 percent slopes
12E	Carbo-Rock outcrop complex, 25 to 65 percent slopes
13E	Carbo-Rock outcrop complex, karst, 7 to 65 percent slopes
17B	Coursey loam, 2 to 7 percent slopes
20B	Frederick silt loam, 2 to 7 percent slopes
20C	Frederick silt loam, 7 to 15 percent slopes
20D	Frederick silt loam, 15 to 25 percent slopes
20E	Frederick silt loam, 25 to 35 percent slopes
20F	Frederick silt loam, 35 to 60 percent slopes
21B	Frederick gravelly silt loam, 2 to 7 percent slopes
21C	Frederick gravelly silt loam, 7 to 15 percent slopes
21D	Frederick gravelly silt loam, 15 to 25 percent slopes
21E	Frederick gravelly silt loam, 25 to 35 percent slopes
21F	Frederick gravelly silt loam, 35 to 60 percent slopes
22B	Frederick silt loam, karst, 2 to 7 percent slopes
22C	Frederick silt loam, karst, 7 to 15 percent slopes
22D	Frederick silt loam, karst, 15 to 25 percent slopes
22E	Frederick silt loam, karst, 25 to 35 percent slopes
35A	Newark-Lindside complex, 0 to 3 percent slopes, occasionally flooded
41A	Philo fine sandy loam, 0 to 3 percent slopes, frequently flooded
42B	Pisgah silt loam, 2 to 7 percent slopes
42C	Pisgah silt loam, 7 to 15 percent slopes
43B	Pisgah silt loam, karst, 2 to 7 percent slopes
43C	Pisgah silt loam, karst, 7 to 15 percent slopes
50	Udorthents-Urban land complex

Agricultural Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Table 7, parts I, II, and III, show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of this table, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the table are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

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 agricultural waste management. *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 table 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).

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, permeability, depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

Rapid infiltration of wastewater is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Permeability and reaction affect performance. Permanently frozen soils are unsuitable for waste treatment.

Slow rate treatment of wastewater is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Forestland Productivity and Management

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

Forestland Productivity

In table 8, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual” *(12)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Forestland Management

In table 9, parts I through V, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified aspect of forestland management. *Well suited* indicates that the soil has features that are favorable for the specified management aspect 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 management aspect. 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 management aspect. 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 management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Proper planning for timber harvesting is essential to minimize the potential impact to soil and water quality. A harvest plan should include logging roads, log decks, streamside management zones, stream crossings, skid trails, schedule of activities, and Best Management Practices (BMPs) for each activity.

Forests should be managed to increase economic and environmental benefits. A forest stewardship plan should be developed to guide management and utilization of the woodlands.

Numerical ratings in the table 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 aspect of forestland management (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. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual" *(12)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

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.

Recreational Development

In table 10, parts I and II, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. 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 table 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 table 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 this table can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

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.

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, reclamation material, roadfill, and topsoil; plan structures for water management; 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.

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. Table 11, parts I and II, 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 table 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 table 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.

Sanitary Facilities

Table 12, parts I and II, 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 table 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

Table 13, parts I and II, give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. 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 13, part I, 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 sand or gravel 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 sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair,* or *poor* as potential sources of sand and gravel. 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 sand or gravel. 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.

In table 13, part II, the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, and 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.

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. 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 table 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).

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

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are determined 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.

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 Soil Properties

Table 15 gives the engineering classifications and the range of engineering 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 *(2)* and the system adopted by the American Association of State Highway and Transportation Officials *(1)*.

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.

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.

Physical Soil Properties

Table 16 shows estimates of some physical 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.

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.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, 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.

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 linear extensibility, 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.

Saturated hydraulic conductivity 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 micrometers per second, 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 the table, 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 the table 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 six 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 described in the “National Soil Survey Handbook” *(13)*, which is available at the local office of the Natural Resources Conservation Service or on the Internet.

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.

Chemical Soil Properties

Table 17 shows estimates of some 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.

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.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

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 18 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.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

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. The table 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. The table 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 19 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. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *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.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories *(14, 15)*. 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 20 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 Udalf (*Ud*, meaning humid, 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 Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture 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 *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

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 very fine, mixed, active, mesic, Typic Hapludalfs.

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" *(18)* and in the "Field Book for Describing and Sampling Soils" *(16)*. Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" *(15)* and in "Keys to Soil Taxonomy" *(14)*. Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Allegheny Series

Physiographic province: Valley and Ridge
Landform: Stream terraces
Parent material: Alluvium derived from sandstone, shale, and limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 7 percent

Associated Soils

- Areas of moderately deep Carbo soils, which formed in residuum derived from limestone and have more clay than the Allegheny soils
- Areas of moderately well drained Coursey soils; on terraces that are on landscapes similar to or lower than those of the Allegheny soils
- Areas of Frederick soils, which formed in limestone residuum and have more clay than the Allegheny soils

Taxonomic Classification

Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Allegheny loam, 2 to 7 percent slopes; in Tazewell County, Virginia; in a hayfield, about 10 miles east-southeast of Richlands, about 8.75 miles southwest of Tazewell, 150 feet south of Highway VA-604; Pounding Mill, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 1 minute 16.00 seconds N. and long. 81 degrees 37 minutes 58.00 seconds W.

Ap—0 to 5 inches; dark yellowish brown (10YR 4/4) loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine vesicular and tubular pores; slightly acid; clear smooth boundary.

BA—5 to 11 inches; brown (7.5YR 4/4) fine sandy loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; common very fine and fine roots; many very fine tubular and vesicular pores; 3 percent rounded sandstone gravel; moderately acid; clear wavy boundary.

Bt1—11 to 24 inches; brown (7.5YR 4/4) sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine roots; many very fine tubular and vesicular pores; common faint discontinuous clay films on all faces of peds; 8 percent rounded sandstone gravel; moderately acid; clear wavy boundary.

Bt2—24 to 32 inches; brown (7.5YR 4/4) gravelly sandy clay loam; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; many very fine vesicular and tubular pores; few faint discontinuous clay films on all faces of peds; 25 percent rounded sandstone gravel; strongly acid; clear wavy boundary.

BC—32 to 48 inches; strong brown (7.5YR 4/6) very gravelly sandy loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; few very fine roots; many very fine tubular and vesicular pores; 35 percent rounded sandstone gravel; very strongly acid; gradual wavy boundary.

C—48 to 61 inches; strong brown (7.5YR 4/6) very gravelly sandy loam; structureless, single grain; loose, nonsticky, nonplastic; many very fine tubular and vesicular pores; 20 percent rounded sandstone cobbles and 35 percent rounded sandstone gravel; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more

Depth to bedrock: More than 60 inches

Rock fragments (type and content): Mostly sandstone gravel; 0 to 15 percent in the A horizon, 0 to 30 percent in the BA, BE, and Bt horizons, and 0 to 60 percent in the BC and C horizons

Reaction: Very strongly acid to moderately acid throughout the profile; surface layers can be slightly acid in limed areas

Ap horizon:

Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—loam

BA or BE horizon (if it occurs):

Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture—sandy loam, loam, or silt loam in the fine-earth fraction

Bt horizon:

Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—clay loam, sandy clay loam, loam, silt loam, or silty clay loam in the fine-earth fraction; more than 15 percent sand coarser than very fine sand

BC horizon:

Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture—fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction

C horizon:

Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture—sandy clay loam, clay loam, loam, fine sandy loam, or sandy loam in the fine-earth fraction

2C horizon (if it occurs):

Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture—stratified layers ranging from sand to loam in the fine-earth fraction

Alticrest Series

Physiographic province: Appalachian Plateau
Landform: Ridges and spurs
Parent material: Residuum weathered from sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 5 to 40 percent

Associated Soils

- Areas of very deep Cedarcreek soils, which formed in regolith from surface mining operations and have more rock fragments and less sand than the Alticrest soils; on shoulders, backslopes, footslopes, and toeslopes on landscapes similar to or lower than those of the Alticrest soils
- Areas of deep Grimsley soils, which formed in colluvium derived from sandstone and shale and have more rock fragments and less sand than the Alticrest soils; on ridges and spur ridges on landscapes lower than those of the Alticrest soils and in drainageways
- Areas of Lily soils, which have more clay and less sand than the Alticrest soils; on similar landscapes

Taxonomic Classification

Coarse-loamy, siliceous, semiactive, mesic Typic Dystrudepts

Typical Pedon

Alticrest fine sandy loam, 25 to 40 percent slopes; in Tazewell County, Virginia; in woodland, about 3.5 miles north-northeast of Richlands, about 5.3 miles south of the intersection of Highways VA-616 and VA-621, in Jewell Ridge, on a side slope 1,500 feet to the east; Jewell Ridge, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 8 minutes 45.40 seconds N. and long. 81 degrees 45 minutes 45.60 seconds W.

Oi—2 inches to 0; partly decomposed and undecomposed leaves and twigs.
A—0 to 3 inches; brown (10YR 4/3) fine sandy loam; moderate fine granular structure; friable, nonsticky, nonplastic; many fine and medium roots; common fine tubular and vesicular pores; 5 percent angular sandstone channers; very strongly acid; clear smooth boundary.
Bw1—3 to 10 inches; yellowish brown (10YR 5/6) sandy loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; many fine and medium roots; common fine vesicular and tubular pores; 5 percent angular sandstone channers; very strongly acid; clear smooth boundary.
Bw2—10 to 25 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; common fine and medium roots; common fine tubular and vesicular pores; 10 percent angular sandstone channers; very strongly acid; clear smooth boundary.
Bw3—25 to 35 inches; yellowish brown (10YR 5/6) sandy loam; weak coarse subangular blocky structure; friable; few fine and medium roots; common fine tubular and vesicular pores; 5 percent subangular sandstone channers; very strongly acid; abrupt wavy boundary.
R—35 inches; sandstone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches

Rock fragments (type and content): Sandstone or orthoquartzite fragments less than 3 inches in diameter; 0 to 15 percent in each horizon
Reaction: Very strongly acid or strongly acid throughout the profile, except in limed areas

A horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 to 4
Texture—fine sandy loam

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture—loam, sandy loam, or fine sandy loam

BC horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 7
Chroma—3 to 8
Texture—sandy loam or fine sandy loam

C horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—3 to 6
Texture—sand, loamy sand, or sandy loam

Berks Series

Physiographic province: Valley and Ridge and Appalachian Plateau
Landform: Ridges and spurs
Parent material: Residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 7 to 70 percent

Associated Soils

- Areas of Bland soils, which formed in residuum derived from limestone and have more clay and fewer rock fragments than the Berks soils; on hills and spur ridges on landscapes lower than those of the Berks soils
- Areas of Brushy soils, which formed in residuum derived from cherty limestone and have chert fragments; on hills and spur ridges on landscapes lower than those of the Berks soils
- Areas of Calvin soils, which are redder than the Berks soils; on ridges on landscapes higher than those of the Berks soils
- Areas of very deep Cedarcreek soils, which formed in regolith from surface mining operations; on shoulders, backslopes, footslopes, and toeslopes on landscapes similar to or lower than those of the Berks soils
- Areas of Gilpin soils, which have more clay and fewer shale fragments than the Berks soils; on similar landscapes
- Areas of deep Grimsley soils, which formed in colluvium derived from sandstone and

shale and have sandstone fragments; on ridges and spur ridges on landscapes similar to or lower than those of the Berks soils and in drainageways
- Areas of Lily soils, which formed in residuum derived from sandstone and have fewer rock fragments than the Berks soils; on landscapes similar to or higher than those of the Berks soils
- Areas of very deep Oriskany soils, which formed in colluvium derived from sandstone, siltstone, and shale and have sandstone fragments; on ridges and spur ridges on landscapes similar to or lower than those of the Berks soils and in drainageways
- Areas of very deep Poplimento soils, which have more clay and fewer shale fragments than the Berks soils; on spur ridges and the lower hills on landscapes similar to those of the Berks soils
- Areas of Wallen soils, which formed in residuum derived from sandstone and have more sand and less clay than the Berks soils; on ridges on landscapes higher than those of the Berks soils
- Areas of shallow Weikert soils; on landscapes similar to those of the Berks soils
- Areas of deep Westmoreland soils, which have fewer shale fragments than the Berks soils; on spur ridges and the lower hills on landscapes similar to those of the Berks soils

Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Typical Pedon

Berks channery silt loam in an area of Berks-Weikert complex, 35 to 55 percent slopes; in Tazewell County, Virginia; in woodland, about 6.75 miles south of Tazewell, 0.8 mile southeast of the intersection of Highways VA-16 and VA-601, about 0.33 mile north of the county line, 32 yards from Highway VA-16 on Little Brushy Mountain; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 0 minutes 21.00 seconds N. and long. 81 degrees 31 minutes 8.00 seconds W.

Oi—2 inches to 0; partly decomposed and undecomposed leaves and twigs.

Ap—0 to 6 inches; yellowish brown (10YR 5/4) channery silt loam; weak fine granular structure; friable, nonsticky, nonplastic; common medium and many very fine roots; many very fine tubular pores; 20 percent angular shale channers; strongly acid; clear smooth boundary.

Bw1—6 to 14 inches; yellowish brown (10YR 5/8) very channery silt loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common coarse roots and common very fine roots between peds; many very fine tubular pores; 5 percent angular sandstone channers and 40 percent angular shale channers; very strongly acid; clear wavy boundary.

Bw2—14 to 24 inches; yellowish brown (10YR 5/8) extremely channery silt loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots and common medium roots between peds; many very fine tubular pores; 5 percent angular sandstone channers and 55 percent angular shale channers; very strongly acid; clear wavy boundary.

C—24 to 33 inches; yellowish brown (10YR 5/8) extremely channery silt loam; weak fine granular structure; friable, slightly sticky, nonplastic; few very fine roots between peds; many very fine vesicular pores; 5 percent angular sandstone channers and 60 percent angular shale channers; very strongly acid; clear wavy boundary.

R—33 inches; shale bedrock.

Range in Characteristics

Solum thickness: 15 to 35 inches

Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Shale, siltstone, or fine-grained sandstone fragments; 15 to 35 percent in the A or Ap horizon, 35 to 65 percent in the Bw horizon, and 50 to 80 percent in the C horizon
Reaction: Very strongly acid or strongly acid in the A or Ap horizon; extremely acid to strongly acid in the Bw and C horizons

A or Ap horizon:
Hue—10YR
Value—3 to 5
Chroma—3 or 4
Texture—silt loam in the fine-earth fraction

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture—loam, silt loam, or silty clay loam in the fine-earth fraction

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture—loam or silt loam in the fine-earth fraction

Bland Series

Physiographic province: Valley and Ridge
Landform: Hills and spurs
Parent material: Residuum weathered from argillaceous limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 2 to 50 percent

Associated Soils

- Areas of Berks soils, which formed in residuum derived from shale, are yellower than the Bland soils, and have less clay and more rock fragments; on ridges and spur ridges on landscapes higher than those of the Bland soils
- Areas of Carbo soils, which have more clay than the Bland soils and are yellower; on landscapes similar to or lower than those of the Bland soils
- Areas of very deep Murrill soils, which formed in colluvium derived from sandstone and shale; generally on spur ridges on landscapes lower than those of the Bland soils
- Areas of very deep Oriskany soils, which formed in colluvium derived from sandstone, siltstone, and shale and have more rock fragments than the Bland soils; on ridges and spur ridges on landscapes higher than those of the Bland soils and in drainageways
- Areas of very deep Poplimento soils, which formed in residuum derived from shale and are yellower than the Bland soils; on landscapes higher than those of the Bland soils
- Areas of deep Westmoreland soils, which formed in residuum derived from shale and are yellower than the Bland soils; on landscapes higher than those of the Bland soils

Taxonomic Classification

Fine, mixed, semiactive, mesic Typic Hapludalfs

Typical Pedon

Bland silty clay loam in an area of Bland-Rock outcrop complex, 25 to 50 percent slopes; in Tazewell County, Virginia; in pasture, about 2.3 miles southwest of Tazewell, 1.5 miles south-southeast of the junction of Highways US-460 and VA-16, about 500 yards northwest of the junction of Highways VA-16 and VA-604; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 4 minutes 49.00 seconds N. and long. 81 degrees 33 minutes 9.00 seconds W.

Ap—0 to 4 inches; reddish gray (5YR 5/2) silty clay loam; weak fine and medium granular structure; friable, slightly sticky, slightly plastic; many fine roots; many very fine tubular pores; 1 percent subangular limestone channers and 1 percent subangular shale channers; strongly acid; abrupt smooth boundary.

BE—4 to 7 inches; reddish brown (5YR 4/3) silty clay; weak fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; many fine roots; common fine tubular pores; 1 percent subangular limestone channers and 1 percent subangular shale channers; strongly acid; clear smooth boundary.

Bt1—7 to 18 inches; reddish brown (5YR 4/3) silty clay; strong coarse subangular blocky structure; firm, slightly sticky, slightly plastic; common fine roots; common fine tubular and few medium tubular pores; few distinct discontinuous clay films on all faces of peds; moderately acid; gradual smooth boundary.

Bt2—18 to 30 inches; weak red (2.5YR 4/2) silty clay; few medium prominent yellowish red (5YR 5/6) mottles; strong medium and coarse subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; few fine tubular pores; common prominent continuous clay films on all faces of peds; slightly acid; gradual smooth boundary.

C—30 to 36 inches; dusky red (2.5YR 3/2) channery clay; massive; firm, moderately sticky, slightly plastic; 30 percent subangular limestone channers; neutral; abrupt smooth boundary.

R—36 inches; dusky red (2.5YR 3/2) argillaceous limestone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Shale and limestone fragments; 0 to 15 percent in the Ap, E, BE, and Bt horizons and 15 to 50 percent in the C horizon
Reaction: Strongly acid to neutral

Ap horizon:
Hue—5YR
Value—3 to 5; horizon is less than 7 inches thick where moist value is less than 4
Chroma—2 or 3
Texture—silty clay loam

E horizon (if it occurs):
Hue—5YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam or silty clay loam

BE horizon:
Hue—5YR
Value—3 to 5

Chroma—2 or 3
Texture—silty clay loam or silty clay

Bt horizon:
Hue—2.5YR or 5YR
Value—3 or 4; value may be higher in the lower part of the horizon
Chroma—2 or 3; chroma may be higher in the lower part of the horizon
Texture—silty clay or clay that is 45 to 60 percent clay and 4 to 8 percent sand

C horizon:
Hue—2.5YR or 5YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam to clay in the fine-earth fraction

Botetourt Series

Physiographic province: Valley and Ridge
Landform: Stream terraces
Parent material: Alluvium derived from limestone, shale, quartzite, and sandstone
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 7 to 15 percent

Associated Soils

- Areas of Wolfgap soils, which formed in recent alluvium and have a thick, dark surface layer; on the lower flood plains

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Ultic Hapludalfs

Typical Pedon

Botetourt loam, 7 to 15 percent slopes; in Smyth County, Virginia; in cropland, about 0.1 mile southeast of the intersection of Highways VA-42 and VA-621, about 0.25 mile east of Goodwill Church, and 0.5 mile south-southwest of Young Chapel; Nebo, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 57 minutes 38.10 seconds N. and long. 81 degrees 28 minutes 12.00 seconds W.

Ap—0 to 7 inches; dark yellowish brown (10YR 4/4) loam; moderate medium granular structure; friable, slightly sticky, slightly plastic; many very fine and fine roots; many fine tubular and many fine vesicular pores; slightly acid; abrupt smooth boundary.

BA—7 to 18 inches; yellowish brown (10YR 5/8) loam; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine and fine roots; common fine tubular and vesicular pores; slightly acid; clear smooth boundary.

Bt1—18 to 37 inches; yellowish brown (10YR 5/8) clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; common fine vesicular and tubular pores; common faint clay films on all faces of peds; common medium prominent gray (10YR 6/1) iron depletions throughout; moderately acid; clear smooth boundary.

Bt2—37 to 48 inches; yellowish brown (10YR 5/8) gravelly loam; moderate medium subangular blocky structure; friable, slightly sticky, nonplastic; few fine roots; common fine vesicular and tubular pores; few faint clay films on all faces of peds and few faint clay bridges between sand grains; common medium prominent light gray (10YR 7/1) iron depletions throughout; 20 percent rounded sandstone gravel; strongly acid; clear smooth boundary.

C—48 to 62 inches; yellowish brown (10YR 5/6) gravelly loam; structureless, massive; friable, nonsticky, nonplastic; few fine vesicular and tubular pores; many medium prominent light gray (10YR 7/1) iron depletions throughout; 25 percent rounded sandstone gravel; strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 60 inches
Rock fragments (type and content): Rounded gravel and cobbles; 0 to 15 percent in the Ap horizon, 0 to 35 percent in the BA, Bt, and BC horizons, and 5 to 50 percent in the C horizon
Reaction: Strongly acid to slightly acid, except in limed areas

Ap horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—loam

BA horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, silt loam, sandy clay loam, or clay loam in the fine-earth fraction

Bt horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

BC horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

C horizon:
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—1 to 8
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction

Brushy Series

Physiographic province: Valley and Ridge
Landform: Hills and spurs
Parent material: Residuum weathered from cherty limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 7 to 60 percent

Associated Soils

- Areas of Berks soils, which formed in residuum derived from shale and have shale fragments; on ridges and spur ridges on landscapes similar to or higher than those of the Brushy soils
- Areas of Lily soils, which formed in residuum derived from sandstone and have fewer rock fragments than the Brushy soils; on ridges and spur ridges on landscapes higher than those of the Brushy soils
- Areas of shallow Weikert soils, which formed in residuum derived from shale and have shale fragments; on ridges and spur ridges on landscapes similar to or higher than those of the Brushy soils

Taxonomic Classification

Loamy-skeletal, siliceous, semiactive, mesic Typic Hapludults

Typical Pedon

Brushy gravelly loam, 25 to 60 percent slopes; in Tazewell County, Virginia; in woodland, about 10.25 miles southwest of Tazewell, 1.5 miles northeast of the intersection of Highways VA-601 and VA-607, about 0.3 mile north of Highway VA-601 in Freestone Valley; Chatham Hill, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 59 minutes 25.00 seconds N. and long. 81 degrees 36 minutes 40.00 seconds W.

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) gravelly loam; weak fine granular structure; friable, nonsticky, nonplastic; common very fine roots; many fine vesicular and tubular pores; 25 percent angular chert gravel; strongly acid; clear smooth boundary.

BA—4 to 10 inches; dark yellowish brown (10YR 4/6) very gravelly loam; weak fine granular structure; friable, slightly sticky, nonplastic; few fine and medium roots; many fine tubular and vesicular pores; 40 percent angular chert gravel; strongly acid; clear wavy boundary.

Bt—10 to 23 inches; yellowish brown (10YR 5/4) very gravelly loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine and medium roots; many fine vesicular and tubular pores; few faint patchy clay films on all faces of peds; 40 percent angular chert gravel; very strongly acid; gradual wavy boundary.

R—23 inches; cherty limestone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Chert and limestone fragments; 10 to 80 percent in individual subhorizons of the A, E, BA, and Bt horizons; on average, more than 35 percent between depths of 10 to 40 inches
Reaction: Extremely acid to moderately acid

A or Ap horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—loam in the fine-earth fraction

E horizon (if it occurs):
Hue—10YR
Value—6

Chroma—3 or 4
Texture—loam, silt loam, or fine sandy loam in the fine-earth fraction

BA horizon:
Hue—10YR
Value—4 or 5
Chroma—6 to 8
Texture—loam, silt loam, or fine sandy loam in the fine-earth fraction

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam, clay loam, or sandy clay loam in the fine-earth fraction

Calvin Series

Physiographic province: Valley and Ridge
Landform: Ridges
Parent material: Residuum weathered from acid, red shale interbedded with fine-grained sandstone, mudstone, and siltstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 15 to 65 percent

Associated Soils

- Areas of Berks soils, which formed in shale yellower than that in which the Calvin soils formed; on ridges and spur ridges on landscapes lower than those of the Calvin soils
- Areas of very deep Oriskany soils, which formed in colluvium derived from sandstone and shale; on ridges and spur ridges on landscapes similar to or lower than those of the Calvin soils and in drainageways
- Areas of very deep Poplimento soils, which formed in shale that is yellower than that in which the Calvin soils formed and is interbedded with limestone and which have more clay and fewer rock fragments than the Calvin soils; on hills and spur ridges on landscapes lower than those of the Calvin soils
- Areas of Wallen soils, which formed in residuum derived from sandstone, are yellower than the Calvin soils, and have more sand and less silt; on ridges on landscapes higher than those of the Calvin soils
- Areas of deep Westmoreland soils, which formed in shale that is yellower than that in which the Calvin soils formed and is interbedded with limestone and which have fewer rock fragments than the Calvin soils; on hills and spur ridges on landscapes lower than those of the Calvin soils

Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Typical Pedon

Calvin channery silt loam, 35 to 55 percent slopes; in Tazewell County, Virginia; in woodland, about 4.75 miles south of Tazewell, 1.5 miles east-southeast of the intersection of Highways VA-16 and VA-602, about 0.4 mile east-northeast of Highway VA-16, on Clinch Mountain; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 2 minutes 59.00 seconds N. and long. 81 degrees 30 minutes 18.00 seconds W.

Oi—2 inches to 0; decomposed and undecomposed leaves and twigs.

Ap—0 to 8 inches; reddish brown (5YR 4/3) channery silt loam; weak fine granular structure; friable, nonsticky, nonplastic; few coarse and many very fine roots; many very fine pores; 20 percent angular shale channers; strongly acid; clear smooth boundary.

Bw—8 to 25 inches; reddish brown (5YR 4/4) very channery silt loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few medium and common very fine roots; many very fine pores; 50 percent angular shale channers; very strongly acid; clear wavy boundary.

C—25 to 32 inches; reddish brown (5YR 4/4) extremely channery silt loam; weak fine granular structure; friable, nonsticky, nonplastic; few very fine roots; many very fine pores; 65 percent angular shale channers; very strongly acid; abrupt wavy boundary.

R—32 inches; shale bedrock.

Range in Characteristics

Solum thickness: 20 to 30 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Shale, siltstone, fine-grained sandstone, or mudstone channers or flagstones; 10 to 25 percent in the A or Ap horizon, 35 to 55 percent in the Bw horizon, and 40 to 80 percent in the C horizon
Reaction: Very strongly acid or strongly acid throughout the profile

A or Ap horizon:
Hue—7.5YR or 5YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam in the fine-earth fraction

Bw horizon:
Hue—5YR or 2.5YR
Value—4 or 5
Chroma—2 to 6
Texture—loam or silt loam in the fine-earth fraction

C horizon:
Hue—5YR or 2.5YR
Value—3 to 5
Chroma—2 to 4
Texture—loam or silt loam in the fine-earth fraction

Carbo Series

Physiographic province: Valley and Ridge
Landform: Hills and spurs; some areas have karst topography
Parent material: Residuum weathered from limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Moderately deep
Slope range: 7 to 65 percent

Associated Soils

- Areas of very deep Allegheny soils, which have less clay than the Carbo soils; on terraces

- Areas of Bland soils, which are redder than the Carbo soils and have less clay; on landscapes similar to or higher than those of the Carbo soils
- Areas of shallow Chiswell soils, which formed in residuum derived from shale and have less clay, more rock fragments, and fewer rock outcrops than the Carbo soils; on landscapes similar to or higher than those of the Carbo soils
- Areas of very deep Frederick soils, which have fewer rock outcrops than the Carbo soils; on hills on landscapes similar to or lower than those of the Carbo soils
- Areas of very deep Groseclose soils, which have fewer rock outcrops than the Carbo soils; on similar landscapes
- Areas of Litz soils, which formed in residuum derived from shale and which have less clay, more rock fragments, and fewer rock outcrops the than Carbo soils; on landscapes similar to or higher than those of the Carbo soils
- Areas of very deep Murrill soils, which formed in colluvium and have less clay than the Carbo soils; on ridges and spur ridges on landscapes higher than those of the Carbo soils
- Areas of shallow Newbern soils, which have less clay than the Carbo soils; on escarpments on landscapes lower than those of the Carbo soils
- Areas of very deep Oriskany soils, which formed in colluvium derived from sandstone and shale and have sandstone fragments; on ridges and spur ridges on landscapes higher than those of the Carbo soils and in drainageways
- Areas of deep Pisgah soils, which have less clay and fewer rock outcrops than the Carbo soils; on similar landscapes
- Areas of very deep Timberville soils, which formed in colluvium and alluvium and have less clay than the Carbo soils; in drainageways on landscapes lower than those of the Carbo soils

Taxonomic Classification

Very fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Carbo silt loam in an area of Carbo-Rock outcrop complex, 25 to 65 percent slopes; in Tazewell County, Virginia; in pasture, 1.5 miles south of Tazewell, about 0.33 mile northeast of the intersection of Highways VA-16 and VA-604, about 2 miles southeast of Highways US-19 and 460; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 4 minutes 57.00 seconds N. and long. 81 degrees 31 minutes 26.00 seconds W.

A—0 to 5 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; friable, slightly sticky, nonplastic; many very fine roots; many very fine pores; 3 percent subangular limestone channers; neutral; clear smooth boundary.

BA—5 to 12 inches; strong brown (7.5YR 5/6) silty clay loam; weak fine and medium subangular blocky structure; friable, moderately sticky, slightly plastic; few very fine roots; many very fine pores; 2 percent subangular limestone channers; slightly acid; clear wavy boundary.

Bt1—12 to 25 inches; strong brown (7.5YR 5/6) clay; moderate medium subangular blocky structure; firm, very sticky, moderately plastic; few very fine roots; many very fine pores; many faint clay films on all faces of peds; 1 percent subangular limestone channers; neutral; clear wavy boundary.

Bt2—25 to 34 inches; strong brown (7.5YR 4/6) clay; moderate medium subangular blocky structure; firm, very sticky, very plastic; few very fine roots; many very fine pores; many faint clay films on all faces of peds; 2 percent subangular limestone channers; neutral; abrupt wavy boundary.

R—34 inches; limestone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Limestone, quartz, and some shale fragments; 0 to 10 percent in the Ap and BA horizons and 0 to 15 percent in the B and C horizons
Reaction: Very strongly acid to neutral in the A horizon and moderately acid to neutral in the B horizon
Note: The Ap horizon, where it occurs, is less than 6 inches thick and has value and chroma of 3

A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—silt loam

BA horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—4 to 8
Texture—silt loam or silty clay loam

Bt horizon:
Hue—5YR to 10YR; hue of 5YR only occurs in the lower part of horizon
Value—4 to 6; in some pedons, horizon has mottles and streaks with higher value
Chroma—4 to 8; in some pedons, horizon has mottles and streaks with higher chroma
Texture—clay

C horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silty clay or clay

R horizon:
Bedrock—generally limestone; some interbedded limestone and shale

Cedarcreek Series

Physiographic province: Appalachian Plateau
Landform: Surface mines on ridges, spurs, hills, and mountains
Parent material: Mine spoil derived from sandstone, siltstone, shale, and coal
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 80 percent

Associated Soils

- Areas of moderately deep Alticrest soils, which formed in residuum derived from sandstone and have more sand and fewer rock fragments than the Cedarcreek soils; on summits and shoulders on landscapes similar to or higher than those of the Cedarcreek soils

- Areas of moderately deep Berks soils, which formed in residuum derived from shale; on summits, shoulders, and nose slopes on landscapes similar to or higher than those of the Cedarcreek soils
- Areas of moderately deep Gilpin soils, which formed in residuum derived from shale and have fewer rock fragments than the Cedarcreek soils; on summits, shoulders, and nose slopes on landscapes similar to or higher than those of the Cedarcreek soils
- Areas of deep Grimsley soils, which formed in colluvium derived from sandstone and shale; on ridges and spur ridges on landscapes similar to or higher than those of the Cedarcreek soils and in drainageways
- Areas of moderately deep Lily soils, which formed in residuum derived from sandstone and have fewer rock fragments than the Cedarcreek soils; on summits and shoulders on landscapes higher than those of the Cedarcreek soils

Taxonomic Classification

Loamy-skeletal, mixed, active, acid, mesic Typic Udorthents

Typical Pedon

Cedarcreek extremely stony loam in an area of Cedarcreek-Rock outcrop complex, 35 to 80 percent slopes, very stony; in Tazewell County, Virginia; in woodland, about 1.4 miles west-northwest of Richlands, 300 feet east of a coal haul road, 6,000 feet north of where Mudlick Creek passes under Highway US-460 in Doran; Richlands, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 6 minutes 15.60 seconds N. and long. 81 degrees 50 minutes 16.80 seconds W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) extremely stony loam; moderate fine granular structure; friable, nonsticky, nonplastic; common fine and medium roots; common fine tubular and vesicular pores; 2 percent subangular coal gravel, 15 percent subangular shale channers, 20 percent subangular siltstone channers, and 30 percent subangular sandstone stones; strongly acid; clear smooth boundary.

C1—4 to 26 inches; dark yellowish brown (10YR 4/4) and dark grayish brown (10YR 4/2) extremely stony loam; massive; friable, nonsticky, nonplastic; few fine and medium roots; common fine tubular and vesicular pores; 5 percent subangular coal gravel, 20 percent subangular siltstone channers, 20 percent subangular shale channers, and 30 percent subangular sandstone stones; very strongly acid; gradual smooth boundary.

C2—26 to 58 inches; yellowish brown (10YR 5/4) extremely stony loam; massive; friable, nonsticky, nonplastic; few fine roots; common fine vesicular and tubular pores; 2 percent subangular coal gravel, 15 percent subangular shale channers, 15 percent subangular siltstone channers, and 30 percent subangular sandstone stones; very strongly acid; abrupt smooth boundary.

C3—58 to 72 inches; dark grayish brown (10YR 4/2) very channery loam; massive; friable, nonsticky, nonplastic; few fine roots; common fine tubular and vesicular pores; 5 percent subangular siltstone channers, 10 percent subangular sandstone channers, 10 percent subangular shale channers, and 15 percent subangular coal gravel; very strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches

Rock fragments (content and type): 15 to 80 percent throughout the profile; on average, more than 35 percent in the particle-size control section; sandstone, siltstone, shale, and coal fragments (each less than 65 percent of total rock fragments in the control section)

Reaction: Strongly acid to extremely acid throughout the profile except for surface layers that have been limed

A horizon:
Hue—7.5YR to 5Y or neutral
Value—2 to 5
Chroma—0 to 6
Texture—loam in the fine-earth fraction

C horizon:
Hue—7.5YR to 5Y or neutral
Value—2 to 6
Chroma—0 to 8
Texture (in the fine-earth fraction)—loam, silt loam, or sandy loam

Chiswell Series

Physiographic province: Valley and Ridge
Landform: Hills
Parent material: Residuum weathered from shale interbedded with fine-grained sandstone and siltstone and, in some places, limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Shallow
Slope range: 15 to 60 percent

Associated Soils

- Areas of moderately deep Carbo soils, which formed in limestone residuum and have more clay, fewer rock fragments, and more rock outcrops than the Chiswell soils; on landscapes similar to or lower than those of the Chiswell soils
- Areas of very deep Groseclose soils, which formed in the predominantly limestone part of the parent material and have more clay and fewer rock fragments than the Chiswell soils; on landscapes similar to or lower than those of the Chiswell soils
- Areas of moderately deep Litz soils; on landscapes similar to those of the Chiswell soils

Taxonomic Classification

Loamy-skeletal, mixed, active, mesic, shallow Typic Dystrudepts

Typical Pedon

Chiswell silt loam in an area of Chiswell-Litz complex, 35 to 60 percent slopes; in Tazewell County, Virginia; in pasture, about 1.6 miles east-northeast of Tazewell, 4.25 miles south of the county line for McDowell County, West Virginia, 1,000 feet north of Highway VA-631; Tazewell North, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 8 minutes 36.00 seconds N. and long. 81 degrees 34 minutes 49.00 seconds W.

A—0 to 2 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine tubular and vesicular pores; 10 percent angular shale channers; slightly acid; clear smooth boundary.

BA—2 to 11 inches; yellowish brown (10YR 5/4) channery silt loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine tubular and vesicular pores; 20 percent angular shale channers; moderately acid; clear wavy boundary.

Bw—11 to 14 inches; yellowish brown (10YR 5/6) very channery silt loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine roots; many very fine vesicular and tubular pores; 40 percent angular shale channers; strongly acid; gradual wavy boundary.

C—14 to 17 inches; yellowish brown (10YR 5/6) extremely channery silt loam; weak fine granular structure; friable, slightly sticky, nonplastic; many very fine and fine vesicular and tubular pores; 60 percent angular shale channers; very strongly acid; clear wavy boundary.

Cr—17 to 20 inches; light olive brown (2.5Y 5/6) weathered shale bedrock; clear wavy boundary.

R—20 inches; shale bedrock.

Range in Characteristics

Solum thickness: 5 to 19 inches
Depth to bedrock: 10 to 20 inches
Rock fragments (type and content): Shale, siltstone, or fine-grained sandstone fragments; 5 to 70 percent in the A or Ap horizon, 20 to 80 percent in the Bw horizon, and 45 to 90 percent in the C horizon
Reaction: Extremely acid to moderately acid, except in limed areas

A or Ap horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 5
Texture—silt loam

BA horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—silt loam or loam in the fine-earth fraction

Bw horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam, loam, silty clay loam, or clay loam in the fine-earth fraction

C horizon:
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture—silt loam, loam, silty clay loam, or clay loam in the fine-earth fraction

Coursey Series

Physiographic province: Valley and Ridge
Landform: Stream terraces
Parent material: Alluvium derived from limestone, sandstone, and shale
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 7 percent

Associated Soils

- Areas of well drained Allegheny soils; on terraces on landscapes similar to or higher than those of the Coursey soils
- Areas of Lindside soils, which have more silt and less sand than the Coursey soils; on flood plains
- Areas of somewhat poorly drained Newark soils, which have more silt and less sand than the Coursey soils; on flood plains
- Areas of well drained Pope soils, which have less clay and more sand than the Coursey soils; on flood plains
- Areas of poorly drained Purdy soils, which have more clay than the Coursey soils; on landscapes similar to or lower than those of the Coursey soils

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Aquic Hapludults

Typical Pedon

Coursey loam, 2 to 7 percent slopes; in Tazewell County, Virginia; in pasture, about 1 mile east-southeast of Richlands, 0.25 mile west-southwest of Cedar Bluff, about 700 feet southeast of the intersection of Highway US-460 and Business Highway US-460 in Cedar Bluff; Richlands, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 5 minutes 11.50 seconds N. and long. 81 degrees 46 minutes 1.40 seconds W.

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) loam; moderate fine granular structure; friable, nonsticky, nonplastic; many very fine roots; many fine tubular and vesicular pores; neutral; abrupt smooth boundary.

BA—8 to 13 inches; light yellowish brown (10YR 6/4) loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; common fine roots; common fine tubular and vesicular pores; neutral; clear wavy boundary.

Bt1—13 to 26 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; common fine tubular and vesicular pores; few faint patchy clay films on all faces of peds; slightly acid; clear smooth boundary.

Bt2—26 to 40 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine roots; common fine tubular and vesicular pores; common distinct discontinuous clay films on all faces of peds; common fine and medium prominent light brownish gray (10YR 6/2) iron depletions and common fine and medium faint strong brown (7.5YR 5/6) masses of oxidized iron; moderately acid; clear wavy boundary.

Bt3—40 to 53 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine roots; common fine tubular and vesicular pores; common distinct discontinuous clay films on all faces of peds; few medium distinct strong brown (7.5YR 5/8) masses of oxidized iron and many medium prominent light brownish gray (10YR 6/2) iron depletions; strongly acid; gradual wavy boundary.

Bt4—53 to 60 inches; brown (10YR 5/3) and yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine vesicular and tubular pores; few faint discontinuous clay films on all faces of peds; few fine distinct strong brown (7.5YR 5/8) masses of oxidized iron and many medium prominent light brownish gray (10YR 6/2) iron depletions; 5 percent rounded sandstone gravel; very strongly acid; gradual wavy boundary.

Btg—60 to 65 inches; light brownish gray (10YR 6/2) sandy clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine vesicular and tubular pores; few faint discontinuous clay films on all faces of peds; many medium prominent strong brown (7.5YR 5/6) and many coarse prominent yellowish brown (10YR 5/6) masses of oxidized iron; 5 percent rounded sandstone gravel; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches or more
Depth to bedrock: More than 60 inches
Rock fragments (type and content): Gravel and cobbles; 0 to 35 percent in the A and Bt horizons and 0 to 50 percent in the BC and C horizons
Reaction: Extremely acid to strongly acid throughout the profile, except in limed areas

A horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—loam

Ap horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 4
Texture—loam in the fine-earth fraction

BA horizon:
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture—loam in the fine-earth fraction

Bt horizon:
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture—loam, clay loam, or sandy clay loam in the fine-earth fraction

Btg horizon:
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—2
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

BC horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—3 to 8
Texture—loam, clay loam, or sandy clay loam in the fine-earth fraction

C horizon (if it occurs):
Hue—7.5YR to 2.5Y or neutral
Value—4 to 8
Chroma—0 to 8
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

Craigsville Series

Physiographic province: Valley and Ridge and Appalachian Plateau
Landform: Flood plains

Parent material: Alluvium derived from shale, siltstone, and sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Very deep
Slope range: 0 to 5 percent

Associated Soils

- Areas of moderately well drained Philo soils, which are deep to bedrock and have fewer rock fragments than the Craigsville soils; on similar landscapes
- Areas of Pope soils, which are subject to rare flooding and have fewer rock fragments than the Craigsville soils; on flood plains similar to or higher than those of the Craigsville soils

Taxonomic Classification

Loamy-skeletal, mixed, superactive, mesic Fluventic Dystrudepts

Typical Pedon

Craigsville very gravelly sandy loam, 0 to 5 percent slopes, frequently flooded; in Tazewell County, Virginia; in woodland, about 5 miles south-southeast of Tazewell, 2.2 miles east of the intersection of Highway VA-16 and Forest Service Road 222, about 50 feet north of Roaring Fork; Hutchinson Rock, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 2 minutes 6.00 seconds N. and long. 81 degrees 28 minutes 50.00 seconds W.

Oi—2 inches to 0; partly decomposed and undecomposed leaves and twigs.

A—0 to 7 inches; dark brown (10YR 3/3) very gravelly sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many coarse roots; many very fine pores; 40 percent well rounded sandstone gravel; very strongly acid; clear smooth boundary.

Bw1—7 to 23 inches; brown (7.5YR 4/4) very cobbly sandy loam; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; many medium roots; many very fine pores; 20 percent well rounded sandstone gravel and 30 percent well rounded sandstone cobbles; very strongly acid; clear wavy boundary.

Bw2—23 to 35 inches; reddish brown (5YR 4/4) extremely cobbly sandy loam; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; common fine roots; many very fine pores; 10 percent well rounded sandstone stones, 15 percent well rounded sandstone gravel, and 40 percent well rounded sandstone cobbles; very strongly acid; clear wavy boundary.

C—35 to 61 inches; reddish brown (5YR 4/4) extremely stony loamy sand; single grain; loose, nonsticky, nonplastic; few fine roots; many very fine pores; 10 percent well rounded sandstone gravel, 15 percent well rounded sandstone cobbles, and 40 percent well rounded sandstone stones; very strongly acid.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: More than 60 inches
Reaction: Very strongly acid or strongly acid throughout the profile
Rock fragment content: 35 to 60 percent in the A horizon and 35 to 70 percent in the Bw and C horizons

A horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 to 4
Texture—sandy loam in the fine-earth fraction

Bw horizon:
Hue—5YR to 10YR
Value—4 or 5
Chroma—4 to 6
Texture—loam or sandy loam in the fine-earth fraction

C horizon:
Hue—5YR to 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loamy sand or sandy loam in the fine-earth fraction

Drypond Series

Physiographic province: Valley and Ridge
Landform: Mountains
Parent material: Residuum weathered from sandstone and quartzite
Drainage class: Excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Shallow
Slope range: 15 to 80 percent

Associated Soils

- Areas of Calvin soils, which are deeper and redder than the Drypond soils, have more silt and less sand, and formed in residuum derived from shale and sandstone; on landscapes lower than those of the Drypond soils
- Areas of Lily soils, which are deeper than the Drypond soils and have fewer rock fragments; on landscapes similar to or lower than those of the Drypond soils
- Areas of Wallen soils, which are deeper than the Drypond soils; on similar landscapes

Taxonomic Classification

Loamy-skeletal, siliceous, active, mesic Lithic Dystrudepts

Typical Pedon

Drypond very gravelly sandy loam in an area of Drypond-Rock outcrop complex, 15 to 35 percent slopes, extremely stony; in Smyth County, Virginia; about 1.5 miles northwest of the junction of Highways VA-16 and VA-348, about 0.5 mile north of Stone Lick Hollow, and about 2.0 miles southeast of Big Cave; Chatham Hill, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 53 minutes 19.60 seconds N. and long. 81 degrees 33 minutes 5.30 seconds W.

Oi—2 inches to 0; partly decomposed and undecomposed leaves and twigs.
A—0 to 3 inches; brown (10YR 4/3) very gravelly sandy loam; weak fine granular structure; friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine vesicular and tubular pores; 40 percent subangular sandstone gravel; extremely acid; abrupt wavy boundary.
Bw—3 to 11 inches; yellowish brown (10YR 5/8) very gravelly sandy loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; common very fine and fine roots; many very fine vesicular and tubular pores; 45 percent subangular sandstone gravel; very strongly acid; gradual wavy boundary.
C—11 to 16 inches; yellowish brown (10YR 5/8) extremely gravelly sandy loam; massive; friable, slightly sticky, nonplastic; few very fine roots; many very fine

vesicular and tubular pores; 70 percent subangular sandstone gravel; very strongly acid; clear wavy boundary.
R—16 inches; quartzite bedrock.

Range in Characteristics

Solum thickness: 10 to 20 inches
Depth to bedrock: 10 to 20 inches
Rock fragments (type and content): Gravel and channers; 35 to 65 percent in the A horizon, 25 to 80 percent in the Bw horizon, and 45 to 90 percent in the C horizon
Reaction: Extremely acid or very strongly acid

A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 4
Texture—sandy loam in the fine-earth fraction

Bw horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 8
Texture—sandy loam, loam, or sandy clay loam in the fine-earth fraction

C horizon:
Hue—5YR to 10YR
Value—3 to 5
Chroma—3 to 8
Texture—sandy loam or loam in the fine-earth fraction

Frederick Series

Physiographic province: Valley and Ridge
Landform: Hills; some areas have karst topography
Parent material: Residuum weathered from dolomitic limestone, interbedded with sandstone and shale in some places
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 60 percent

Associated Soils

- Areas of Allegheny soils, which formed in alluvium derived from sandstone, shale, and limestone and have less clay than the Frederick soils; on terraces on landscapes lower than those of the Frederick soils
- Areas of moderately deep Carbo soils, which have more rock outcrops than the Frederick soils; on hills and spur ridges on landscapes similar to or higher than those of the Frederick soils
- Areas of Murrill soils, which formed in colluvium derived from sandstone and shale and have less clay at shallower depths than the Frederick soils; on footslopes and toeslopes on ridges and spur ridges on landscapes similar to or higher than those of the Frederick soils
- Areas of shallow Newbern soils, which have less clay than the Frederick soils and are in a complex with rock outcrops; on escarpments on landscapes steeper than those of the Frederick soils
- Areas of Oriskany soils, which formed in colluvium derived from sandstone,

siltstone, and shale and have more rock fragments and less clay than the Frederick soils; on backslopes, footslopes, and toeslopes on landscapes higher than those of the Frederick soils and in drainageways
- Areas of Timberville soils, which formed in alluvium and colluvium derived from surrounding uplands and are subject to flooding by runoff; in drainageways and depressions on landscapes lower than those of the Frederick soils

Taxonomic Classification

Fine, mixed, semiactive, mesic Typic Paleudults

Typical Pedon

Frederick silt loam, 7 to 15 percent slopes; in Tazewell County, Virginia; in cropland, about 3 miles south-southwest of Tazewell, 0.5 mile northwest of the intersection of Highways VA-16 and VA-602, about 2.75 miles south-southeast of the intersection of Highway VA-16 and old Highway US-19 and Highway 460; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 3 minutes 38.00 seconds N. and long. 81 degrees 32 minutes 12.00 seconds W.

Ap—0 to 8 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; friable, slightly sticky, slightly plastic; many very fine roots; many very fine pores; 3 percent angular chert gravel; neutral; clear smooth boundary.

BA—8 to 14 inches; strong brown (7.5YR 5/8) silty clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; many very fine pores; 12 percent angular chert gravel; neutral; clear wavy boundary.

Bt1—14 to 27 inches; yellowish red (5YR 5/8) silty clay; few fine faint red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; common very fine pores; few faint clay films on all faces of peds; 1 percent angular chert gravel; neutral; clear wavy boundary.

Bt2—27 to 34 inches; yellowish red (5YR 5/8) clay; common medium distinct brownish yellow (10YR 6/8) and common medium faint red (2.5YR 4/8) mottles; moderate fine and medium subangular blocky structure; firm, moderately sticky, slightly plastic; many very fine pores; common distinct clay films on all faces of peds; 5 percent angular chert gravel; moderately acid; clear wavy boundary.

Bt3—34 to 50 inches; yellowish red (5YR 5/8) clay; few fine distinct brownish yellow (10YR 6/8) and few fine faint red (2.5YR 4/8) mottles; moderate fine and medium subangular blocky structure; firm, moderately sticky, moderately plastic; many very fine pores; common distinct clay films on all faces of peds; 1 percent angular chert gravel; very strongly acid; clear wavy boundary.

Bt4—50 to 62 inches; yellowish red (5YR 5/8) silty clay; common fine distinct brownish yellow (10YR 6/8) and common fine faint red (2.5YR 4/8) mottles; moderate fine and medium subangular blocky structure; firm, moderately sticky, slightly plastic; many fine pores; few distinct clay films on all faces of peds; 10 percent angular chert gravel; very strongly acid.

Range in Characteristics

Solum thickness: 60 inches or more

Depth to bedrock: More than 72 inches

Rock fragments (type and content): Dominantly chert gravel but including siltstone, shale, and sandstone fragments; 0 to 35 percent in the A, E, BA, and BE horizons and 0 to 15 percent in the Bt, BC, and C horizons

Reaction: Very strongly acid to moderately acid throughout the profile, except in limed areas

Ap horizon:

Hue—7.5YR or 10YR

Value—4 to 6
Chroma—4 or 6
Texture—silt loam

E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 to 7
Chroma—3 to 8
Texture—loam or silt loam

BA or BE horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silt loam or silty clay loam

Bt horizon:
Hue—2.5YR or 5YR
Value—4 to 6
Chroma—4 to 8
Texture—silty clay loam, silty clay, clay, or clay loam in upper part of horizon and silty clay or clay in lower part

BC horizon (if it occurs):
Hue—2.5YR to 10YR
Value—3 to 6
Chroma—4 to 8
Texture—silty clay or clay

C horizon (if it occurs):
Hue—5YR
Value—4 to 7
Chroma—6 to 8
Texture—silty clay or clay

Gilpin Series

Physiographic province: Appalachian Plateau
Landform: Ridges and spurs
Parent material: Residuum weathered from noncalcareous shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 7 to 70 percent

Associated Soils

- Areas of Berks soils, which have more shale fragments and less clay than the Gilpin soils; on similar landscapes
- Areas of very deep Cedarcreek soils, which formed in regolith from surface mining operations and have more rock fragments than the Gilpin soils; on shoulders, backslopes, footslopes, and toeslopes on landscapes similar to or lower than those of the Gilpin soils
- Areas of deep Grimsley soils, which formed in colluvium derived from sandstone and shale; in drainageways on landscapes similar to or lower than those of the Gilpin soils

Taxonomic Classification

Fine-loamy, mixed, active, mesic Typic Hapludults

Typical Pedon

Gilpin silt loam in an area of Berks-Gilpin complex, 35 to 70 percent slopes; in Tazewell County, Virginia; in woodland, about 5 miles north-northeast of Richlands, 2.7 miles south of the intersection of Highways VA-616 and VA-621 in Jewell Ridge on Highway VA-621, about 2,000 feet east; Jewell Ridge, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 10 minutes 11.70 seconds N. and long. 81 degrees 45 minutes 47.60 seconds W.

O—2 inches to 0; undecomposed hardwood leaf litter and twigs.

A—0 to 2 inches; brown (10YR 4/3) silt loam; moderate fine granular structure; friable, nonsticky, nonplastic; many fine and medium roots; many fine and medium vesicular and tubular pores; 5 percent subangular shale; very strongly acid; clear smooth boundary.

BE—2 to 6 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable, nonsticky, nonplastic; common fine and medium roots; common fine tubular and vesicular pores; 5 percent subangular shale channers; very strongly acid; clear wavy boundary.

Bt1—6 to 18 inches; strong brown (7.5YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable, slightly sticky, moderately plastic; common fine and medium roots; common fine and few medium vesicular and tubular pores; common distinct continuous brown (7.5YR 5/4) clay films on all faces of peds; 5 percent subangular shale channers; strongly acid; gradual wavy boundary.

Bt2—18 to 30 inches; strong brown (7.5YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable, slightly sticky, moderately plastic; common fine and medium roots; common fine vesicular and tubular pores; common distinct continuous brown (7.5YR 5/4) clay films on all faces of peds; 10 percent subangular shale channers; strongly acid; gradual wavy boundary.

C—30 to 35 inches; yellowish brown (10YR 5/6) extremely channery silt loam; weak medium subangular blocky structure; firm, nonsticky, nonplastic; few fine roots; common fine vesicular and tubular pores; few faint patchy clay films on rock fragments; 75 percent subangular shale channers; very strongly acid; clear wavy boundary.

R—35 inches; shale bedrock.

Range in Characteristics

Solum thickness: 18 to 36 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Shale, siltstone, or sandstone channers; 5 to 35 in the solum and 30 to 90 percent in the C horizon
Reaction: Strongly acid to extremely acid throughout the profile, except in limed areas

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 to 4
Texture—silt loam in the fine-earth fraction

E horizon (if it occurs):
Hue—10YR
Value—3 to 5
Chroma—2
Texture—silt loam or loam in the fine-earth fraction

BE horizon:
Hue—7.5YR to 10YR
Value—4 to 6
Chroma—3 to 5
Texture—silt loam or loam

Bt horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture—silt loam, loam, clay loam, or silty clay loam in the fine-earth fraction

C horizon:
Hue—7.5YR to 2.5Y
Value—3 to 5
Chroma—2 to 6
Texture—silt loam, loam, or silty clay loam in the fine-earth fraction

Grimsley Series

Physiographic province: Appalachian Plateau
Landform: Base of slopes of ridges and spurs and drainageways
Parent material: Colluvium derived from sandstone and shale
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Very deep
Slope range: 8 to 70 percent

Associated Soils

- Areas of moderately deep Alticrest soils, which formed in residuum derived from sandstone and have more sand and fewer rock fragments than the Grimsley soils; on summits and shoulders on landscapes higher than those of the Grimsley soils
- Areas of moderately deep Berks soils, which formed in residuum derived from shale and have shale fragments; on landscapes similar to or higher than those of the Grimsley soils
- Areas of very deep Cedarcreek soils, which formed in regolith of surface mining operations; on landscapes similar to or higher than those of the Grimsley soils
- Areas of very deep Craigsville soils; on flood plains
- Areas of moderately deep Gilpin soils, which formed in residuum derived from shale and have fewer rock fragments than the Grimsley soils; on landscapes similar to or higher than those of the Grimsley soils
- Areas of moderately deep Lily soils, which formed in residuum derived from sandstone and have fewer rock fragments than the Grimsley soils; on summits and shoulders on landscapes higher than those of the Grimsley soils
- Areas of moderately well Philo soils, which have fewer rock fragments than the Grimsley soils; on flood plains

Taxonomic Classification

Loamy-skeletal, siliceous, semiactive, mesic Typic Hapludults

Typical Pedon

Grimsley loam, 35 to 70 percent slopes, very stony; in Tazewell County, Virginia; in woodland, about 2.5 miles northeast of the town of Richlands, 2.6 miles north on Highway VA-67 from the intersection of Highways VA-67 and US-460 in Richlands, 2,300 feet east of Highway VA-67; Jewell Ridge, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 7 minutes 32.40 seconds N. and long. 81 degrees 46 minutes 28.20 seconds W.

Oi—2 inches to 0; undecomposed hardwood leaves and twigs.

A—0 to 2 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine roots; many fine vesicular and tubular pores; 14 percent subangular sandstone channers; strongly acid; clear smooth boundary.

E—2 to 10 inches; yellowish brown (10YR 5/4) channery loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; common fine roots; many fine tubular and vesicular pores; 25 percent subangular sandstone channers; strongly acid; clear wavy boundary.

Bt1—10 to 24 inches; yellowish brown (10YR 5/4) very channery clay loam; moderate fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; many fine tubular and vesicular pores; common faint continuous clay films on rock fragments and on all faces of peds; 40 percent subangular sandstone channers; strongly acid; clear wavy boundary.

Bt2—24 to 48 inches; yellowish brown (10YR 5/4) very channery clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; many fine tubular and vesicular pores; common faint continuous clay films on rock fragments and on all faces of peds; 45 percent subangular sandstone channers; strongly acid; gradual wavy boundary.

Bt3—48 to 60 inches; yellowish brown (10YR 5/4) very channery clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; many fine tubular and vesicular pores; common faint continuous clay films on rock fragments and on all faces of peds; 50 percent subangular sandstone channers; strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches
Depth to bedrock: 40 to 60 inches or more
Rock fragments (type and content): Sandstone and shale channers and stones; 15 to 50 percent in the A horizon and 35 to 65 percent in the B and C horizons
Reaction: Strongly acid or very strongly acid throughout the profile

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2
Texture—loam in the fine-earth fraction

E horizon:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—loam or sandy loam in the fine-earth fraction

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam, clay loam, or sandy clay loam; a weighted average of more than 20 percent clay in the fine-earth fraction

BC or C horizon (if it occurs):
Hue—7.5YR or 10YR

Value—4 to 6
Chroma—4 to 8
Texture—loam, clay loam, sandy clay loam, or sandy loam in the fine-earth fraction

Groseclose Series

Physiographic province: Valley and Ridge
Landform: Hills
Parent material: Residuum weathered from limestone interbedded with shale, siltstone, and sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Very deep
Slope range: 2 to 35 percent

Associated Soils

- Areas of moderately deep Carbo soils, which have more rock outcrops than the Groseclose soils; on similar landscapes
- Areas of shallow Chiswell soils, which formed mainly in shale and have less clay and more rock fragments than the Groseclose soils; on landscapes similar to or higher than those of the Groseclose soils
- Areas of moderately deep Litz soils, which formed mainly in shale and have less clay and more rock fragments than the Groseclose soils; on landscapes similar to or higher than those of the Groseclose soils

Taxonomic Classification

Fine, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Groseclose silt loam, 2 to 7 percent slopes; in Tazewell County, Virginia; in an area of hayland, about 1.5 miles north of Tazewell, 3.6 miles south-southeast of the county line of McDowell County, West Virginia, 125 feet east of Highway VA-16; Tazewell North, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 9 minutes 24.00 seconds N. and long. 81 degrees 32 minutes 22.00 seconds W.

Ap—0 to 5 inches; dark yellowish brown (10YR 3/4) silt loam; weak fine granular structure; friable, slightly sticky, nonplastic; many very fine and fine roots; many very fine vesicular and tubular pores; slightly acid; abrupt smooth boundary.
BA—5 to 11 inches; brown (7.5YR 4/4) silty clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine roots; many very fine tubular and vesicular pores; moderately acid; clear wavy boundary.
Bt—11 to 52 inches; yellowish red (5YR 5/6) clay; moderate fine subangular blocky structure; firm, moderately sticky, moderately plastic; common very fine roots; common very fine vesicular and tubular pores; common faint continuous clay films on all faces of peds; 1 percent angular chert gravel; strongly acid; clear wavy boundary.
CB—52 to 61 inches; yellowish red (5YR 5/8) silty clay loam; weak medium subangular blocky structure; friable, moderately sticky, slightly plastic; few very fine roots; common very fine tubular and vesicular pores; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches
Depth to bedrock: More than 60 inches

Rock fragments (type and content): Chert, siltstone, shale, and sandstone fragments; 0 to 35 percent throughout the profile
Reaction: Extremely acid to strongly acid, except in limed areas

Ap or A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 8
Texture—silt loam

BA horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silt loam, loam, silty clay loam, or clay loam in the fine-earth fraction

Bt horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—clay, silty clay, silty clay loam, or clay loam in the fine-earth fraction

BC or CB horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—clay, silty clay, silty clay loam, clay loam, or sandy clay loam in the fine-earth fraction

C horizon (if it occurs):
Hue—5YR to 10YR
Value—4 to 7
Chroma—4 to 8
Texture—silty clay loam, silt loam, clay loam, clay, sandy clay loam, or sandy loam in the fine-earth fraction

Guernsey Series

Physiographic province: Valley and Ridge
Landform: Base of slopes of hills
Parent material: Residuum and colluvium derived from sandstone, siltstone, shale, and limestone
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Very deep
Slope range: 2 to 15 percent

Associated Soils

- Areas of Lindside soils, which have more silt and less clay than the Guernsey soils; on flood plains
- Areas of somewhat poorly drained Newark soils, which have more silt and less clay than the Guernsey soils; on flood plains
- Areas of well drained Pope soils, which have more sand and less clay than the Guernsey soils; on flood plains
- Areas of poorly drained Purdy soils; on landscapes similar to those of the Guernsey soils and in depressions on landscapes lower than those of the Guernsey soils

Taxonomic Classification

Fine, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon

Guernsey silt loam, 2 to 7 percent slopes; in Tazewell County, Virginia; in cropland, about 11 miles south-southwest of Tazewell, Virginia, 11 miles southeast of Richlands, 0.5 mile north-northeast of the intersection of Highways VA-607 and VA-675, about 250 feet west of Highway VA-675; Broadford, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 59 minutes 19.00 seconds N. and long. 81 degrees 38 minutes 4.00 seconds W.

Ap—0 to 10 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; common very fine roots; many very fine tubular and vesicular pores; 3 percent subrounded sandstone gravel; strongly acid; abrupt smooth boundary.

BE—10 to 21 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; many very fine and fine vesicular and tubular pores; 8 percent subrounded sandstone gravel; strongly acid; clear wavy boundary.

Bt1—21 to 34 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, slightly plastic; common very fine and fine tubular and vesicular pores; common faint clay films on all faces of peds; common fine prominent light gray (10YR 7/2) iron depletions; 5 percent subrounded sandstone gravel; strongly acid; gradual wavy boundary.

Bt2—34 to 44 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine tubular and vesicular pores; common faint clay films on all faces of peds; many medium prominent light gray (10YR 7/2) and many coarse prominent light gray (10YR 7/2) iron depletions; 5 percent subrounded sandstone gravel; strongly acid; gradual wavy boundary.

Bt3—44 to 56 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine tubular and vesicular pores; common faint clay films on all faces of peds; many medium faint yellowish brown (10YR 5/6) masses of oxidized iron; 5 percent subrounded sandstone gravel; moderately acid; gradual wavy boundary.

2Cg—56 to 61 inches; light gray (10YR 7/1) silty clay; massive; firm, moderately sticky, moderately plastic; few very fine tubular and vesicular pores; many medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; 10 percent subrounded sandstone gravel; moderately acid.

Range in Characteristics

Solum thickness: 30 to 60 inches
Depth to bedrock: More than 50 inches
Rock fragments content: 2 to 15 percent in the Ap horizon, 2 to 25 percent in the BA and Bt horizons, and 2 to 35 percent in the BC and C horizons
Reaction: Very strongly acid to moderately acid in the Ap horizon, except in limed areas; very strongly acid or strongly acid in BA horizon; very strongly acid to moderately acid in upper part of the Bt horizon and generally increasing with depth and ranging to neutral in the lower part of Bt horizon; moderately acid to slightly alkaline in the 2C horizon

Ap horizon:
Hue—10YR
Value—3 or 4

Chroma—2 to 4
Texture—silt loam

BE horizon:
Hue—7.5YR or 10YR
Value—5
Chroma—4 to 6
Texture—silt loam or silty clay loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silty clay loam, silty clay, or clay in the fine-earth fraction
Redoximorphic features—colors with low and high chroma are within the upper 10 inches of horizon

2C horizon:
Hue—7.5YR to 5Y or neutral
Value—4 to 6
Chroma—0 to 6
Texture—silty clay loam, silty clay, or clay in the fine-earth fraction

Lily Series

Physiographic province: Valley and Ridge and Appalachian Plateau
Landform: Ridges and spurs
Parent material: Residuum weathered from sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 7 to 65 percent

Associated Soils

- Areas of Alticrest soils, which have more sand and less clay than the Lily soils
- Areas of Berks soils, which formed in residuum derived from shale and have more rock fragments and more silt than the Lily soils; on landscapes similar to or lower than those of the Lily soils
- Areas of Brushy soils, which formed in residuum derived from cherty limestone and have more rock fragments than the Lily soils; on hills and spur ridges on landscapes lower than those of the Lily soils
- Areas of very deep Cedarcreek soils, which formed in regolith derived from surface mining operations; on shoulders, backslopes, footslopes, and toeslopes on landscapes lower than those of the Lily soils
- Areas of deep Grimsley soils, which formed in colluvium derived from sandstone and shale and have more rock fragments than the Lily soils; on ridges and spur ridges on landscapes lower than those of the Lily soils and in drainageways
- Areas of very deep Oriskany soils, which formed in colluvium derived from sandstone, siltstone, and shale and have more rock fragments than the Lily soils; on ridges and spur ridges on landscapes lower than those of the Lily soils and in drainageways
- Areas of Wallen soils, which have more rock fragments than the Lily soils; on ridges on landscapes similar to or higher than those of the Lily soils
- Areas of shallow Weikert soils, which formed in residuum derived from shale and

have more rock fragments and more silt than Lily soils; on landscapes similar to or lower than those of the Lily soils

Taxonomic Classification

Fine-loamy, siliceous, semiactive, mesic Typic Hapludults

Typical Pedon

Lily fine sandy loam, 25 to 35 percent slopes; in Tazewell County, Virginia; in a wooded area, about 3 miles west of Richlands, 1.25 miles northwest of Raven, 1.9 miles north on Highway VA-618 from intersection of Highways VA-618 and VA-67 in Raven, 200 feet east; Richlands, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 6 minutes 8.20 seconds N. and long. 81 degrees 52 minutes 10.90 seconds W.

Oi—2 inches to 0; undecomposed hardwood leaves and twigs.

A—0 to 4 inches; brown (10YR 4/3) fine sandy loam; moderate fine granular structure; very friable, nonsticky, nonplastic; common fine, medium, and coarse roots; common fine vesicular and tubular pores; 2 percent subangular sandstone gravel; very strongly acid; clear smooth boundary.

Bt1—4 to 14 inches; yellowish brown (10YR 5/6) clay loam; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; common medium roots; common fine vesicular and tubular pores; few faint discontinuous clay films on all faces of peds; 2 percent subangular sandstone gravel; very strongly acid; gradual wavy boundary.

Bt2—14 to 24 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; friable, slightly sticky, moderately plastic; common fine roots; common fine tubular and vesicular pores; common distinct continuous clay films on all faces of peds; 5 percent subangular sandstone gravel; very strongly acid; gradual wavy boundary.

Bt3—24 to 30 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; friable, slightly sticky, moderately plastic; few fine roots; common fine tubular and vesicular pores; common distinct continuous clay films on all faces of peds; 10 percent subangular sandstone gravel; very strongly acid; clear wavy boundary.

C—30 to 36 inches; yellowish brown (10YR 5/6) gravelly sandy loam; massive; firm, nonsticky, nonplastic; few fine roots; few fine tubular and vesicular pores; 30 percent subangular sandstone gravel; strongly acid; clear wavy boundary.

R—36 inches; sandstone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Sandstone fragments; 0 to 15 percent in the A, Ap, and E horizons, 0 to 30 percent in the B horizon, and 0 to 35 percent in the Bt, BC, and C horizons
Reaction: Extremely acid to strongly acid throughout the profile, except in limed areas

A horizon:
Hue—7.5YR or 10YR
Value—2 to 5
Chroma—1 to 3
Texture—fine sandy loam

Ap or E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 6

Chroma—2 to 4
Texture—fine sandy loam in the fine-earth fraction

Bt horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

BC or C horizon:
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loamy sand, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction

Lindside Series

Physiographic province: Valley and Ridge
Landform: Flood plains
Parent material: Alluvium derived from limestone
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Areas of Coursey soils, which have less silt and more sand than the Lindside soils; on low terraces above flood plains
- Areas of Guernsey soils, which have more clay than the Lindside soils; on low terraces above flood plains
- Areas of poorly drained Melvin soils, which are subject to frequent flooding; on landscapes similar to those of Lindside soils and in depressions on landscapes slightly lower than those of the Lindside soils
- Areas of somewhat poorly drained Newark soils; on landscapes similar to those of the Lindside soils
- Areas of poorly drained Purdy soils, which have more clay than the Lindside soils; on low terraces above flood plains

Taxonomic Classification

Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts

Typical Pedon

Lindside silt loam in an area of Newark-Lindside complex, 0 to 3 percent slopes, occasionally flooded; in Tazewell County, Virginia; in a pasture, about 0.8 mile southwest of Tazewell, 0.4 mile south-southwest of Highway US-460 Bypass, 100 feet west of Plum Creek; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 6 minutes 53.00 seconds N. and long. 81 degrees 33 minutes 38.00 seconds W.

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine roots; many very fine tubular and vesicular pores; slightly acid; clear smooth boundary.
Bw1—9 to 20 inches; brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine roots; many very fine vesicular and tubular pores; moderately acid; clear wavy boundary.

Bw2—20 to 34 inches; grayish brown (10YR 5/2) silty clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine roots; many very fine vesicular and tubular pores; many fine and medium distinct dark yellowish brown (10YR 4/4) iron-manganese masses on faces of peds; moderately acid; gradual wavy boundary.

BC—34 to 51 inches; grayish brown (10YR 5/2) silty clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine vesicular and tubular pores; many fine distinct dark yellowish brown (10YR 4/4 moist) iron-manganese masses on faces of peds; slightly acid; clear wavy boundary.

C—51 to 61 inches; dark gray (2.5Y 4/1) silty clay loam; massive; friable, moderately sticky, slightly plastic; common very fine tubular and common very fine vesicular pores; common fine prominent greenish gray (5BG 5/1) and many medium distinct gray (10YR 6/1) iron depletions; 1 percent rounded sandstone gravel, 1 percent rounded shale gravel, and 1 percent rounded limestone gravel; neutral.

Range in Characteristics

Solum thickness: 25 to 50 inches
Depth to bedrock: More than 60 inches
Rock fragment content: 0 to 5 percent within a depth of 40 inches and 0 to 30 percent below a depth of 40 inches
Reaction: Strongly acid to slightly alkaline in the upper part of the profile and moderately acid to slightly alkaline in the lower part

Ap horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam

BA and Bw horizons:
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—3 to 6 above a depth of 20 inches; 1 to 4 below a depth of 20 inches
Texture—silt loam or silty clay loam

BC horizon:
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—1 to 4
Texture—silt loam, silty clay loam, or clay loam

C horizon:
Hue—7.5YR to 2.5Y
Value—3 to 6
Chroma—1 to 4
Texture—silt loam, silty clay loam, loam, clay loam, very fine sandy loam, fine sandy loam, or sandy loam

Litz Series

Physiographic province: Valley and Ridge
Landform: Hills
Parent material: Residuum weathered from shale interbedded with fine-grained sandstone and siltstone and, in some places, limestone
Drainage class: Well drained

Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 15 to 60 percent

Associated Soils

- Areas of Carbo soils, which formed in residuum derived from limestone and have more clay, fewer rock fragments, and more rock outcrops than the Litz soils; on landscapes similar to or lower than those of the Litz soils
- Areas of shallow Chiswell soils; on landscapes similar to those of the Litz soils
- Areas of very deep Groseclose soils, which formed mainly in limestone and have more clay and fewer rock fragments than the Litz soils; on landscapes similar to or lower than those of the Litz soils

Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Ruptic-Ultic Dystrudepts

Typical Pedon

Litz channery loam in an area of Chiswell-Litz complex, 35 to 60 percent slopes; in Tazewell County, Virginia; in woodland, about 3.7 miles east of the town of Richlands, 0.1 mile south of Highway VA-631; Pounding Mill, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 6 minutes 12.00 seconds N. and long. 81 degrees 42 minutes 32.00 seconds W.

A—0 to 5 inches; brown (10YR 5/3) channery loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine vesicular and tubular pores; 15 percent angular shale channers; strongly acid; clear smooth boundary.
E—5 to 11 inches; yellowish brown (10YR 5/4) channery loam; weak fine granular structure; friable, slightly sticky, nonplastic; common fine, medium, and coarse roots; many very fine vesicular and tubular pores; 30 percent angular shale channers; strongly acid; clear wavy boundary.
Bw/Bt—11 to 26 inches; 70 percent dark yellowish brown (10YR 4/4) very channery loam (Bw part) and 30 percent strong brown (7.5YR 5/6) very channery clay loam (Bt part); weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common medium and coarse roots; common very fine vesicular and tubular pores; few faint clay films on faces of peds in Bt part; 45 percent angular shale channers; very strongly acid; abrupt wavy boundary.
R—26 inches; shale bedrock.

Range in Characteristics

Solum thickness: 10 to 30 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Shale fragments; 5 to 35 percent in the A, Ap, and E horizons and 35 to 75 percent in the Bw/Bt and C horizons
Reaction: Very strongly acid or strongly acid, except in limed areas

A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 6
Texture—loam in the fine-earth fraction

Ap horizon (if it occurs):
Hue—7.5YR or 10YR

Value—4 to 6
Chroma—2 to 6
Texture—loam, silt loam, or silty clay loam in the fine-earth fraction

E horizon:
Hue—7.5YR or 10YR
Value—4 to 8
Chroma—2 to 4
Texture—loam or silt loam in the fine-earth fraction

Bw/Bt horizon:
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—3 to 8
Texture in the fine-earth fraction—loam or silt loam in the Bw part; clay loam or silty clay loam in the Bt part

C horizon (if it occurs):
Hue—5YR to 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—loam, silt loam, clay loam, or silty clay loam in the fine-earth fraction

Madsheep Series

Physiographic province: Valley and Ridge
Landform: Mountains
Parent material: Residuum weathered from acid red shale interbedded with fine-grained sandstone, mudstone, and siltstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 7 to 65 percent

Associated Soils

- Areas of Paddyknob soils, which formed in material, dominantly sandstone, that is yellower than that in which the Madsheep soils formed and which have more sand and less silt than the Madsheep soils; on ridges on the higher landscapes

Taxonomic Classification

Loamy-skeletal, siliceous, active, frigid Typic Dystrudepts

Typical Pedon

Madsheep channery silt loam, 35 to 55 percent slopes, very stony; in Tazewell County, Virginia; in a wooded area, about 5 miles southeast of Tazewell, 1.4 miles south of Highway VA-604, on Clinch Mountain below the Beartown Wilderness area; Hutchinson Rock, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 4 minutes 49.00 seconds N. and long. 81 degrees 26 minutes 24.00 seconds W.

Oi—3 inches to 0; partly decomposed and undecomposed loose leaves.
A—0 to 5 inches; dark brown (7.5YR 3/2) channery silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine vesicular and tubular pores; 20 percent angular shale channers; strongly acid; abrupt wavy boundary.
Bw—5 to 22 inches; yellowish red (5YR 4/6) very channery silt loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; many medium and

coarse roots; many very fine and fine vesicular and tubular pores; 50 percent angular shale channers; very strongly acid; clear wavy boundary.

C—22 to 25 inches; reddish brown (5YR 4/4) extremely channery silt loam; weak fine granular structure; friable, slightly sticky, nonplastic; common very fine and fine tubular and vesicular pores; 65 percent angular shale channers; very strongly acid; abrupt wavy boundary.

R—25 inches; shale bedrock.

Range in Characteristics

Solum thickness: 20 to 30 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Shale, siltstone, fine-grained sandstone, or mudstone channers or flagstones; 15 to 25 percent in the A horizon, 25 to 55 percent in individual subhorizons of the Bw horizon, and 45 to 75 percent in the C horizon
Reaction: Very strongly acid or strongly acid throughout the profile

A horizon:
Hue—7.5YR or 5YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam or loam in the fine-earth fraction

Bw horizon:
Hue—5YR or 2.5YR
Value—3 to 5
Chroma—3 to 6
Texture—silt loam or loam in the fine-earth fraction

C horizon:
Hue—5YR or 2.5YR
Value—3 to 5
Chroma—3 or 4
Texture—loam or silt loam in the fine-earth fraction

Melvin Series

Physiographic province: Valley and Ridge
Landform: Flood plains
Parent material: Alluvium derived from limestone, shale, siltstone, and sandstone
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Areas of moderately well drained Lindside soils, which are subject to occasional flooding; on landscapes similar to and slightly higher than those of the Melvin soils
- Areas of somewhat poorly drained Newark soils, which are subject to occasional flooding; on landscapes similar to and in areas slightly higher than those of the Melvin soils
- Areas of Purdy soils, which have more clay than the Melvin soils; on terraces above flood plains

Taxonomic Classification

Fine-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Melvin silt loam, 0 to 2 percent slopes, frequently flooded; in Tazewell County, Virginia; in pasture, in an area near Burkes Garden about 11 miles east-southeast of Tazewell, about 3.5 miles south-southeast of Highway VA-61, and 1.25 miles southeast of the intersection of Highways VA-623 and VA-666; Garden Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 6 minutes 20.00 seconds N. and long. 81 degrees 19 minutes 59.00 seconds W.

Ap1—0 to 3 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine roots; common very fine tubular and vesicular pores; slightly acid; clear smooth boundary.

Ap2—3 to 10 inches; light brownish gray (10YR 6/2) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine roots; common very fine tubular and vesicular pores; common fine distinct brown (7.5YR 4/4) iron-manganese masses; slightly acid; clear smooth boundary.

Bg—10 to 30 inches; dark gray (10YR 4/1) and dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine roots; common very fine vesicular and tubular pores; common fine prominent brown (7.5YR 4/4) iron-manganese masses; 2 percent well rounded sandstone gravel; moderately acid; gradual wavy boundary.

Cg1—30 to 50 inches; dark gray (10YR 4/1) silt loam; massive; friable, slightly sticky, slightly plastic; many fine vesicular and tubular pores; 5 percent well rounded sandstone gravel; moderately acid; clear wavy boundary.

Cg2—50 to 62 inches; dark gray (10YR 4/1) gravelly sandy loam; massive; very friable, nonsticky, nonplastic; many fine tubular and vesicular pores; 20 percent well rounded sandstone gravel; slightly acid.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: More than 60 inches
Rock fragment content: Ranging from 0 to 5 percent within a depth of 30 inches; individual subhorizons can range from 0 to 20 percent, by volume, below a depth of 30 inches
Reaction: Moderately acid to slightly alkaline throughout the profile

Ap horizon:
Hue—10YR to 5Y
Value—4 to 7
Chroma—1 to 4
Texture—silt loam

Bg horizon:
Hue—10YR to 5Y or neutral
Value—4 to 7
Chroma—2 or less
Texture—silt loam or silty clay loam

Cg horizon:
Hue—10YR to 5Y or neutral
Value—4 to 7
Chroma—2 or less
Texture—loam, silt loam, or silty clay loam in the fine-earth fraction; stratified

layers of sandy loam, loamy sand, sand, silty clay, clay, and gravel occur in some pedons below a depth of 40 inches

Murrill Series

Physiographic province: Valley and Ridge
Landform: Base of slopes of ridges and spurs
Parent material: Colluvium derived from acid sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 35 percent

Associated Soils

- Areas of moderately deep Bland soils, which formed in residuum derived from limestone; on spur ridges on landscapes higher than those of the Murrill soils
- Areas of moderately deep Carbo soils, which formed in residuum derived from limestone and have more clay than the Murrill soils; on hills and spur ridges on landscapes lower than those of the Murrill soils
- Areas of Frederick soils, which formed in residuum derived from limestone and have more clay at shallow depths than the Murrill soils; on hills on landscapes similar to or lower than those of the Murrill soils
- Areas of Oriskany soils, which have more rock fragments than the Murrill soils and do not have a lithologic discontinuity within a depth of 60 inches; on landscapes similar to or higher than those of the Murrill soils

Taxonomic Classification

Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Murrill silt loam, 7 to 15 percent slopes; in Tazewell County, Virginia; in cropland, about 2.2 miles southwest of Tazewell, 0.1 mile east of Highway VA-16, about 3.8 miles south-southeast of the intersection of Highways VA-16 and US-19 and 460; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 3 minutes 10.00 seconds N. and long. 81 degrees 31 minutes 6.00 seconds W.

Ap—0 to 10 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; common very fine roots; many very fine tubular and vesicular pores; 3 percent subrounded sandstone gravel; strongly acid; abrupt smooth boundary.

Bt1—10 to 22 inches; strong brown (7.5YR 5/6) silt loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; many very fine vesicular and tubular pores; common faint patchy clay films on all faces of peds; 2 percent subrounded sandstone gravel; strongly acid; gradual wavy boundary.

Bt2—22 to 44 inches; strong brown (7.5YR 5/6) clay loam; moderate medium subangular blocky structure; firm, moderately sticky, slightly plastic; many very fine tubular and vesicular pores; common faint discontinuous clay films on all faces of peds; very strongly acid; clear wavy boundary.

2Bt3—44 to 56 inches; yellowish red (5YR 5/6) and strong brown (7.5YR 5/6) gravelly clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; many very fine vesicular and tubular pores; common faint discontinuous clay films on all faces of peds; 25 percent subrounded sandstone gravel; very strongly acid; clear wavy boundary.

2Bt4—56 to 61 inches; strong brown (7.5YR 4/6) gravelly clay; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; common very fine tubular and vesicular pores; common faint discontinuous clay films on all faces of peds; 20 percent subrounded sandstone gravel; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Rock fragments (type and content): Mostly sandstone pebbles but including as much as to 30 percent shale channers in the A, E, and Bt horizons and as much as 40 percent shale channers in the 2B horizon
Reaction: Moderately acid to very strongly acid

Ap horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—silt loam

E horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—3 to 6
Texture—silt loam, loam, or sandy loam

Bt horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 6
Texture—silt loam, loam, silty clay loam, clay loam, or sandy clay loam in the fine-earth fraction

2Bt horizon:
Hue—2.5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Mottling—mixed colors, including red and gray
Texture—silty clay loam, silty clay, clay, clay loam, or loam in the fine-earth fraction

The Murrill soils in this survey area are considered taxadjuncts to the series because they have a higher clay content in the 2B horizon than is typical. This difference, however, does not affect the use and management of the soils.

Newark Series

Physiographic province: Valley and Ridge
Landform: Flood plains
Parent material: Alluvium derived from limestone
Drainage class: Somewhat poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 3 percent

Associated Soils

- Areas of moderately well drained Coursey soils, which have more sand and less silt than the Newark soils; on low terraces above flood plains

- Areas of moderately well drained Guernsey soils, which have more clay than the Newark soils; on low terraces above flood plains
- Areas of moderately well drained Lindside soils; on landscapes similar to those of the Newark soils
- Areas of poorly drained Melvin soils, which are subject to frequent flooding; on landscapes similar to those of the Newark soils and in slight depressions on landscapes lower than those of the Newark soils
- Areas of poorly drained Purdy soils, which have more clay than Newark soils; on low terraces above flood plains

Taxonomic Classification

Fine-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Newark silt loam in an area of Newark-Lindside complex, 0 to 3 percent slopes, occasionally flooded; in Tazewell County, Virginia; in pasture, in an area near Burkes Garden, about 7.7 miles east of Bluefield, Virginia, about 250 feet west of Highway VA-623, about 50 feet north of Crooked Run Creek; Garden Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 6 minutes 27.00 seconds N. and long. 81 degrees 21 minutes 3.00 seconds W.

Ap—0 to 5 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine vesicular and many very fine and fine tubular pores; slightly acid; clear smooth boundary.

Bw—5 to 19 inches; grayish brown (10YR 5/2) and brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; common very fine and fine roots; many very fine and fine vesicular and tubular pores; common fine prominent strong brown (7.5YR 4/6) iron-manganese masses; moderately acid; clear wavy boundary.

Bg—19 to 30 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium subangular blocky structure; firm, moderately sticky, slightly plastic; few very fine and fine roots; common very fine and fine tubular and vesicular pores; common fine prominent brown (7.5YR 4/4) iron-manganese masses; slightly acid; gradual wavy boundary.

Cg1—30 to 45 inches; gray (10YR 5/1) silty clay loam; massive; firm, moderately sticky, moderately plastic; common very fine and fine tubular and vesicular pores; common fine prominent dark yellowish brown (10YR 4/6) and common fine distinct yellowish brown (10YR 5/4) iron-manganese masses; slightly acid; gradual wavy boundary.

Cg2—45 to 61 inches; dark gray (10YR 4/1) silty clay loam; massive; firm, moderately sticky, slightly plastic; common very fine tubular and vesicular pores; common fine prominent yellowish brown (10YR 5/6) masses of oxidized iron and common fine prominent strong brown (7.5YR 4/6) iron-manganese masses; slightly acid.

Range in Characteristics

Solum thickness: 20 to 50 inches
Depth to bedrock: More than 60 inches
Rock fragment content: 0 to 5 percent within a depth of 30 inches, 0 to 15 percent below a depth of 30 inches, and 0 to 60 percent below a depth of 40 inches
Reaction: Moderately acid to slightly alkaline throughout the profile

Ap horizon:
Hue—7.5YR to 2.5Y
Value—3 to 5; value of 3 only occurs where horizon is less than 6 inches thick

Chroma—2 to 4
Texture—silt loam

Bw horizon:
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or silty clay loam

Bg horizon:
Hue—2.5Y to 7.5YR
Value—4 to 7
Chroma—0 to 2
Texture—silt loam or silty clay loam

BC horizon (if it occurs):
Hue—2.5Y to 7.5YR
Value—4 to 7
Chroma—0 to 2
Texture—silt loam, silty clay loam, or clay loam

Cg horizon:
Hue—2.5Y to 7.5YR or neutral
Value—4 to 7
Chroma—0 to 2
Texture—silt loam, silty clay loam, or clay loam

Newbern Series

Physiographic province: Valley and Ridge
Landform: Escarpments and hills, generally along streams
Parent material: Residuum weathered from limestone; in some places limestone interbedded with shale or siltstone
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Shallow
Slope range: 25 to 70 percent

Associated Soils

- Areas of moderately deep Carbo soils, which have more clay than the Newbern soils; on landscapes higher than those of the Newbern soils
- Areas of very deep Frederick soils, which have more clay and fewer rock outcrops than the Newbern soils; on landscapes higher than those of the Newbern soils

Taxonomic Classification

Loamy, mixed, active, mesic Lithic Eutrudepts

Typical Pedon

Newbern silt loam in an area of Newbern-Rock outcrop complex, 25 to 70 percent slopes; in Tazewell County, Virginia; in woodland, about 5.7 miles southeast of Richlands, about 1.4 miles west-northwest of the intersection of Highways VA-91 and VA-609, about 75 feet southwest of the Little River, 2.5 miles south-southeast of Highways US-19 and 460; Pounding Mill, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 2 minutes 9.00 seconds N. and long. 81 degrees 42 minutes 21.00 seconds W.

A—0 to 5 inches; dark yellowish brown (10YR 3/4) silt loam; weak fine granular structure; friable; many very fine roots; many very fine pores; 2 percent subangular limestone channers and 8 percent angular chert gravel; neutral; clear smooth boundary.
Bw—5 to 14 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; common very fine roots; many very fine pores; 2 percent subangular limestone channers and 8 percent angular chert gravel; neutral; abrupt wavy boundary.
R—14 inches; limestone bedrock.

Range in Characteristics

Solum thickness: 10 to 18 inches
Depth to bedrock: 10 to 20 inches
Rock fragments (type and content): Shale, siltstone, limestone, or chert fragments; 15 to 40 percent in the A or Ap horizon, 5 to 65 percent in the Bw horizon, and 5 to 80 percent in the C horizon; on average, less than 35 percent in the control section
Reaction: Moderately acid to neutral in the A horizon, slightly acid to neutral in the Bw horizon, and neutral to moderately alkaline in the C horizon

A or Ap horizon:
Hue—10YR
Value—3 or 4
Chroma—3 to 6
Texture—silt loam

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—silt loam or loam in the fine-earth fraction

C horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—6 to 8
Texture—silt loam or loam in the fine-earth fraction

Oriskany Series

Physiographic province: Valley and Ridge
Landform: Base of slopes, colluvial portion of spurs and ridges, and drainageways
Parent material: Colluvium derived from acid sandstone, siltstone, and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Very deep
Slope range: 7 to 55 percent

Associated Soils

- Areas of moderately deep Berks soils, which formed in residuum derived from shale and have shale fragments; on ridges and spur ridges on landscapes similar to or higher than those of the Oriskany soils
- Areas of moderately deep Bland soils, which formed in residuum derived from

limestone and have more clay and fewer rock fragments than the Oriskany soils; on ridges and spur ridges on landscapes lower than those of the Oriskany soils, above drainageways

- Areas of moderately deep Calvin soils, which formed in residuum derived from shale and have shale fragments; on ridges on landscapes similar to or higher than those of the Oriskany soils
- Areas of moderately deep Carbo soils, which formed in residuum derived from limestone and have more clay and fewer rock fragments than the Oriskany soils; on spur ridges on landscapes lower than those of the Oriskany soils, above drainageways
- Areas of Frederick soils, which formed in residuum derived from limestone and have more clay and fewer rock fragments than the Oriskany soils; on hills on landscapes lower than those of the Oriskany soils
- Areas of moderately deep Lily soils, which formed in residuum derived from sandstone and have fewer rock fragments than the Oriskany soils; on summits and shoulders on ridges and spur ridges on landscapes higher than those of the Oriskany soils
- Areas of Murrill soils, which have fewer rock fragments than the Oriskany soils and have a lithologic discontinuity within a depth of 60 inches; on footslopes and toeslopes on landscapes similar to or lower than those of the Oriskany soils
- Areas of Poplimento soils, which formed in residuum derived from shale and have more clay and fewer rock fragments than the Oriskany soils; on landscapes similar to those of Oriskany soils and on spur ridges on landscapes higher than those of the Oriskany soils
- Areas of moderately deep Wallen soils, which formed in residuum derived from sandstone; on ridges on landscapes higher than those of the Oriskany soils
- Areas of shallow Weikert soils, which formed in residuum derived from shale and have shale fragments; on ridges and spur ridges on landscapes similar to or higher than those of the Oriskany soils
- Areas of deep Westmoreland soils, which formed in residuum derived from shale and have fewer rock fragments than the Oriskany soils; on spur ridges on landscapes similar to or higher than those of the Oriskany soils

Taxonomic Classification

Loamy-skeletal, siliceous, semiactive, mesic Typic Hapludults

Typical Pedon

Oriskany gravelly fine sandy loam, 35 to 55 percent slopes, extremely stony; in Tazewell County, Virginia; about 2.4 miles south of Bluefield, Virginia, about 0.3 mile east of Highway VA-662 and 0.5 mile northwest of Highway VA-61, about 1.5 miles west-southwest of the Bland-Tazewell County line, in woodland; Pounding Mill, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 11 minutes 4.00 seconds N. and long. 81 degrees 17 minutes 53.00 seconds W.

A—0 to 6 inches; dark brown (10YR 3/3) gravelly fine sandy loam; weak fine granular structure; friable, nonsticky, nonplastic; common very fine and fine roots; many fine tubular and many very fine vesicular pores; 25 percent subrounded sandstone gravel; very strongly acid; clear smooth boundary.

E—6 to 14 inches; yellowish brown (10YR 5/6) very cobbly fine sandy loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; common fine and medium roots; many fine tubular and many very fine vesicular pores; 45 percent subrounded sandstone cobbles; very strongly acid; gradual wavy boundary.

Bt—14 to 61 inches; strong brown (7.5YR 5/6) extremely stony sandy clay loam;

moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine and coarse roots; many fine tubular and many very fine vesicular pores; common faint clay films on all faces of peds; 60 percent subrounded sandstone stones; very strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 60 inches
Rock fragments (type and content): Sandstone and quartzite fragments; 15 to 65 percent in the A and E horizons and 35 to 75 percent in the Bt and C horizons
Reaction: Very strongly acid or strongly acid throughout the profile, except in limed areas

A horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 or 3
Texture—fine sandy loam in the fine-earth fraction

E horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

Bt horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

C horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—sandy loam, loam, or sandy clay loam in the fine-earth fraction

Paddyknob Series

Physiographic province: Valley and Ridge
Landform: Mountains
Parent material: Residuum weathered from acid sandstone interbedded with shale and siltstone
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 15 to 80 percent

Associated Soils

- Areas of Madsheep soils, which formed in red residuum derived dominantly from shale and have more silt and less sand than the Paddyknob soils; on landscapes lower than those of the Paddyknob soils

Taxonomic Classification

Loamy-skeletal, siliceous, superactive, frigid Typic Dystrudepts

Typical Pedon

Paddyknob gravelly loam, 15 to 35 percent slopes, very stony; in Tazewell County, Virginia; in woodland, about 6.75 miles southwest of Tazewell, 1.5 miles south of HIghway VA-91, about 0.75 mile northeast of a lookout tower atop Morris Knob; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 3 minutes 24.00 seconds N. and long. 81 degrees 36 minutes 27.00 seconds W.

Oi—2 inches to 0; partly decomposed and undecomposed loose leaves.

A—0 to 4 inches; gravelly loam; weak fine granular structure; friable, nonsticky, nonplastic; common fine and medium roots; many very fine vesicular and tubular pores; 20 percent angular sandstone gravel; very strongly acid; abrupt wavy boundary.

Bw1—4 to 10 inches; strong brown (7.5YR 4/6) gravelly loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; common fine and few medium roots; many very fine and fine tubular and vesicular pores; 25 percent angular sandstone gravel; very strongly acid; clear wavy boundary.

Bw2—10 to 21 inches; strong brown (7.5YR 4/6) very gravelly sandy loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; few medium roots; many very fine and fine tubular and vesicular pores; 10 percent angular sandstone cobbles and 40 percent angular sandstone gravel; very strongly acid; clear irregular boundary.

C—21 to 26 inches; strong brown (7.5YR 5/6) very gravelly loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine tubular and vesicular pores; 20 percent angular sandstone cobbles and 35 percent angular sandstone gravel; very strongly acid; abrupt irregular boundary.

R—26 inches; sandstone bedrock.

Range in Characteristics

Solum thickness: 20 to 30 inches

Depth to bedrock: 20 to 40 inches

Rock fragments (type and content): Mostly gravel and channers and some cobbles and flagstones (mainly sandstone, but some siltstone or shale fragments); 15 to 35 percent in the A horizon, 20 to 60 percent in individual subhorizons of the Bw horizon, and 40 to 75 percent in the C horizon

Reaction: Extremely acid or very strongly acid

A horizon:

Hue—10YR

Value—2 or 3

Chroma—1 to 4

Texture—loam in the fine-earth fraction

Bw horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—4 to 6

Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

C horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture—loamy sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

Philo Series

Physiographic province: Valley and Ridge
Landform: Flood plains
Parent material: Alluvium derived from sandstone and shale
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Deep and very deep
Slope range: 0 to 3 percent

Associated Soils

- Areas of Craigsville soils, which are very deep, are well drained, and have more rock fragments than the Philo soils

Taxonomic Classification

Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts

Typical Pedon

Philo fine sandy loam, 0 to 3 percent slopes, frequently flooded; in Tazewell County, Virginia; about 1.5 miles west-northwest of Richlands, Virginia, about 0.5 mile north of where Mudlick Creek passes under Highway US-460 in Doran, Virginia, on a coal haul road in an abandoned pasture; Richlands, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 5 minutes 56.30 seconds N. and long. 81 degrees 50 minutes 9.60 seconds W.

A—0 to 5 inches; very dark grayish brown (10YR 3/2) fine sandy loam; moderate medium granular structure; friable, nonsticky, nonplastic; many fine and medium roots; common fine vesicular and tubular pores; strongly acid; clear smooth boundary.

Bw1—5 to 20 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; common fine and medium roots; common fine vesicular and tubular pores; strongly acid; gradual wavy boundary.

Bw2—20 to 44 inches; olive brown (2.5Y 4/4) fine sandy loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; few fine roots; common fine tubular and vesicular pores; common medium distinct irregular light brownish gray (10YR 6/2) iron depletions throughout and common medium prominent irregular strong brown (7.5YR 5/6) masses of oxidized iron throughout; 10 percent rounded sandstone cobbles; strongly acid; clear smooth boundary.

C—44 to 60 inches; light olive brown (2.5Y 5/4) very cobbly sandy loam; single grain; very friable, nonsticky, nonplastic; common fine vesicular and tubular pores; few medium prominent irregular strong brown (7.5YR 5/6) masses of oxidized iron throughout and common medium distinct irregular light brownish gray (10YR 6/2) iron depletions throughout; 10 percent rounded sandstone gravel and 30 percent rounded sandstone cobbles; strongly acid.

Range in Characteristics

Solum thickness: 20 to 48 inches
Depth to bedrock: 40 inches to more than 60 inches
Rock fragments (content): 0 to 20 percent in the A and Bw horizons, 0 to 40 percent in the C horizon and in the 2C horizon (if it occurs), and less than 20 percent in the particle-size control section
Reaction: Very strongly acid to moderately acid throughout the profile, except in limed areas

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—fine sandy loam in the fine-earth fraction

Bw horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—3 to 6
Chroma—3 to 6
Texture—silt loam, loam, fine sandy loam, or sandy loam in the fine-earth fraction
Redoximorphic features—depletions ranging in color from dark grayish brown (10YR 4/2) to light gray (10YR 6/1); concentrations ranging in color from dark brown (7.5YR 4/4) to strong brown (7.5YR 5/8)

C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y or neutral
Value—4 to 6
Chroma—0 to 4
Texture—silt loam, loam, fine sandy loam, or sandy loam in the fine-earth fraction
Redoximorphic features—where chroma in the matrix is greater than 2, there are depletions with chroma of 2 or less and concentrations that are strong brown (7.5YR 5/6 or 5/8), yellowish red (5YR 4/6), or redder

Pisgah Series

Physiographic province: Valley and Ridge
Landform: Low hills in valleys; some areas have karst topography
Parent material: Residuum weathered from limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 15 percent

Associated Soils

- Areas of moderately deep Carbo soils that have more clay and more rock outcrops than the Pisgah soils; on similar landscapes

Taxonomic Classification

Fine, mixed, semiactive, mesic Ultic Hapludalfs

Typical Pedon

Pisgah silt loam, 2 to 7 percent slopes; in Tazewell County, Virginia; in a pasture, about 7.6 miles east of Tazewell, 3,000 feet northwest of the intersection of Highways VA-623 and VA-727, about 0.25 mile northwest of Burkes Garden Methodist Church on Highway VA-623; Garden Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 6 minutes 13.00 seconds N. and long. 81 degrees 20 minutes 58.00 seconds W.

A—0 to 2 inches; dark brown (10YR 3/3) silt loam; moderate fine granular structure; very friable; many fine roots; few black mineral concretions; common fine pores; moderately acid; clear smooth boundary.
E—2 to 8 inches; brown (10YR 4/3) silt loam; moderate fine granular structure; friable; common fine roots; few black mineral concretions; common fine pores; strongly acid; clear smooth boundary.

BE—8 to 13 inches; brown (10YR 4/3) clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; few black mineral concretions; common fine pores; 1 percent angular chert gravel; strongly acid; clear smooth boundary.

Bt1—13 to 37 inches; yellowish brown (10YR 5/8) clay; moderate medium subangular blocky structure; friable, moderately sticky, slightly plastic; common fine roots; few or common black mineral concretions; few fine and medium pores; common distinct clay films on all faces of peds; 1 percent angular chert gravel; strongly acid; gradual smooth boundary.

Bt2—37 to 50 inches; yellowish brown (10YR 5/6) clay; moderate fine and medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; few faint strong brown (7.5YR 5/6) soft masses of weathered chert gravel; few fine distinct yellowish red (5YR 5/6) soft masses of weathered chert gravel; 4 percent black mineral concretions; black mineral coating on many peds; few fine pores; common distinct clay films on all faces of peds; 4 percent angular chert gravel; strongly acid; gradual smooth boundary.

C—50 to 65 inches; yellowish brown (10YR 5/4), strong brown (7.5YR 5/6), and brown (10YR 5/3) clay; common coarse prominent brownish yellow (10YR 6/6) mottles; massive; friable, slightly sticky; 4 percent small black mineral concretions; 4 percent angular chert gravel; strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 48 inches
Rock fragments (type and content): Mostly chert gravel but including limestone fragments; 0 to 5 percent in the A and E horizons and 0 to 15 percent in the Bt and C horizons
Reaction: Strongly acid to slightly acid throughout the profile

A horizon:
Hue—7.5YR or 10YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam

Ap horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 or 4
Texture—silt loam, silty clay loam, or clay loam

E horizon:
Hue—7.5YR or 10YR
Value—3 to 6
Chroma—3 or 4
Texture—silt loam, silty clay loam, or clay loam

BE horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 8
Texture—silty clay loam or clay loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5

Chroma—3 to 8
Texture—silty clay or clay; the particle-size control section, on average, is less than 35 percent silt or more than 15 percent sand
Other characteristics—in the lower part of most pedons, horizon has lithochromic masses or streaks, hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8; in many pedons, horizon has dark oxide coatings or patchy yellowish red or red clay films

BC horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 8
Texture—silty clay or clay

C horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 8
Texture—silty clay loam, silty clay, or clay
Note—colors are either variegated or streaked

Pope Series

Physiographic province: Valley and Ridge
Landform: Flood plains
Parent material: Alluvium derived from acid sandstone and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Areas of moderately well drained Coursey soils, which have more clay and less sand than the Pope soils; on low terraces above flood plains
- Areas of Craigsville soils that are subject to frequent flooding and that have more rock fragments than the Pope soils; on flood plains in positions similar to or lower than those of the Pope soils
- Areas of moderately well drained Guernsey soils that have more clay than the Pope soils; on footslopes above flood plains

Taxonomic Classification

Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts

Typical Pedon

Pope fine sandy loam, 0 to 2 percent slopes, rarely flooded; in Tazewell County, Virginia; about 3.5 miles south of Bluefield, Virginia, 100 feet south of Highway VA-61, about 800 feet west of the Tazewell-Bland County line, in a crop field; Cove Creek, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 11 minutes 3.00 seconds N. and long. 81 degrees 16 minutes 19.00 seconds W.

Ap—0 to 8 inches; dark yellowish brown (10YR 3/4) fine sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; many very fine and fine roots; many fine tubular and many very fine vesicular pores; 5 percent rounded sandstone gravel; moderately acid; abrupt wavy boundary.

Bw1—8 to 15 inches; brown (7.5YR 4/4) gravelly sandy loam; weak fine subangular blocky structure; very friable, nonsticky, nonplastic; many very fine and fine roots; many fine tubular and many very fine vesicular pores; 15 percent rounded sandstone gravel; strongly acid; clear wavy boundary.

Bw2—15 to 27 inches; strong brown (7.5YR 4/6) sandy loam; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; few very fine roots; many fine tubular and many very fine vesicular pores; few organic stains on all faces of peds; 5 percent rounded sandstone gravel; strongly acid; clear wavy boundary.

Bw3—27 to 45 inches; strong brown (7.5YR 4/6) gravelly sandy loam; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; few very fine roots; many fine tubular and many very fine vesicular pores; 20 percent rounded sandstone gravel; very strongly acid; clear wavy boundary.

C—45 to 65 inches; strong brown (7.5YR 4/6) very gravelly loamy sand; single grain; loose, nonsticky, nonplastic; few very fine roots; many fine tubular and vesicular pores; 45 percent rounded sandstone gravel; very strongly acid.

Range in Characteristics

Solum thickness: 30 to 60 inches
Depth to bedrock: More than 60 inches
Rock fragment content: 0 to 30 percent to a depth of about 40 inches and 0 to 75 percent below a depth of 40 inches
Reaction: Strongly acid to extremely acid throughout the profile, except in limed areas

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—3 or 4
Texture—fine sandy loam in the fine-earth fraction

Bw horizon:
Hue—7.5YR to 10YR
Value—4 to 6
Chroma—4 to 6
Texture—sandy loam, fine sandy loam, very fine sandy loam, loam, or silt loam in the fine-earth fraction

C horizon:
Hue—7.5YR to 10YR
Value—4 to 6
Chroma—3 to 6
Texture—loamy sand, loamy fine sand, sandy loam, fine sandy loam, loam, or sandy clay loam in the fine-earth fraction

Poplimento Series

Physiographic province: Valley and Ridge
Landform: Hills and spurs
Parent material: Residuum weathered from shale interbedded with limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 7 to 60 percent

Associated Soils

- Areas of moderately deep Berks soils, which have more rock fragments than the Poplimento soils; on ridges and spur ridges on landscapes similar to or higher than those of the Poplimento soils
- Areas of moderately deep Bland soils, which are redder than the Poplimento soils and formed in residuum derived from limestone; on hills and spur ridges on landscapes lower than those of the Poplimento soils
- Areas of moderately deep Calvin soils, which formed in residuum derived from red, noncalcareous shale and sandstone and have less clay and more rock fragments than the Poplimento soils; on ridges higher than those of the Poplimento soils
- Areas of Oriskany soils, which formed in colluvium derived from sandstone and shale and have more rock fragments than the Poplimento soils; on landscapes similar to those of the Poplimento soils and in drainageways
- Areas of Westmoreland soils, which have a thinner solum and less clay than the Poplimento soils; on similar landscapes

Taxonomic Classification

Fine, mixed, subactive, mesic Ultic Hapludalfs

Typical Pedon

Poplimento silt loam in an area of Poplimento-Westmoreland complex, 7 to 15 percent slopes; in Tazewell County, Virginia; in a pasture, 0.25 mile east of Tazewell, 0.1 mile north of Highway VA-600 (Dial Rock Road), on a low knoll near Farm Lake; Tiptop, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 8 minutes 25.00 seconds N. and long. 81 degrees 28 minutes 53.00 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine tubular and vesicular pores; moderately acid; clear smooth boundary.

Bt1—6 to 11 inches; yellowish brown (10YR 5/6) silty clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular and vesicular pores; common faint patchy clay films on all faces of peds; strongly acid; clear wavy boundary.

Bt2—11 to 35 inches; yellowish brown (10YR 5/6) silty clay; moderate fine and medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine roots; common very fine and fine tubular and common vesicular pores; common faint discontinuous clay films on all faces of peds; strongly acid; clear wavy boundary.

Bt3—35 to 45 inches; yellowish brown (10YR 5/6) clay; moderate fine subangular blocky structure; firm, moderately sticky, moderately plastic; common very fine and fine tubular and vesicular pores; many faint discontinuous clay films on all faces of peds; very strongly acid; clear wavy boundary.

BC1—45 to 56 inches; yellowish brown (10YR 5/4) channery silty clay loam; moderate fine and medium subangular blocky structure; firm, moderately sticky, slightly plastic; many very fine and fine tubular and vesicular pores; 20 percent very angular shale channers; strongly acid; gradual wavy boundary.

BC2—56 to 62 inches; dark yellowish brown (10YR 4/6) silty clay loam; weak medium subangular blocky structure; firm, moderately sticky, slightly plastic; many very fine and fine vesicular and tubular pores; 5 percent very angular shale channers; strongly acid.

Range in Characteristics

Solum thickness: 40 to 60 inches or more
Depth to bedrock: More than 60 inches

Rock fragments (type and content): Channers, mostly shale but also limestone; 0 to 15 percent in the A, E, BE, and BA horizons and in the upper part of the Bt horizon and 0 to 55 percent in the lower part of the Bt horizon and in the BC and C horizons
Reaction: Very strongly acid to slightly acid throughout the profile

Ap or A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—silt loam

BA horizon (if it occurs):
Hue—5YR to 10YR
Value—3 to 6
Chroma—4 to 8
Texture—silt loam, silty clay loam, or silty clay

Bt horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silty clay loam, silty clay, or clay in the fine-earth fraction

BC horizon:
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silty clay loam, silty clay, or clay in the fine-earth fraction

C horizon (if it occurs):
Hue—5YR to 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silty clay loam, silty clay, or clay in the fine-earth fraction
Note—in some pedons, horizon is variegated or streaked

Purdy Series

Physiographic province: Valley and Ridge
Landform: Stream terraces
Parent material: Alluvium and colluvium derived from limestone, shale, siltstone, and sandstone
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Low
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Areas of moderately well drained Coursey soils, which have less clay than the Purdy soils; on terraces higher than those of the Purdy soils
- Areas of moderately well drained Guernsey soils; on landscapes similar to or higher than those of the Purdy soils
- Areas of moderately well drained Lindside soils, which have more silt and less clay than the Purdy soils; on flood plains

- Areas of Melvin soils, which have more silt and less clay than the Purdy soils; on flood plains
- Areas of somewhat poorly drained Newark soils, which have more silt and less clay than the Purdy soils; on flood plains

Taxonomic Classification

Fine, mixed, active, mesic Typic Endoaquults

Typical Pedon

Purdy silt loam, 0 to 2 percent slopes; in Tazewell County, Virginia; in a pasture, 9.5 miles east-southeast of Tazewell, about 0.5 mile southwest of the intersection of Highways VA-623 and VA-666, about 375 feet from Highway VA-666; Garden Mountain, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 6 minutes 30.00 seconds N. and long. 81 degrees 21 minutes 30.00 seconds W.

Ap—0 to 6 inches; grayish brown (10YR 5/2) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine vesicular and tubular pores; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron and common medium faint dark brown (10YR 3/3) iron-manganese masses; slightly acid; clear smooth boundary.

BA—6 to 14 inches; grayish brown (10YR 5/2) silt loam; weak medium subangular blocky structure; friable, slightly sticky, nonplastic; common very fine roots; many very fine vesicular and tubular pores; common medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; slightly acid; gradual wavy boundary.

Btg1—14 to 31 inches; grayish brown (10YR 5/2) silty clay; moderate medium subangular blocky structure; firm, moderately sticky, slightly plastic; few very fine roots; many very fine vesicular and tubular pores; few faint discontinuous clay films on all faces of peds; few fine prominent strong brown (7.5YR 5/8) masses of oxidized iron; slightly acid; gradual wavy boundary.

Btg2—31 to 42 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine roots; few very fine vesicular and tubular pores; common faint continuous clay films on all faces of peds; few fine prominent yellowish brown (10YR 5/6) masses of oxidized iron; slightly acid; clear wavy boundary.

Btg3—42 to 47 inches; gray (10YR 5/1) silty clay; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; common very fine tubular and vesicular pores; few faint discontinuous clay films on all faces of peds; few fine prominent brownish yellow (10YR 6/6) masses of oxidized iron and few fine prominent dark reddish brown (5YR 3/4) iron-manganese masses; 10 percent well rounded sandstone gravel; moderately acid; clear wavy boundary.

Cg—47 to 61 inches; gray (10YR 6/1) gravelly clay loam; massive; firm, slightly sticky, slightly plastic; many very fine vesicular and tubular pores; common medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; 30 percent well rounded sandstone gravel; moderately acid.

Range in Characteristics

Solum thickness: 28 to 50 inches
Depth to bedrock: More than 60 inches
Rock fragment content: 0 to 5 percent to a depth of 20 inches, 0 to 25 percent at a depth of 20 to 40 inches, and 15 to 50 percent below a depth of 40 inches
Reaction: Strongly acid to slightly acid throughout the profile

Ap horizon:
Hue—10YR, 2.5Y, or neutral
Value—3 to 5

Chroma—0 to 2
Texture—silt loam, silty clay loam, or loam

BA horizon:
Hue—10YR to 5Y or neutral
Value—4 or 5
Chroma—0 to 2
Texture—silt loam, clay loam, silty clay loam, silty clay, or clay

Bt horizon:
Hue—10YR to 5Y or neutral
Value—4 or 5
Chroma—0 to 2
Texture—generally silty clay or clay; including silty clay loam or clay loam or their gravelly analogs

C horizon:
Hue—10YR to 5Y or neutral
Value—4 to 6
Chroma—0 to 3
Texture—silty clay, clay, clay loam, or silty clay loam or their gravelly or very gravelly analogs

Timberville Series

Physiographic province: Valley and Ridge
Landform: Drainageways and base of slopes of hills
Parent material: Colluvium and alluvium derived from limestone, sandstone, and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 7 percent

Associated Soils

- Areas of moderately deep Carbo soils, which formed in residuum derived from limestone and have more clay than the Timberville soils; on landscapes higher than those of the Timberville soils
- Areas of Frederick soils, which formed in residuum derived from limestone and have more clay at shallow depths than the Timberville soils; on landscapes higher than those of the Timberville soils

Taxonomic Classification

Fine, mixed, active, mesic Typic Hapludults

Typical Pedon

Timberville silt loam, 2 to 7 percent slopes, frequently flooded; in Tazewell County, Virginia; in a pasture, 5.25 miles east of Tazewell, 0.1 mile north of Highway VA-61; Tiptop, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 8 minutes 31.00 seconds N. and long. 81 degrees 23 minutes 32.00 seconds W.

Ap—0 to 12 inches; dark yellowish brown (10YR 3/4) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine vesicular and tubular pores; 5 percent subrounded sandstone gravel; moderately acid; clear smooth boundary.
Bw—12 to 25 inches; brown (7.5YR 4/4) silty clay loam; weak fine subangular blocky

structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; many very fine and fine tubular and vesicular pores; common faint clay films on all faces of peds; 10 percent subrounded sandstone; strongly acid; clear wavy boundary.

2Bt1—25 to 35 inches; reddish brown (5YR 4/4) gravelly silty clay; weak medium subangular blocky structure; firm, moderately sticky, slightly plastic; few very fine roots; many very fine and fine vesicular pores; common faint discontinuous clay films on all faces of peds; 20 percent subrounded sandstone gravel; very strongly acid; gradual wavy boundary.

2Bt2—35 to 61 inches; dark reddish brown (5YR 3/4) silty clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common very fine and fine vesicular pores; common faint discontinuous clay films on all faces of peds; 5 percent subrounded sandstone gravel; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Rock fragments (type and content): Mostly sandstone and chert; 0 to 35 percent in the surface layer and 0 to 60 percent in individual horizons of the solum
Reaction: Extremely acid to slightly acid throughout the profile

Ap horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 5
Texture—silt loam in the fine-earth fraction

A horizon (if it occurs):
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 to 5
Texture—silt loam, loam, or fine sandy loam in the fine-earth fraction

E horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam, loam, or fine sandy loam in the fine-earth fraction

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—loam, silt loam, silty clay loam, or clay loam in the fine-earth fraction

2Bt horizon:
Hue—5YR to 10YR
Value—3 to 5
Chroma—4 to 8
Texture—clay, silty clay, clay loam, silty clay loam, or silt loam in the fine-earth fraction

Tumbling Series

Physiographic province: Valley and Ridge
Landform: Base of slopes of mountains

Parent material: Colluvium derived from sandstone, quartzite, and shale
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 15 percent

Associated Soils

- Areas of Berks soils, which are shallower to bedrock than the Tumbling soils; on landscapes higher than those of the Tumbling soils
- Areas of Chiswell soils, which are shallower to bedrock than the Tumbling soils; on landscapes higher than those of the Tumbling soils
- Areas of Groseclose soils, which formed in residuum; on landscapes higher than those of the Tumbling soils
- Areas of Litz soils, which are shallower to bedrock than the Tumbling soils; on landscapes higher than those of the Tumbling soils
- Areas of Weikert soils, which are shallower to bedrock than the Tumbling soils; on landscapes higher than those of the Tumbling soils

Taxonomic Classification

Fine, kaolinitic, mesic Typic Paleudults

Typical Pedon

Tumbling loam, 2 to 7 percent slopes, very stony; in Smyth County, Virginia; in cropland, about 1.2 miles northwest of the junction of Highways VA-614 and VA-749, about 1.1 miles west of the junction of Highways VA-749 and VA-670 northwest of Cedar Springs; Cedar Springs, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 50 minutes 26.00 seconds N. and long. 81 degrees 18 minutes 18.90 seconds W.

Ap—0 to 9 inches; dark yellowish brown (10YR 4/4) loam; weak fine granular structure; friable, slightly sticky, slightly plastic; many fine roots; many very fine vesicular and tubular pores; strongly acid; abrupt smooth boundary.

Bt1—9 to 16 inches; yellowish brown (10YR 5/6) clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; common fine roots; many very fine tubular and vesicular pores; common distinct clay films on all faces of peds; strongly acid; clear smooth boundary.

Bt2—16 to 34 inches; strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine roots; many very fine tubular and vesicular pores; common distinct clay films on all faces of peds; strongly acid; clear smooth boundary.

Bt3—34 to 44 inches; strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; few fine roots; many very fine tubular and vesicular pores; common distinct clay films on all faces of peds; very strongly acid; clear smooth boundary.

Bt4—44 to 62 inches; yellowish red (5YR 5/6) clay loam; common fine faint yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; common very fine tubular and vesicular pores; common distinct clay films on all faces of peds; very strongly acid.

Range in Characteristics

Solum thickness: More than 60 inches
Depth to bedrock: More than 60 inches
Rock fragments (content): 0 to 15 percent in the Ap horizon and 0 to 35 percent in the Bt horizon
Reaction: Very strongly acid or strongly acid

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—loam

Bt horizon:
Hue—2.5YR to 10YR
Value—4 or 5
Chroma—4 to 8
Texture—sandy clay loam, clay loam, silty clay loam, or clay in the fine-earth fraction

Udorthents

Physiographic province: Valley and Ridge
Landform: Cut and fill areas on hills, on mountains, and in valleys
Parent material: Fill material
Drainage class: Variable
Slowest saturated hydraulic conductivity: Unspecified
Depth class: Variable
Slope range: Variable

Typical Pedon

Udorthents formed when soils were disturbed by land-leveling, excavation, or filling. They consist of loamy and clayey soil material and varying amounts of rock fragments. Depth to hard bedrock varies from a few inches to more than 5 feet. Areas range from slightly compacted to severely compacted. Unvegetated areas are susceptible to severe erosion. Drainage is variable. Because of the variability of the soil material, a typical pedon is not given.

Wallen Series

Physiographic province: Valley and Ridge
Landform: Ridges
Parent material: Residuum weathered from acid sandstone interbedded with shale and siltstone
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 15 to 80 percent

Associated Soils

- Areas of Berks soils, which formed in residuum derived from shale and have more silt and less sand than the Wallen soils; on ridges and spur ridges on landscapes lower than those of the Wallen soils
- Areas of Calvin soils, which are redder than the Wallen soils, have more silt and less sand, and formed in shale and residuum derived from sandstone; on landscapes lower than those of the Wallen soils
- Areas of Lily soils, which have fewer rock fragments than the Wallen soils; on landscapes similar to or lower than those of the Wallen soils
- Areas of very deep Oriskany soils, which formed in colluvium derived from sandstone and shale; on landscapes lower than those of the Wallen soils
- Areas of shallow Weikert soils, which formed in residuum derived from shale and

have more silt and less sand than the Wallen soils; on ridges and spur ridges on landscapes lower than those of the Wallen soils

Taxonomic Classification

Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts

Typical Pedon

Wallen channery sandy loam in an area of Wallen-Rock outcrop complex, 15 to 35 percent slopes, extremely stony; in Tazewell County, Virginia; in woodland, about 10.5 miles southwest of Tazewell, 2.7 miles northwest of the county line, 125 feet north of Highway VA-91 on Clinch Mountain; Broadford, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 59 minutes 9.00 seconds N. and long. 81 degrees 39 minutes 3.00 seconds W.

Oi—1 inch to 0; partly decomposed and undecomposed loose leaves.
A—0 to 4 inches; very dark brown (10YR 2/2) channery sandy loam; weak fine granular structure; friable; many very fine roots; many very fine pores; 20 percent angular sandstone channers; strongly acid; abrupt wavy boundary.
Bw1—4 to 12 inches; yellowish brown (10YR 5/6) very channery sandy loam; weak fine subangular blocky structure; very friable; many medium roots; many very fine pores; 40 percent angular sandstone channers; very strongly acid; clear wavy boundary.
Bw2—12 to 22 inches; yellowish brown (10YR 5/6) very channery sandy loam; weak fine subangular blocky structure; very friable; common medium and common very fine roots; many very fine pores; 15 percent angular sandstone flagstones and 40 percent angular sandstone channers; very strongly acid; gradual wavy boundary.
C—22 to 24 inches; yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) extremely channery sandy loam; single grain; loose; few fine roots; many very fine pores; 20 percent angular sandstone flagstones and 45 percent angular sandstone channers; very strongly acid; clear wavy boundary.
R—24 inches; sandstone bedrock.

Range in Characteristics

Solum thickness: 20 to 40 inches
Depth to bedrock: 20 to 40 inches
Rock fragments (type and content): Fragments, mostly sandstone but including siltstone and shale; 15 to 35 percent in the A horizon, 35 to 60 percent in the Bw horizon, and 40 to 70 percent in the C horizon
Reaction: Very strongly acid to moderately acid

A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—sandy loam in the fine-earth fraction

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

C horizon:
Hue—7.5YR or 10YR
Value—5 or 6

Chroma—4 to 6
Texture—sandy loam or loamy sand in the fine-earth fraction

Weikert Series

Physiographic province: Valley and Ridge
Landform: Ridges and spurs
Parent material: Residuum weathered from acid shale interbedded with fine-grained sandstone and siltstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: High
Depth class: Shallow
Slope range: 7 to 55 percent

Associated Soils

- Areas of moderately deep Berks soils; on landscapes similar to those of the Weikert soils
- Areas of moderately deep Brushy soils, which formed in residuum derived from cherty limestone and have chert fragments; on hills and spur ridges on landscapes similar to or lower than those of the Weikert soils
- Areas of Lily soils, which formed in residuum derived from sandstone and have fewer rock fragments than the Weikert soils; on landscapes higher than those of Weikert soils
- Areas of very deep Oriskany soils, which formed in colluvium derived from sandstone and shale; on landscapes similar to or lower than those of the Weikert soils and in drainageways
- Areas of Wallen soils, which formed in residuum derived from sandstone and have more sand and less silt than the Weikert soils; on ridges on landscapes higher than those of the Weikert soils

Taxonomic Classification

Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts

Typical Pedon

Weikert channery silt loam in an area of Berks-Weikert complex, 35 to 55 percent slopes; in Tazewell County, Virginia; in woodland; about 6.25 miles south of Tazewell, 0.45 mile east-southeast of the intersection of Highways VA-16 and VA-601, about 0.3 mile south of Laurel Creek, 0.8 mile north of the county line on Little Brushy Mountain; Tazewell South, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 0 minutes 44.00 seconds N. and long. 81 degrees 31 minutes 18.00 seconds W.

Oi—3 inches to 0; partly decomposed and undecomposed leaves and twigs.
A—0 to 7 inches; yellowish brown (10YR 5/4) channery silt loam; weak fine granular structure; friable; common fine and many coarse roots; many very fine pores; 25 percent angular shale channers; very strongly acid; clear smooth boundary.
Bw1—7 to 12 inches; yellowish brown (10YR 5/6) very channery silt loam; weak fine subangular blocky structure; friable; common fine and common coarse roots; many very fine pores; 50 percent angular shale channers; very strongly acid; clear wavy boundary.
Bw2—12 to 17 inches; yellowish brown (10YR 5/6) extremely channery silt loam; weak fine subangular blocky structure; friable; few fine and medium roots; many very fine pores; 60 percent angular shale channers; very strongly acid; clear wavy boundary.
C—17 to 19 inches; yellowish brown (10YR 5/6) extremely channery silt loam; weak

fine granular structure; friable; common very fine pores; 80 percent angular shale; very strongly acid.

R—19 inches; fractured shale bedrock.

Range in Characteristics

Solum thickness: 12 to 20 inches
Depth to bedrock: 14 to 20 inches
Rock fragments (type and content): Shale, siltstone, or fine-grained sandstone fragments; 15 to 40 percent in the A or Ap horizon, 35 to 60 percent in the Bw horizon, and 60 to 85 percent in the C horizon
Reaction: Very strongly acid or strongly acid in A or Ap horizon; extremely acid to strongly acid in Bw and C horizons

A or Ap horizon:
Hue—10YR
Value—3 to 5
Chroma—3 or 4
Texture—silt loam in the fine-earth fraction

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam or loam in the fine-earth fraction

C horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture—silt loam or loam in the fine-earth fraction

Westmoreland Series

Physiographic province: Valley and Ridge
Landform: Ridges and spurs
Parent material: Residuum weathered from shale interbedded with limestone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Deep and very deep
Slope range: 7 to 65 percent

Associated Soils

- Areas of moderately deep Berks soils, which have more rock fragments than the Westmoreland soils; on landscapes similar to those of the Westmoreland soils and on higher ridges
- Areas of moderately deep Bland soils, which are redder than the Westmoreland soils and formed in residuum derived from limestone; on landscapes lower than those of the Westmoreland soils
- Areas of moderately deep Calvin soils, which formed in residuum derived from red noncalcareous shale and sandstone and have more rock fragments than the Westmoreland soils; on ridges higher than those of the Westmoreland soils
- Areas of very deep Oriskany soils, which formed in colluvium derived from sandstone and shale and have more rock fragments than the Westmoreland soils; on landscapes similar to those of the Westmoreland soils and in drainageways

- Areas of Poplimento soils, which have a thicker solum and more clay than the Westmoreland soils; on similar landscapes

Taxonomic Classification

Fine-loamy, mixed, active, mesic Ultic Hapludalfs

Typical Pedon

Westmoreland silt loam in an area of Westmoreland-Poplimento-Berks complex, 35 to 65 percent slopes; in Tazewell County, Virginia; in a pasture, 3,400 feet southeast of Highways US-19 and US-460, about 6,000 feet east of the intersection of Highway US-19 and Highways US-460 and VA-651, about 2.15 miles northeast of Tazewell; Tiptop, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 37 degrees 9 minutes 20.00 seconds N. and long. 81 degrees 27 minutes 15.00 seconds W.

Ap—0 to 7 inches; dark brown (10YR 3/3) silt loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine and fine roots; many very fine and fine vesicular and tubular pores; 5 percent angular shale channers; moderately acid; abrupt smooth boundary.

BA—7 to 12 inches; strong brown (7.5YR 5/6) silty clay loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; common very fine and fine roots; many very fine and fine tubular and vesicular pores; 5 percent angular shale channers; strongly acid; gradual wavy boundary.

Bt—12 to 31 inches; strong brown (7.5YR 4/6) silty clay loam; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine roots; common very fine and fine tubular and vesicular pores; common faint discontinuous clay films on all faces of peds; 5 percent angular shale channers; strongly acid; gradual wavy boundary.

BC—31 to 47 inches; brown (7.5YR 4/4) channery silt loam; weak fine subangular blocky structure; friable, slightly sticky, nonplastic; many very fine and fine tubular and vesicular pores; 30 percent angular shale channers; strongly acid; clear wavy boundary.

C—47 to 61 inches; strong brown (7.5YR 4/6) very channery silt loam; massive; friable, slightly sticky, nonplastic; many very fine and fine vesicular pores; 55 percent angular shale channers; moderately acid.

Range in Characteristics

Solum thickness: 20 to 50 inches
Depth to bedrock: 40 to 60 inches or more
Rock fragments (type and content): Channers, mostly shale but including limestone; 2 to 30 percent in the A, BA, and Bt horizons, 5 to 70 percent in the BC horizon, 15 to 80 percent in the CB horizon, and 45 to 90 percent in the C horizon
Reaction: Very strongly acid to moderately acid in the solum and strongly acid or moderately acid in the C horizon

Ap horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam

A horizon (if it occurs):
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam, loam, or silty clay loam

BA horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam, silty clay loam, or loam in the fine-earth fraction

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam in the fine-earth fraction

BC horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam in the fine-earth fraction

CB horizon (if it occurs):
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam in the fine-earth fraction

C horizon:
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam in the fine-earth fraction

Wolfgap Series

Physiographic province: Valley and Ridge
Landform: Flood plains
Parent material: Alluvium derived from limestone, shale, siltstone, and sandstone
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Areas of moderately well drained Botetourt soils; on low terraces above flood plains
- Areas of moderately well drained Guernsey soils, which have more clay than the Wolfgap soils; on low terraces above flood plains

Taxonomic Classification

Fine-loamy, siliceous, active, mesic Fluventic Hapludolls

Typical Pedon

Wolfgap clay loam, 0 to 2 percent slopes, occasionally flooded; in Smyth County, Virginia; in cropland, about 0.3 mile west of the junction of Highways VA-42 and VA-630 and 2.3 miles east of the junction of Highways VA-42 and VA-91; Broadford, Virginia USGS 7.5 Minute Quadrangle, NAD27; lat. 36 degrees 55 minutes 50.40 seconds N. and long. 81 degrees 37 minutes 44.80 seconds W.

Ap—0 to 11 inches; dark brown (10YR 3/3) clay loam, yellowish brown (10YR 5/4) dry; moderate fine granular structure; friable, slightly sticky, slightly plastic; many fine and medium roots; many very fine tubular and vesicular pores; neutral; abrupt smooth boundary.

Bw1—11 to 35 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; many very fine vesicular and tubular pores; neutral; diffuse smooth boundary.

Bw2—35 to 58 inches; strong brown (7.5YR 4/6) sandy clay loam; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; few fine roots; many very fine vesicular and tubular pores; neutral; gradual smooth boundary.

C—58 to 72 inches; strong brown (7.5YR 4/6) extremely gravelly fine sandy loam; massive; friable, slightly sticky, slightly plastic; many fine vesicular and tubular pores; 65 percent well rounded sandstone gravel; neutral.

Range in Characteristics

Solum thickness: 30 to 60 inches
Depth to bedrock: More than 60 inches
Rock fragments (type and content): Gravel and cobbles; 0 to 15 percent in the A and Ap horizons, 0 to 35 percent in the Bw horizon, and 15 to 80 percent in the C horizon
Reaction: Slightly acid to moderately alkaline

Ap horizon:
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—2 or 3
Texture—clay loam

A horizon (if it occurs):
Hue—7.5YR or 10YR
Value—2 or 3
Chroma—2 or 3
Texture—sandy loam, fine sandy loam, loam, silt loam, or clay loam in the fine-earth fraction

Bw horizon:
Hue—7.5YR or 10YR
Value—4 or 5; in some pedons, the upper part of horizon has value of 2 or 3
Chroma—4 to 6; in some pedons, the upper part of horizon has chroma of 1 to 3
Texture—loam, silt loam, sandy clay loam, or clay loam in the fine-earth fraction

C horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—loamy sand, sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam in the fine-earth fraction

Formation of the Soils

This section explains the factors and processes of soil formation as related to the soils of Tazewell County. It identifies the five major factors of soil formation and describes their influence on the soils in the county.

Factors of Soil Formation

Soils form through the interaction of five major factors—parent material, climate, plant and animal life, relief, and time. The relative influence of each factor generally varies from place to place *(7)*.

Climate and plants and animals are active forces of soil formation. They act on parent material that has accumulated through the weathering of rocks and slowly change it into soil. All five factors contribute to the formation of every soil. Local variations in soils are a result of differences in kind of parent material, topography, or drainage. In some places, one factor may dominate the formation of a soil and determine most of its properties. The combined action of the five factors, however, determines the character of each soil.

Parent Material

Parent material is the unconsolidated mass in which soils form. It is largely responsible for the mineralogical and chemical composition of the soil and the rate at which soil-forming processes take place. Table 21 shows how geology relates to soils in Tazewell County.

The soils in Tazewell County formed in four different kinds of parent material—residuum, alluvium, colluvium, and mine spoil (or regolith from surface coal mine operations).

Residuum is derived from the weathering of limestone, shale, siltstone, and sandstone. The soils that formed in residuum derived from limestone, including dolomite, and from shale are the most extensive in the valley of the survey area. These soils have a wide range of characteristics. The soils that formed in residuum derived from limestone typically have a silty surface layer and a clayey subsoil. They include Frederick and Pisgah soils. Berks soils formed in residuum derived from acid shale and siltstone. Dekalb soils formed in residuum derived from acid sandstone.

Alluvium of local origin occurs along the smaller streams and the Clinch River. The soils that formed in alluvium vary in texture and development. They include Melvin, Craigsville, Philo, Allegheny, and Wolfgap soils.

Colluvium is mainly on the lower mountain slopes. It is mainly moderately coarse textured, medium textured, or moderately fine textured. Oriskany and Grimsley soils formed in colluvium.

Mine spoil consists of regolith of disturbed materials from surface coal mine operations. It is in the northern third of Tazewell County. This regolith consists of varying amounts of shale, siltstone, coal, and sandstone fragments ranging in size from gravel to boulders. Cedarcreek soils formed in regolith. They are medium textured to moderately fine textured.

Climate

Precipitation and temperature are the main climatic influences on soil formation. Water dissolves minerals, supports biological activity, and transports mineral and organic residue through the soil. Temperature determines the types of physical, chemical, and biological activities that take place in the soil and the speed at which they occur.

The amount of precipitation in Tazewell County exceeds evapotranspiration. As a result, the soils have been leached. Much soluble material originally in the soil or released through weathering has been removed. The exceptions are alluvial areas that limestone springs recharge with carbonates. Precipitation is mainly responsible for the characteristic of a clayey subsoil for many soils in the county.

Water leaches soluble materials. As it percolates through the soil, it moves small amounts of clay from the surface to the subsoil. Consequently, with some exceptions, the soils of the county typically have more clay in the subsoil than in the surface layer. The excepted soils formed in recent alluvium, on very steep slopes, or in regolith from surface mine operations.

Tazewell County has a humid, continental climate marked by extreme seasonal temperature changes. Average annual precipitation is about 43 inches. The average air temperature is about 51 degrees. Adequate annual precipitation and warm temperatures have provided conditions for the rapid decomposition of organic matter but have limited the accumulation of organic matter in the surface layer of the soils. For more detailed information on climate, see the section under “General Nature of the Survey Area.”

Plant and Animal Life

Microorganisms, vegetation, animals, and humans are major factors in the formation of soils. Vegetation is generally responsible for the amount of organic matter in the soil and the color of the surface layer. Earthworms, cicada, and burrowing animals help to keep the soil open and porous. Microorganisms decompose the vegetation and dead animal matter, thus releasing nutrients for plant food.

Before the survey area was settled, the native vegetation was the major living organism affecting soil development. The native vegetation consisted mainly of hardwoods. In the original forest cover, oaks, hickories, chestnuts, maples, beech, and birch were the dominant trees but scattered hemlock and eastern white pine were also present. Most hardwoods use a large amount of the available calcium and other bases and constantly recycle them through leaf fall and decay. Because coniferous trees recycle smaller amount of bases than deciduous trees, more bases have been leached from soils that developed under coniferous vegetation rather than under deciduous vegetation. The soils of the mountainous regions of the Tazewell County that are underlain by acid parent rock have few remaining bases, even though they developed under a hardwood forest. This is mainly because of the low base content of the original parent material. Because the soils formed under forest vegetation, rapid decay of organic matter and constant recycling of plant nutrients have prevented organic matter from accumulating in large quantities. In addition, the present climate favors rapid decay of plant materials, oxidation of organic matter, and leaching of plant nutrients.

As farming developed in the survey area, humans became an important factor in development of the soils. The clearing of the forests, cultivation, introduction of new plants, and changes in natural drainage have all affected soil development. The most important changes brought about by humans are the mixing of the upper layers of the soil to form a plow layer, the cultivation of steep erodible slopes, and adding lime and fertilizer, which changes the content of plant nutrients, especially in the upper layers of the soil.

Figure 10.—An exposure of Clinch Sandstone atop Paint Lick Mountain. Clinch Sandstone underlies Wallen and Lily soils in the Valley and Ridge province in the Appalachian Highlands.

Relief

The relief of an area has three main determinants—the underlying geologic formations, the geologic history of the general region, and the effects of dissection by rivers and streams. Relief influences soil formation through its effects on soil moisture, erosion, temperature, and plant cover.

Tazewell County is in the Appalachian Highlands, Valley and Ridge province, and Appalachian Plateaus and is dissected by the Tennessee Valley Divide. It is drained eastward into the New River, northward into the Big Sandy River, westward into the Clinch River, and southward into the Holston River.

The Valley and Ridge province of the Appalachian Highlands is mountainous. Its highest peak has an elevation of more than 4,700 feet. Relief is characterized largely by a structurally controlled drainage pattern. The ridges and valleys run mainly southwest to northeast. The mountain systems are underlain by such resistant rocks as sandstone and quartzite. The Clinch Sandstone and the accompanying Juniata Formation are resistant to weathering (fig. 10) and have the greatest relief in the county. They mainly determine the directions of the drainage systems.

The valley relief is also affected by the underlying geology. The notable formations are Copper Ridge Dolomite, Beekmantown Dolomite, and Holston Limestone. They comprise the least resistant rocks and have the least relief in the county. Characteristically, the hillier valleys are underlain by Martinsburg and Brallier Shales.

The Appalachian Plateaus, Cumberland Plateau and Cumberland Mountain section, comprises part of the county. This part of the county has a largely defined, dendritic drainage pattern. It is underlain mainly by the Lee and Norton Formations, which consist of sandstone, shale, and coal beds.

Most soils on uplands are naturally well drained. Soils on terraces and flood plains range from poorly drained to well drained. Soil drainage commonly is related to landscape position. The soils in the low, nearly level positions commonly are poorly drained. Those in more sloping areas typically are well drained.

Time

The degree of development or degree of horizon differentiation within the soil is related to the length of time that the soil has been subjected to the other soil-forming factors. A young soil has little or no horizon development, but an old or mature soil has strongly developed horizons.

The oldest soils in Tazewell County formed mainly in residuum derived from limestone. Frederick and Pisgah soils are examples. In general, these soils are in the less sloping, relatively stable positions. They formed in easily weatherable material and have a high degree of horizon differentiation.

Soils that formed in recent alluvium have been in place only a relatively short time. They show little development besides the accumulation of organic matter in the surface layer. They commonly are stratified and have an irregular distribution of organic matter. Melvin and Philo soils formed in alluvium.

Soils on terraces have recognizable horizon development. Generally, they are intermediate in degree of development. They are younger than residual soils but older than alluvial soils. Allegheny soils formed on terraces.

On very steep slopes, geologic erosion has removed soil material in a relatively short time. The soils generally have not been in place long enough for the development of more than moderate horizon differentiation.

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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.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial cone. A semiconical type of alluvial fan having very steep slopes. It is higher, narrower, and steeper than a fan and is composed of coarser and thicker layers of material deposited by a combination of alluvial episodes and (to a much lesser degree) landslides (debris flow). The coarsest materials tend to be concentrated at the apex of the cone.

Alluvial fan. A low, outspread mass of loose materials and/or rock material, commonly with gentle slopes. It is shaped like an open fan or a segment of a cone. The material was deposited by a stream at the place where it issues from a narrow mountain valley or upland valley or where a tributary stream is near or at its junction with the main stream. The fan is steepest near its apex, which points upstream, and slopes gently and convexly outward (downstream) with a gradual decrease in gradient.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

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 1 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 toward which a slope faces. Also called slope aspect.

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.

Backswamp. A flood-plain landform. An extensive, marshy or swampy, depressed area of flood plains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

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 (geomorphology). 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).

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

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. In surface mining, a nearly level to gently inclined cut section in a mountain slope or footslope from which a seam of coal has been removed.

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.

Blowout. A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed; the adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. A landscape or tract of steep, rough or broken land dissected by ravines and gullies and marking a sudden change in topography.

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.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, felled trees generally are reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

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 and under similar climatic conditions but that 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.

Catsteps. See Terracettes.

Cement rock. Shaly limestone used in the manufacture of cement.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

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 depletions. See Redoximorphic features.

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.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

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.

Concretions. See Redoximorphic features.

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. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

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.

Conglomerate. A coarse-grained, clastic sedimentary 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.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

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.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

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.

Coprogenous earth (sedimentary peat). A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Cryoturbate. A mass of soil or other unconsolidated earthy material moved or disturbed by frost action. It is typically coarser than the underlying material.

Cuesta. An asymmetric ridge capped by resistant rock layers of slight or moderate dip (commonly less than 15 percent slopes); a type of homocline produced by differential erosion of interbedded resistant and weak rocks. A cuesta has a long, gentle slope on one side (dip slope) that roughly parallels the inclined beds; on the other side, it has a relatively short and steep or clifflike slope (scarp) that cuts through the tilted rocks.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cut and filled. An area that has been disturbed or altered by human activity. As a result, the natural soil was removed and was replaced by soil or other material in an unnatural process.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

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 soils, 20 to 40 inches; shallow soils, 10 to 20 inches; and very shallow soils, less than 10 inches.

Differential settling. Uneven settling of earthy material.

Diatomaceous earth. A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

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.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

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.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw. A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

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.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill. See Mine spoil.

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.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

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.

Erosion pavement. A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

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. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fan remnant. A general term for landforms that are the remaining parts of older fan landforms, such as alluvial fans, that have been either dissected or partially buried.

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.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

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. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Foothills. A region of steeply sloping hills that fringes a mountain range or high-plateau escarpment. The hills have relief of as much as 1,000 feet (300 meters).

Footslope. The concave surface at the base of a hillslope. 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.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

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.

Gilgai. Commonly, a succession of microbasins and microknolls in nearly level areas or of microvalleys and microridges parallel with the slope. Typically, the microrelief of clayey soils that shrink and swell considerably with changes in moisture content.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

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.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. 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.

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.

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.

Head slope (geomorphology). 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.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Highwall. A high, very steep to perpendicular face of rock or earth. The face was exposed in surface mining to remove coal from a seam along a mountain slope.

Hill. A generic term for an elevated area 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. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

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.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

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 that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., 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.

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. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Karst (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Landslide. A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. 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. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar. A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll. One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

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.

Mesa. A broad, nearly flat topped and commonly isolated landmass bounded by steep slopes or precipitous cliffs and capped by layers of resistant, nearly horizontal rocky material. The summit width is characteristically greater than the height of the bounding escarpments.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit 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.

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 generic term for an elevated area of the land surface, rising more than 1,000 feet (300 meters) 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. Mountains are formed primarily by tectonic activity and/or volcanic action but can also be formed by differential erosion.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. A blocky or massive, fine-grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite. It should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

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.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

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

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 layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

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. Ground, soil, or rock that remains at or below 0 degrees C for at least 2 years. It is defined on the basis of temperature and is not necessarily frozen.

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

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)
Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.
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.
Plastic limit. The moisture content at which a soil changes from semisolid to plastic.
Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.
Plateau (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower-lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.
Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressions, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff. Playa deposits are fine grained and may or may not have a high water table and saline conditions.
Plinthite. The sesquioxide-rich, humus-poor, highly weathered mixture of clay with quartz and other diluents. It commonly appears as red mottles, usually in platy, polygonal, or reticulate patterns. Plinthite changes irreversibly to an ironstone hardpan or to irregular aggregates on repeated wetting and drying, especially if it is exposed also to heat from the sun. In a moist soil, plinthite can be cut with a spade. It is a form of laterite.
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.
Pore linings. See Redoximorphic features.
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.
Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as 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

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features. The redoximorphic features are defined as follows:

1. *Redoximorphic concentrations.*—These are zones of apparent accumulation of iron-manganese oxides and include nodules and concretions, masses, and pore linings. *Nodules and concretions* are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure. *Masses* are noncemented concentrations of substances within the soil matrix. *Pore linings* are zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. *Redoximorphic depletions.*—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out. They include iron depletions and clay depletions. *Iron depletions* are zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix. *Clay depletions* are zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).
3. *Reduced matrix.*—This is a soil matrix that has low chroma in situ but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Ridge. A long, narrow elevation of the land surface, generally with a sharp crest and steep sides. It forms an extended upland between valleys. The term is used in areas of both hill and mountain relief.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

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.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments ranging 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.

Saturated hydraulic conductivity (K_{sat}). See Permeability.

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.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

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 that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

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 convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune. A small, streamlined dune that forms around brush and clump vegetation.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

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. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

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 (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

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. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 7 percent
Strongly sloping	7 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 35 percent
Very steep	35 percent and higher

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^+ to Ca^{++} + Mg^{++}. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

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 and by the passage of time.

Soil crusts. Relatively thin, somewhat continuous layers of the soil surface that often restrict water movement, air entry, and seedling emergence from the soil. They generally are less than 2 inches thick and are massive.

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.

Spur. A subordinate ridge or lesser elevation that projects sharply from the crest or side of a hill, mountain, or other prominent range of hills or mountains.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

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.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

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. Rock fragments of any size or shape (commonly coarse and angular) derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose broken rock formed chiefly by falling, rolling, or sliding.

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.

Terrace (conservation). 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 (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

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.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. 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.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Unstable fill (in tables). There is a risk of caving or sloughing on banks of fill material. Fill material that is subject to differential settling.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley. An elongate, relatively large, externally drained depression of the earth's surface primarily developed by stream erosion.

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 disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered 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

(Recorded in the period 1971-2000 at Burkes Garden, Virginia)

Month	Temperature: Average daily maximum	Temperature: Average daily minimum	Temperature: Average daily	Temperature: 2 years in 10 will have-- Maximum temp. higher than--	Temperature: 2 years in 10 will have-- Minimum temp. lower than--	Temperature: Average number of growing degree days*	Precipitation: Average	Precipitation: 2 years in 10 will have-- Less than--	Precipitation: 2 years in 10 will have-- More than--	Precipitation: Average number of days with 0.10 inch or more	Precipitation: Average snow-fall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	39.3	20.2	29.8	62	-13	27	3.88	2.21	5.38	8	15.1
February-	42.7	22.1	32.4	67	-6	41	3.41	2.07	4.76	7	13.8
March----	51.5	29.5	40.5	74	6	130	4.11	2.51	5.77	8	8.1
April----	60.7	35.6	48.1	79	15	265	3.60	2.15	5.06	8	3.0
May------	68.6	44.5	56.6	81	24	508	4.89	3.35	6.35	10	0.1
June-----	75.2	52.6	63.9	85	34	713	4.26	2.64	5.71	8	0.0
July-----	78.8	56.6	67.7	88	40	847	4.38	2.68	6.05	8	0.0
August---	77.6	54.6	66.1	87	39	810	4.04	2.57	5.35	7	0.0
September	72.0	48.3	60.1	85	28	599	3.47	1.70	5.26	6	0.0
October--	62.4	36.6	49.5	77	17	305	3.11	1.43	4.71	5	0.4
November-	52.0	29.6	40.8	72	7	126	3.15	1.94	4.26	7	2.9
December-	43.0	23.0	33.0	65	-5	50	3.41	1.96	4.74	7	9.1
Yearly:											
Average	60.3	37.8	49.0	---	---	---	---	---	---	---	---
Extreme	94	-26	---	89	-16	---	---	---	---	---	---
Total--	---	---	---	---	---	4,421	45.71	39.41	51.52	89	52.5

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Burkes Garden, Virginia)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 3	May 14	June 3
2 years in 10 later than--	Apr. 27	May 10	May 27
5 years in 10 later than--	Apr. 15	May 3	May 16
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 4	Sept. 24	Sept. 10
2 years in 10 earlier than--	Oct. 8	Sept. 28	Sept. 15
5 years in 10 earlier than-	Oct. 17	Oct. 6	Sept. 26

Table 3.—Growing Season

(Recorded in the period 1971-2000 at Burkes Garden, Virginia)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	163	140	109
8 years in 10	170	145	118
5 years in 10	184	156	133
2 years in 10	198	167	148
1 year in 10	205	172	156

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1A	Allegheny loam, 0 to 2 percent slopes	129	*
1B	Allegheny loam, 2 to 7 percent slopes	349	0.1
2C	Alticrest fine sandy loam, 7 to 15 percent slopes	209	*
2D	Alticrest fine sandy loam, 15 to 25 percent slopes	1,624	0.5
2E	Alticrest fine sandy loam, 25 to 40 percent slopes	8,618	2.7
3C	Berks-Weikert complex, 7 to 15 percent slopes	373	0.1
3D	Berks-Weikert complex, 15 to 35 percent slopes	3,616	1.1
3E	Berks-Weikert complex, 35 to 55 percent slopes	18,661	5.7
4E	Berks-Gilpin complex, 25 to 35 percent slopes	4,359	1.3
4F	Berks-Gilpin complex, 35 to 70 percent slopes	9,663	3.0
5D	Bland-Rock outcrop complex, 15 to 25 percent slopes	419	0.1
5E	Bland-Rock outcrop complex, 25 to 50 percent slopes	4,673	1.4
6B	Bland silty clay loam, 2 to 7 percent slopes	112	*
6C	Bland silty clay loam, 7 to 15 percent slopes	340	0.1
6D	Bland silty clay loam, 15 to 25 percent slopes	475	0.1
7C	Botetourt loam, 7 to 15 percent slopes	4	*
8D	Brushy gravelly loam, 15 to 25 percent slopes	310	*
8E	Brushy gravelly loam, 25 to 60 percent slopes	1,722	0.5
9D	Calvin channery silt loam, 15 to 35 percent slopes	951	0.3
9E	Calvin channery silt loam, 35 to 55 percent slopes	5,235	1.6
10D	Calvin channery silt loam, 15 to 35 percent slopes, very stony	654	0.2
10E	Calvin channery silt loam, 35 to 55 percent slopes, very stony	4,197	1.3
11C	Carbo silt loam, 7 to 15 percent slopes	236	*
11D	Carbo silt loam, 15 to 25 percent slopes	188	*
11E	Carbo silt loam, 25 to 35 percent slopes	132	*
11F	Carbo silt loam, 35 to 65 percent slopes	650	0.2
12D	Carbo-Rock outcrop complex, 7 to 25 percent slopes	3,883	1.2
12E	Carbo-Rock outcrop complex, 25 to 65 percent slopes	18,454	5.7
13E	Carbo-Rock outcrop complex, karst, 7 to 65 percent slopes	7,852	2.4
14C	Cedarcreek-Alticrest-Rock outcrop complex, 5 to 15 percent slopes, very stony	98	*
14E	Cedarcreek-Alticrest-Rock outcrop complex, 15 to 40 percent slopes, very stony	1,508	0.5
15C	Cedarcreek-Rock outcrop complex, 0 to 15 percent slopes, very stony	715	0.2
15D	Cedarcreek-Rock outcrop complex, 15 to 35 percent slopes, very stony	124	*
15E	Cedarcreek-Rock outcrop complex, 35 to 80 percent slopes, very stony	885	0.3
16D	Chiswell-Litz complex, 15 to 25 percent slopes	340	0.1
16E	Chiswell-Litz complex, 25 to 35 percent slopes	1,007	0.3
16F	Chiswell-Litz complex, 35 to 60 percent slopes	1,184	0.4
17B	Coursey loam, 2 to 7 percent slopes	333	0.1
18B	Craigsville very gravelly sandy loam, 0 to 5 percent slopes, frequently flooded	2,515	0.8
19D	Drypond-Rock outcrop complex, 15 to 35 percent slopes, extremely stony	188	*
19E	Drypond-Rock outcrop complex, 35 to 80 percent slopes, extremely stony	37	*
20B	Frederick silt loam, 2 to 7 percent slopes	691	0.2
20C	Frederick silt loam, 7 to 15 percent slopes	2,389	0.7
20D	Frederick silt loam, 15 to 25 percent slopes	2,868	0.9
20E	Frederick silt loam, 25 to 35 percent slopes	1,362	0.4
20F	Frederick silt loam, 35 to 60 percent slopes	594	0.2
21B	Frederick gravelly silt loam, 2 to 7 percent slopes	665	0.2
21C	Frederick gravelly silt loam, 7 to 15 percent slopes	4,044	1.2
21D	Frederick gravelly silt loam, 15 to 25 percent slopes	10,786	3.3
21E	Frederick gravelly silt loam, 25 to 35 percent slopes	9,894	3.0
21F	Frederick gravelly silt loam, 35 to 60 percent slopes	3,325	1.0
22B	Frederick silt loam, karst, 2 to 7 percent slopes	592	0.2
22C	Frederick silt loam, karst, 7 to 15 percent slopes	4,460	1.4
22D	Frederick silt loam, karst, 15 to 25 percent slopes	4,534	1.4
22E	Frederick silt loam, karst, 25 to 35 percent slopes	407	0.1
23C	Gilpin-Berks complex, 7 to 15 percent slopes	675	0.2
23D	Gilpin-Berks complex, 15 to 25 percent slopes	1,749	0.5
24C	Grimsley loam, 8 to 15 percent slopes, very stony	30	*
24D	Grimsley loam, 15 to 35 percent slopes, very stony	2,157	0.7

See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
24E	Grimsley loam, 35 to 70 percent slopes, very stony	13,559	4.2
25D	Grimsley-Cedarcreek-Berks complex, 8 to 35 percent slopes, very rocky	120	*
25E	Grimsley-Cedarcreek-Berks complex, 35 to 70 percent slopes, rocky	3,870	1.2
26B	Groseclose silt loam, 2 to 7 percent slopes	67	*
26C	Groseclose silt loam, 7 to 15 percent slopes	80	*
26D	Groseclose silt loam, 15 to 25 percent slopes	223	*
26E	Groseclose silt loam, 25 to 35 percent slopes	127	*
27B	Guernsey silt loam, 2 to 7 percent slopes	2,545	0.8
27C	Guernsey silt loam, 7 to 15 percent slopes	398	0.1
28C	Lily fine sandy loam, 7 to 15 percent slopes	1,299	0.4
28D	Lily fine sandy loam, 15 to 25 percent slopes	2,502	0.8
28E	Lily fine sandy loam, 25 to 35 percent slopes	4,100	1.3
28F	Lily fine sandy loam, 35 to 65 percent slopes	10,375	3.2
29D	Lily fine sandy loam, 15 to 35 percent slopes, very stony	2,156	0.7
29E	Lily fine sandy loam, 35 to 65 percent slopes, very stony	4,844	1.5
30C	Madsheep channery silt loam, 7 to 15 percent slopes	11	*
30D	Madsheep channery silt loam, 15 to 35 percent slopes	70	*
31E	Madsheep channery silt loam, 35 to 55 percent slopes, very stony	763	0.2
32A	Melvin silt loam, 0 to 2 percent slopes, frequently flooded	1,980	0.6
33	Mine Tipples, Dumps, and Tailings	222	*
34B	Murrill silt loam, 2 to 7 percent slopes	703	0.2
34C	Murrill silt loam, 7 to 15 percent slopes	1,516	0.5
34D	Murrill silt loam, 15 to 25 percent slopes	619	0.2
35A	Newark-Lindside complex, 0 to 3 percent slopes, occasionally flooded	3,454	1.1
36F	Newbern-Rock outcrop complex, 25 to 70 percent slopes	909	0.3
37C	Oriskany gravelly fine sandy loam, 7 to 15 percent slopes	2,863	0.9
37D	Oriskany gravelly fine sandy loam, 15 to 25 percent slopes	1,664	0.5
38C	Oriskany gravelly fine sandy loam, 7 to 15 percent slopes, very stony	3,301	1.0
38D	Oriskany gravelly fine sandy loam, 15 to 35 percent slopes, very stony	29,212	9.0
38E	Oriskany gravelly fine sandy loam, 35 to 55 percent slopes, extremely stony	20,434	6.3
39D	Paddyknob-Rock outcrop complex, 15 to 35 percent slopes, extremely stony	158	*
39E	Paddyknob-Rock outcrop complex, 35 to 80 percent slopes, extremely stony	269	*
40D	Paddyknob gravelly loam, 15 to 35 percent slopes, very stony	464	0.1
40E	Paddyknob gravelly loam, 35 to 55 percent slopes, very stony	180	*
41A	Philo fine sandy loam, 0 to 3 percent slopes, frequently flooded	1,316	0.4
42B	Pisgah silt loam, 2 to 7 percent slopes	819	0.3
42C	Pisgah silt loam, 7 to 15 percent slopes	150	*
43B	Pisgah silt loam, karst, 2 to 7 percent slopes	968	0.3
43C	Pisgah silt loam, karst, 7 to 15 percent slopes	118	*
44	Pits, quarry	212	*
45A	Pope fine sandy loam, 0 to 2 percent slopes, rarely flooded	1,231	0.4
46C	Poplimento-Westmoreland complex, 7 to 15 percent slopes	1,241	0.4
46D	Poplimento-Westmoreland complex, 15 to 25 percent slopes	2,812	0.9
47A	Purdy silt loam, 0 to 2 percent slopes	362	0.1
48B	Timberville silt loam, 2 to 7 percent slopes, frequently flooded	938	0.3
49B	Tumbling loam, 2 to 7 percent slopes, very stony	9	*
49C	Tumbling loam, 7 to 15 percent slopes, very stony	4	*
50	Udorthents-Urban land complex	3,444	1.1
51D	Wallen-Rock outcrop complex, 15 to 35 percent slopes, extremely stony	869	0.3
51E	Wallen-Rock outcrop complex, 35 to 80 percent slopes, extremely stony	5,148	1.6
52C	Wallen channery sandy loam, 7 to 15 percent slopes, very stony	326	0.1
52D	Wallen channery sandy loam, 15 to 35 percent slopes, very stony	2,170	0.7
52E	Wallen channery sandy loam, 35 to 65 percent slopes, very stony	1,945	0.6
53E	Westmoreland-Poplimento-Berks complex, 25 to 35 percent slopes	7,091	2.2
53F	Westmoreland-Poplimento-Berks complex, 35 to 65 percent slopes	19,731	6.1
54A	Wolfgap clay loam, 0 to 2 percent slopes, occasionally flooded	2	*
W	Water	893	0.3
	Total	325,100	100.0

* Less than 0.1 percent.

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
1A:							
Allegheny------	1	L	6.0	130	26.0	4.0	8.5
1B:							
Allegheny------	2e	L	6.0	130	26.0	4.0	8.5
2C:							
Alticrest------	3e	FF	---	75	15.0	3.1	5.5
2D:							
Alticrest------	4e	FF	---	68	13.0	2.8	4.5
2E:							
Alticrest------	7e	FF	---	---	---	---	---
3C:							
Berks----------	4s	JJ	---	57	11.0	2.5	4.0
Weikert--------	6s	JJ	---	---	---	---	3.0
3D:							
Berks----------	6e	JJ	---	---	---	---	3.5
Weikert--------	6e	JJ	---	---	---	---	2.5
3E:							
Berks----------	7e	JJ	---	---	---	---	---
Weikert--------	7e	JJ	---	---	---	---	---
4E:							
Berks----------	6e	JJ	---	---	---	---	3.0
Gilpin---------	6e	U	---	---	---	---	4.0
4F:							
Berks----------	7e	JJ	---	---	---	---	---
Gilpin---------	7e	U	---	---	---	---	---
5D:							
Bland----------	7s	Y	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
5E:							
Bland----------	7s	Y	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
6B:							
Bland----------	2e	Y	---	100	20.0	3.5	6.0
6C:							
Bland----------	3e	Y	---	88	18.0	3.0	5.0

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
6D:							
Bland	4e	Y	---	80	16.0	2.5	4.5
7C:							
Botetourt	3e	G	---	123	27.0	4.0	7.0
8D:							
Brushy	4e	JJ	---	45	9.0	2.2	3.5
8E:							
Brushy	7e	JJ	---	---	---	---	---
9D:							
Calvin	6e	JJ	---	---	---	---	3.5
9E:							
Calvin	7e	JJ	---	---	---	---	---
10D:							
Calvin	7s	JJ	---	---	---	---	---
10E:							
Calvin	7e	JJ	---	---	---	---	---
11C:							
Carbo	3e	Y	---	88	19.0	3.0	5.0
11D:							
Carbo	4e	Y	---	80	17.0	2.8	4.5
11E:							
Carbo	6e	Y	---	---	---	---	4.0
11F:							
Carbo	7e	Y	---	---	---	---	---
12D:							
Carbo	7s	Y	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---
12E:							
Carbo	7s	Y	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---
13E:							
Carbo	7s	Y	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---
14C:							
Cedarcreek	7s	JJ	---	---	---	---	---
Alticrest	7s	FF	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
14E:							
Cedarcreek-----	7s	JJ	---	---	---	---	---
Alticrest------	7s	FF	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
15C:							
Cedarcreek-----	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
15D:							
Cedarcreek-----	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
15E:							
Cedarcreek-----	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
16D:							
Chiswell-------	6s	JJ	---	---	---	---	2.5
Litz-----------	4e	JJ	---	52	---	2.5	3.5
16E:							
Chiswell-------	6e	JJ	---	---	---	---	2.0
Litz-----------	6e	JJ	---	---	---	---	3.0
16F:							
Chiswell-------	7e	JJ	---	---	---	---	---
Litz-----------	7e	JJ	---	---	---	---	---
17B:							
Coursey--------	2e	G	---	140	28.0	4.5	6.0
18B:							
Craigsville----	3s	CC	---	65	11.0	2.6	4.5
19D:							
Drypond--------	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
19E:							
Drypond--------	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
20B:							
Frederick------	2e	M	6.0	130	26.0	4.0	8.3
20C:							
Frederick------	3e	M	5.3	114	23.0	3.5	8.0

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
20D:							
Frederick------	4e	M	4.8	104	21.0	3.2	7.7
20E:							
Frederick------	6e	M	---	---	---	---	7.0
20F:							
Frederick------	7e	M	---	---	---	---	---
21B:							
Frederick------	2e	M	5.4	117	23.0	3.6	7.5
21C:							
Frederick------	3e	M	4.8	103	21.0	3.2	7.2
21D:							
Frederick------	4e	M	4.3	94	19.0	2.9	7.0
21E:							
Frederick------	6e	M	---	---	---	---	6.3
21F:							
Frederick------	7e	M	---	---	---	---	---
22B:							
Frederick------	2e	M	6.0	---	---	4.0	8.3
22C:							
Frederick------	3e	M	5.3	---	---	3.5	8.0
22D:							
Frederick------	4e	M	4.8	---	---	3.2	7.7
22E:							
Frederick------	6e	M	---	---	---	---	7.0
23C:							
Gilpin---------	3e	U	3.5	97	19.0	3.1	5.0
Berks----------	4s	JJ	---	57	11.0	2.5	4.0
23D:							
Gilpin---------	4e	U	3.2	88	18.0	2.8	4.5
Berks----------	4e	JJ	---	52	10.0	2.4	3.5
24C:							
Grimsley-------	6s	CC	---	---	---	---	4.0
24D:							
Grimsley-------	7s	CC	---	---	---	---	---
24E:							
Grimsley-------	7e	CC	---	---	---	---	---
25D:							
Grimsley-------	6e	CC	---	---	---	---	4.0
Cedarcreek-----	6e	JJ	---	---	---	---	4.0
Berks----------	6e	JJ	---	---	---	---	3.5

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
25E:							
Grimsley-------	7e	CC	---	---	---	---	---
Cedarcreek-----	7e	JJ	---	---	---	---	---
Berks----------	7e	JJ	---	---	---	---	---
26B:							
Groseclose-----	2e	M	6.0	130	21.0	4.0	8.2
26C:							
Groseclose-----	3e	M	5.3	114	19.0	3.5	7.5
26D:							
Groseclose-----	4e	M	4.8	104	17.0	3.2	6.5
26E:							
Groseclose-----	6e	M	---	---	---	---	6.0
27B:							
Guernsey-------	2e	M	---	130	26.0	4.0	7.0
27C:							
Guernsey-------	3e	M	---	114	23.0	3.5	6.0
28C:							
Lily-----------	3e	U	3.5	97	19.0	3.0	5.0
28D:							
Lily-----------	4e	U	3.2	88	18.0	2.8	4.5
28E:							
Lily-----------	6e	U	---	---	---	---	4.0
28F:							
Lily-----------	7e	U	---	---	---	---	---
29D:							
Lily-----------	7s	U	---	---	---	---	---
29E:							
Lily-----------	7e	U	---	---	---	---	---
30C:							
Madsheep-------	3e	JJ	---	48	10.0	2.2	4.0
30D:							
Madsheep-------	6e	JJ	---	---	---	---	3.5
31E:							
Madsheep-------	7e	JJ	---	---	---	---	---
32A:							
Melvin---------	6w	NN	---	---	---	---	3.5
33.							
Mine Tipples, Dumps, and Tailings							

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
34B:							
Murrill--------	2e	L	6.0	130	26.0	4.0	8.5
34C:							
Murrill--------	3e	L	4.8	114	23.0	3.5	7.5
34D:							
Murrill--------	4e	L	4.4	104	21.0	3.2	7.5
35A:							
Newark---------	4w	NN	---	65	13.0	---	4.0
Lindside-------	2w	G	---	140	28.0	4.5	8.0
36F:							
Newbern--------	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
37C:							
Oriskany-------	3e	CC	---	67	13.0	2.8	4.0
37D:							
Oriskany-------	4e	CC	---	61	12.0	2.5	3.5
38C:							
Oriskany-------	6s	CC	---	---	---	---	4.0
38D:							
Oriskany-------	7s	CC	---	---	---	---	---
38E:							
Oriskany-------	7e	CC	---	---	---	---	---
39D:							
Paddyknob------	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
39E:							
Paddyknob------	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
40D:							
Paddyknob------	7s	JJ	---	---	---	---	---
40E:							
Paddyknob------	7e	JJ	---	---	---	---	---
41A:							
Philo----------	3w	H	---	140	28.0	3.0	8.5
42B:							
Pisgah---------	2e	M	6.0	130	26.0	4.0	8.0
42C:							
Pisgah---------	3e	M	5.3	114	23.0	3.5	7.5

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
43B:							
Pisgah---------	2e	M	6.0	---	---	4.0	8.0
43C:							
Pisgah---------	3e	M	5.3	---	---	3.5	7.5
44.							
Pits, quarry							
45A:							
Pope-----------	1	A	5.0	125	23.0	4.0	8.0
46C:							
Poplimento-----	3e	M	5.3	114	24.0	3.5	7.5
Westmoreland---	3e	U	3.5	97	21.0	3.1	5.5
46D:							
Poplimento-----	4e	M	4.8	104	21.0	3.2	7.0
Westmoreland---	4e	U	3.2	88	18.0	2.8	5.0
47A:							
Purdy----------	4w	NN	---	65	13.0	---	3.5
48B:							
Timberville----	2w	G	5.5	140	28.0	4.5	8.5
49B:							
Tumbling-------	6s	O	---	---	---	---	6.5
49C:							
Tumbling-------	6s	O	---	---	---	---	6.0
50.							
Udorthents-Urban land							
51D:							
Wallen---------	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
51E:							
Wallen---------	7s	JJ	---	---	---	---	---
Rock outcrop---	8s	---	---	---	---	---	---
52C:							
Wallen---------	6s	JJ	---	---	---	---	3.5
52D:							
Wallen---------	7s	JJ	---	---	---	---	---
52E:							
Wallen---------	7e	JJ	---	---	---	---	---

Table 5.—Land Capability, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia Soil Management Group	Alfalfa hay	Corn	Corn silage	Grass-legume hay	Pasture
			Tons	Bu	Tons	Tons	AUM
53E:							
Westmoreland---	6e	U	---	---	---	---	4.0
Poplimento-----	6e	M	---	---	---	---	6.0
Berks----------	6e	JJ	---	---	---	---	3.0
53F:							
Westmoreland---	7e	U	---	---	---	---	---
Poplimento-----	7e	M	---	---	---	---	---
Berks----------	7e	JJ	---	---	---	---	---
54A:							
Wolfgap--------	1	A	6.0	160	30.0	4.5	8.5
W.							
Water							

Table 6.—Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Map unit name
1A	Allegheny loam, 0 to 2 percent slopes
1B	Allegheny loam, 2 to 7 percent slopes
17B	Coursey loam, 2 to 7 percent slopes
20B	Frederick silt loam, 2 to 7 percent slopes
21B	Frederick gravelly silt loam, 2 to 7 percent slopes
26B	Groseclose silt loam, 2 to 7 percent slopes
27B	Guernsey silt loam, 2 to 7 percent slopes
34B	Murrill silt loam, 2 to 7 percent slopes
35A	Newark-Lindside complex, 0 to 3 percent slopes, occasionally flooded (if drained and either protected from flooding or not frequently flooded during the growing season)
41A	Philo fine sandy loam, 0 to 3 percent slopes, frequently flooded (if protected from flooding or not frequently flooded during the growing season)
42B	Pisgah silt loam, 2 to 7 percent slopes
45A	Pope fine sandy loam, 0 to 2 percent slopes, rarely flooded
48B	Timberville silt loam, 2 to 7 percent slopes, frequently flooded (if protected from flooding or not frequently flooded during the growing season)
54A	Wolfgap clay loam, 0 to 2 percent slopes, occasionally flooded

Table 7.—Agricultural Waste Management, Part I

(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	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
1A:					
Allegheny-----------	85	Somewhat limited		Somewhat limited	
		Too acid	0.05	Too acid	0.21
1B:					
Allegheny-----------	85	Somewhat limited		Somewhat limited	
		Too acid	0.05	Too acid	0.21
2C:					
Alticrest-----------	85	Somewhat limited		Very limited	
		Droughty	0.77	Low adsorption	1.00
		Too acid	0.50	Too acid	0.99
		Slope	0.37	Droughty	0.77
2D:					
Alticrest-----------	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.77	Slope	1.00
		Too acid	0.50	Too acid	0.99
2E:					
Alticrest-----------	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.77	Slope	1.00
		Too acid	0.50	Too acid	0.99
3C:					
Berks---------------	50	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Too acid	0.43	Droughty	1.00
		Slope	0.37	Too acid	0.99
Weikert-------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Droughty	1.00
		Droughty	1.00	Depth to bedrock	1.00
		Too acid	0.62	Low adsorption	1.00
3D:					
Berks---------------	50	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.43	Droughty	1.00
Weikert-------------	35	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
3E:					
Berks	55	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.43	Droughty	1.00
Weikert	35	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
4E:					
Berks	45	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.43	Droughty	1.00
Gilpin	40	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.30	Too acid	1.00
4F:					
Berks	65	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.43	Droughty	1.00
Gilpin	30	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.30	Too acid	1.00
5D:					
Bland	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	0.50	Slope	1.00
				Too acid	0.85
		Droughty	0.31		
Rock outcrop	15	Not rated		Not rated	
5E:					
Bland	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	0.50	Slope	1.00
				Too acid	0.85
		Droughty	0.31		
Rock outcrop	15	Not rated		Not rated	
6B:					
Bland	85	Somewhat limited		Very limited	
		Slow water movement	0.50	Low adsorption	1.00
				Too acid	0.85
		Droughty	0.31	Slow water movement	0.37
		Too acid	0.27		

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
6C:					
Bland---------------	85	Somewhat limited		Very limited	
		Slow water movement	0.50	Low adsorption	1.00
		Slope	0.37	Too acid	0.85
		Droughty	0.31	Slow water movement	0.37
6D:					
Bland---------------	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	0.50	Slope	1.00
		Droughty	0.31	Too acid	0.85
7C:					
Botetourt-----------	95	Very limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Slope	0.37	Slope	0.37
		Too acid	0.02	Too acid	0.07
8D:					
Brushy--------------	75	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Droughty	1.00	Low adsorption	1.00
		Depth to bedrock	0.95	Slope	1.00
8E:					
Brushy--------------	80	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Droughty	1.00	Low adsorption	1.00
		Depth to bedrock	0.95	Slope	1.00
9D:					
Calvin--------------	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.89	Slope	1.00
		Too acid	0.32	Too acid	0.91
9E:					
Calvin--------------	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.89	Slope	1.00
		Too acid	0.32	Too acid	0.91
10D:					
Calvin--------------	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.89	Slope	1.00
		Large stones content	0.47	Too acid	0.91
10E:					
Calvin--------------	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.89	Slope	1.00
		Large stones content	0.47	Too acid	0.91

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
11C:					
Carbo	85	Very limited		Very limited	
		Slow water movement	1.00	Low adsorption	1.00
		Slope	0.37	Slow water movement	1.00
		Droughty	0.29	Slope	0.37
11D:					
Carbo	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	1.00	Slope	1.00
		Droughty	0.29	Slow water movement	1.00
11E:					
Carbo	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	1.00	Slope	1.00
		Droughty	0.29	Slow water movement	1.00
11F:					
Carbo	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	1.00	Slope	1.00
		Droughty	0.29	Slow water movement	1.00
12D:					
Carbo	80	Very limited		Very limited	
		Slow water movement	1.00	Low adsorption	1.00
		Slope	1.00	Slow water movement	1.00
		Droughty	0.29	Slope	1.00
Rock outcrop	15	Not rated		Not rated	
12E:					
Carbo	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Slow water movement	1.00	Slope	1.00
		Droughty	0.29	Slow water movement	1.00
Rock outcrop	15	Not rated		Not rated	
13E:					
Carbo	65	Very limited		Very limited	
		Slow water movement	1.00	Low adsorption	1.00
		Slope	1.00	Slow water movement	1.00
		Droughty	0.29	Slope	1.00
Rock outcrop	20	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
14C:					
Cedarcreek----------	50	Very limited		Very limited	
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Too acid	0.73	Too acid	1.00
		Large stones content	0.47	Slope	0.16
Alticrest-----------	30	Somewhat limited		Very limited	
		Droughty	0.77	Low adsorption	1.00
		Too acid	0.50	Too acid	0.99
		Large stones content	0.47	Droughty	0.77
Rock outcrop--------	15	Not rated		Not rated	
14E:					
Cedarcreek----------	50	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Large stones on the surface	1.00	Slope	1.00
		Too acid	0.73	Too acid	1.00
Alticrest-----------	30	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.77	Slope	1.00
		Too acid	0.50	Too acid	0.99
Rock outcrop--------	15	Not rated		Not rated	
15C:					
Cedarcreek----------	80	Very limited		Very limited	
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Too acid	0.73	Too acid	1.00
		Large stones content	0.47	Slope	0.01
Rock outcrop--------	15	Not rated		Not rated	
15D:					
Cedarcreek----------	80	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Large stones on the surface	1.00	Slope	1.00
		Too acid	0.73	Too acid	1.00
Rock outcrop--------	15	Not rated		Not rated	
15E:					
Cedarcreek----------	80	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Large stones on the surface	1.00	Slope	1.00
		Too acid	0.73	Too acid	1.00
Rock outcrop--------	15	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
16D:					
Chiswell------------	60	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Litz----------------	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.91	Slope	1.00
		Depth to bedrock	0.80	Too acid	0.99
16E:					
Chiswell------------	60	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Litz----------------	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.91	Slope	1.00
		Depth to bedrock	0.80	Too acid	0.99
16F:					
Chiswell------------	60	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Litz----------------	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.91	Slope	1.00
		Depth to bedrock	0.80	Too acid	0.99
17B:					
Coursey-------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.86	Too acid	1.00
		Too acid	0.73	Depth to saturated zone	0.86
18B:					
Craigsville---------	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Filtering capacity	0.99
		Too acid	0.50	Too acid	0.99
19D:					
Drypond-------------	65	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Rock outcrop--------	25	Not rated		Not rated	
19E:					
Drypond-------------	65	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
19E:					
Rock outcrop--------	25	Not rated		Not rated	
20B:					
Frederick-----------	90	Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42
20C:					
Frederick-----------	90	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.42
		Too acid	0.11	Slope	0.37
20D:					
Frederick-----------	95	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
20E:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
20F:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
21B:					
Frederick-----------	90	Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42
21C:					
Frederick-----------	90	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.42
		Too acid	0.11	Slope	0.37
21D:					
Frederick-----------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
21E:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
21F:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
22B:					
Frederick-----------	90	Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42
22C:					
Frederick-----------	90	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.42
		Too acid	0.11	Slope	0.37

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
22D:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
22E:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
23C:					
Gilpin--------------	50	Somewhat limited		Very limited	
		Too acid	0.73	Low adsorption	1.00
		Slope	0.37	Too acid	1.00
		Droughty	0.30	Slope	0.37
Berks---------------	35	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Too acid	0.43	Droughty	1.00
		Slope	0.37	Too acid	0.99
23D:					
Gilpin--------------	50	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.30	Too acid	1.00
Berks---------------	35	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.43	Droughty	1.00
24C:					
Grimsley------------	90	Somewhat limited		Very limited	
		Slope	0.63	Too acid	0.99
		Too acid	0.50	Slope	0.63
		Large stones content	0.47	Droughty	0.19
24D:					
Grimsley------------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.50	Too acid	0.99
		Large stones content	0.47	Droughty	0.19
24E:					
Grimsley------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.50	Too acid	0.99
		Large stones content	0.47	Droughty	0.19
25D:					
Grimsley------------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.50	Too acid	0.99
		Large stones content	0.47	Droughty	0.19

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
25D:					
Cedarcreek	30	Very limited		Very limited	
		Large stones on the surface	1.00	Large stones on the surface	1.00
		Slope	1.00	Too acid	1.00
		Too acid	0.73	Slope	1.00
Berks	25	Very limited		Very limited	
		Droughty	1.00	Low adsorption	1.00
		Slope	1.00	Droughty	1.00
		Too acid	0.43	Slope	1.00
25E:					
Grimsley	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.50	Too acid	0.99
		Large stones content	0.47	Droughty	0.19
Cedarcreek	35	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Large stones on the surface	1.00	Slope	1.00
		Too acid	0.73	Too acid	1.00
Berks	20	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.43	Droughty	1.00
26B:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Too acid	0.73	Too acid	1.00
26C:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Too acid	0.73	Too acid	1.00
		Slope	0.37	Slope	0.37
26D:					
Groseclose	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Slow water movement	1.00
		Too acid	0.73	Too acid	1.00
26E:					
Groseclose	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Slow water movement	1.00
		Too acid	0.73	Too acid	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
27B:					
Guernsey------------	85	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
		Slow water movement	0.81	Slow water movement	0.68
		Too acid	0.08	Too acid	0.31
27C:					
Guernsey------------	85	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
		Slow water movement	0.81	Slow water movement	0.68
		Slope	0.37	Slope	0.37
28C:					
Lily----------------	85	Somewhat limited		Very limited	
		Too acid	0.73	Low adsorption	1.00
		Droughty	0.65	Too acid	1.00
		Slope	0.37	Droughty	0.65
28D:					
Lily----------------	95	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.65	Too acid	1.00
28E:					
Lily----------------	95	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.65	Too acid	1.00
28F:					
Lily----------------	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.65	Too acid	1.00
29D:					
Lily----------------	80	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.65	Too acid	1.00
29E:					
Lily----------------	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Too acid	0.73	Slope	1.00
		Droughty	0.65	Too acid	1.00
30C:					
Madsheep------------	85	Somewhat limited		Very limited	
		Droughty	0.99	Low adsorption	1.00
		Depth to bedrock	0.84	Droughty	0.99
		Too acid	0.37	Too acid	0.96

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
30D:					
Madsheep------------	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.99	Slope	1.00
		Depth to bedrock	0.84	Droughty	0.99
31E:					
Madsheep------------	95	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	0.99	Slope	1.00
		Depth to bedrock	0.84	Droughty	0.99
32A:					
Melvin--------------	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
33:					
Mine Tipples--------	8	Not rated		Not rated	
Mine Dumps----------	55	Not rated		Not rated	
Mine Tailings-------	35	Not rated		Not rated	
34B:					
Murrill-------------	95	Somewhat limited		Somewhat limited	
		Too acid	0.32	Too acid	0.91
34C:					
Murrill-------------	95	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.91
		Too acid	0.32	Slope	0.37
34D:					
Murrill-------------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.32	Too acid	0.91
35A:					
Newark--------------	45	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	0.60	Flooding	1.00
		Too acid	0.01	Too acid	0.01
Lindside------------	40	Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Flooding	1.00
		Flooding	0.60	Depth to saturated zone	0.95
36F:					
Newbern-------------	65	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Low adsorption	1.00
Rock outcrop--------	30	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
37C:					
Oriskany------------	90	Somewhat limited		Very limited	
		Too acid	0.62	Too acid	1.00
		Slope	0.37	Slope	0.37
37D:					
Oriskany------------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.62	Too acid	1.00
38C:					
Oriskany------------	90	Somewhat limited		Very limited	
		Too acid	0.62	Too acid	1.00
		Large stones content	0.47	Slope	0.37
		Slope	0.37		
38D:					
Oriskany------------	95	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.62	Too acid	1.00
		Large stones content	0.47		
38E:					
Oriskany------------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Too acid	1.00
		Too acid	0.62		
39D:					
Paddyknob-----------	75	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Slope	1.00
				Too acid	1.00
		Droughty	1.00		
Rock outcrop--------	20	Not rated		Not rated	
39E:					
Paddyknob-----------	70	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Large stones content	1.00	Slope	1.00
				Too acid	1.00
		Droughty	1.00		
Rock outcrop--------	25	Not rated		Not rated	
40D:					
Paddyknob-----------	85	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Filtering capacity	0.99	Too acid	1.00

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
40E:					
Paddyknob	90	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Filtering capacity	0.99	Too acid	1.00
41A:					
Philo	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
		Too acid	0.32	Too acid	0.91
42B:					
Pisgah	95	Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42
42C:					
Pisgah	95	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.42
		Too acid	0.11	Slope	0.37
43B:					
Pisgah	95	Somewhat limited		Somewhat limited	
		Too acid	0.11	Too acid	0.42
43C:					
Pisgah	95	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.42
		Too acid	0.11	Slope	0.37
44:					
Pits, quarry	100	Not rated		Not rated	
45A:					
Pope	85	Somewhat limited		Somewhat limited	
		Too acid	0.22	Too acid	0.77
				Flooding	0.40
46C:					
Poplimento	45	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Too acid	0.77
		Slope	0.37	Slow water movement	0.37
		Too acid	0.22	Slope	0.37
Westmoreland	40	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.42
		Too acid	0.11	Slope	0.37
46D:					
Poplimento	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Too acid	0.77
		Too acid	0.22	Slow water movement	0.37

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
46D:					
Westmoreland	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
47A:					
Purdy	85	Very limited		Very limited	
		Slow water movement	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
48B:					
Timberville	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Too acid	0.11	Too acid	0.42
49B:					
Tumbling	90	Somewhat limited		Somewhat limited	
		Low adsorption	0.48	Too acid	0.85
		Large stones content	0.47	Low adsorption	0.07
		Too acid	0.27		
49C:					
Tumbling	90	Somewhat limited		Somewhat limited	
		Low adsorption	0.48	Too acid	0.85
		Large stones content	0.47	Slope	0.37
		Slope	0.37	Low adsorption	0.07
50:					
Udorthents	45	Not rated		Not rated	
Urban land	30	Not rated		Not rated	
51D:					
Wallen	65	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Droughty	1.00	Low adsorption	1.00
		Large stones content	1.00	Slope	1.00
Rock outcrop	25	Not rated		Not rated	
51E:					
Wallen	65	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Droughty	1.00	Low adsorption	1.00
		Large stones content	1.00	Slope	1.00
Rock outcrop	25	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
52C:					
Wallen	90	Very limited		Very limited	
		Droughty	1.00	Droughty	1.00
		Depth to bedrock	0.90	Low adsorption	1.00
		Large stones content	0.47	Too acid	0.96
52D:					
Wallen	90	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Droughty	1.00	Low adsorption	1.00
		Depth to bedrock	0.90	Slope	1.00
52E:					
Wallen	90	Very limited		Very limited	
		Slope	1.00	Droughty	1.00
		Droughty	1.00	Low adsorption	1.00
		Depth to bedrock	0.90	Slope	1.00
53E:					
Westmoreland	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
Poplimento	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Too acid	0.77
		Too acid	0.22	Slow water movement	0.37
Berks	15	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.43	Droughty	1.00
53F:					
Westmoreland	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.11	Too acid	0.42
Poplimento	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Too acid	0.77
		Too acid	0.22	Slow water movement	0.37
Berks	20	Very limited		Very limited	
		Slope	1.00	Low adsorption	1.00
		Droughty	1.00	Slope	1.00
		Too acid	0.43	Droughty	1.00
54A:					
Wolfgap	85	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
W:					
Water	100	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part II

(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	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
1A:					
Allegheny	85	Somewhat limited		Very limited	
		Too acid	0.21	Seepage	1.00
				Too acid	0.21
1B:					
Allegheny	85	Somewhat limited		Very limited	
		Too steep for surface application	0.32	Seepage	1.00
				Too acid	0.21
		Too acid	0.21		
2C:					
Alticrest	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too acid	0.99
		Too acid	0.99		
		Droughty	0.77		
2D:					
Alticrest	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too steep for surface application	1.00
		Too steep for sprinkler application	1.00		
		Too acid	0.99		
2E:					
Alticrest	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too steep for surface application	1.00
		Too steep for sprinkler application	1.00		
		Too acid	0.99		
3C:					
Berks	50	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Seepage	1.00
				Too acid	0.99
		Too acid	0.99		
Weikert	35	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too acid	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
3D:					
Berks	50	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Droughty	1.00	Seepage	1.00
Weikert	35	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
3E:					
Berks	55	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Droughty	1.00	Seepage	1.00
Weikert	35	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
4E:					
Berks	45	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Droughty	1.00	Seepage	1.00
Gilpin	40	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Seepage	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
4F:					
Berks	65	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	
		Droughty	1.00	Seepage	1.00
Gilpin	30	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Seepage	1.00
5D:					
Bland	80	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.85	Seepage	1.00
					1.00
Rock outcrop	15	Not rated		Not rated	
5E:					
Bland	80	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.85	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
6B:					
Bland	85	Somewhat limited		Very limited	
		Too acid	0.85	Depth to bedrock	1.00
		Slow water movement	0.37	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.85
6C:					
Bland	85	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too acid	0.85	Seepage	1.00
		Too steep for sprinkler application	0.60	Too steep for surface application	0.94

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
6D:					
Bland	85	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.85	Seepage	1.00
7C:					
Botetourt	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too steep for sprinkler application	0.60	Too steep for surface application	0.94
					0.94
8D:					
Brushy	75	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
8E:					
Brushy	80	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
9D:					
Calvin	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too steep for surface application	1.00
		Too steep for sprinkler application	1.00		
		Too acid	0.91		
9E:					
Calvin	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too steep for surface application	1.00
		Too steep for sprinkler application	1.00		
		Too acid	0.91		

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
10D:					
Calvin	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	0.91	Too steep for surface application	1.00
10E:					
Calvin	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	0.91	Too steep for surface application	1.00
11C:					
Carbo	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	0.60	Too steep for surface application	0.94
11D:					
Carbo	90	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Seepage	1.00
11E:					
Carbo	90	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Seepage	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
11F:					
Carbo	90	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Seepage	1.00
12D:					
Carbo	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
Rock outcrop	15	Not rated		Not rated	
12E:					
Carbo	75	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
13E:					
Carbo	65	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
Rock outcrop	20	Not rated		Not rated	
14C:					
Cedarcreek	50	Very limited		Very limited	
		Large stones on the surface	1.00	Stone content	1.00
		Too acid	1.00	Seepage	1.00
		Too steep for surface application	1.00	Too acid	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
14C:					
Alticrest-----------	30	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too acid	0.99
		Too acid	0.99		
		Droughty	0.77		
Rock outcrop--------	15	Not rated		Not rated	
14E:					
Cedarcreek----------	50	Very limited		Very limited	
		Large stones on the surface	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Stone content	1.00
				Seepage	1.00
		Too steep for sprinkler application	1.00		
Alticrest-----------	30	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too steep for surface application	1.00
		Too steep for sprinkler application	1.00		
		Too acid	0.99		
Rock outcrop--------	15	Not rated		Not rated	
15C:					
Cedarcreek----------	80	Very limited		Very limited	
		Large stones on the surface	1.00	Stone content	1.00
				Seepage	1.00
		Too acid	1.00	Too acid	1.00
		Too steep for surface application	1.00		
Rock outcrop--------	15	Not rated		Not rated	
15D:					
Cedarcreek----------	80	Very limited		Very limited	
		Large stones on the surface	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Stone content	1.00
				Seepage	1.00
		Too steep for sprinkler application	1.00		
Rock outcrop--------	15	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
15E:					
Cedarcreek	80	Very limited		Very limited	
		Large stones on the surface	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Stone content	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
16D:					
Chiswell	60	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Seepage	1.00
Litz	35	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.99	Seepage	1.00
16E:					
Chiswell	60	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Seepage	1.00
Litz	35	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.99	Seepage	1.00
16F:					
Chiswell	60	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Seepage	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
16F:					
Litz	35	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.99	Seepage	1.00
17B:					
Coursey	85	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Depth to saturated zone	0.86	Too acid	1.00
		Too steep for surface application	0.32	Depth to saturated zone	0.86
18B:					
Craigsville	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Filtering capacity	0.99	Seepage	1.00
		Too acid	0.99	Cobble content	1.00
19D:					
Drypond	65	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
Rock outcrop	25	Not rated		Not rated	
19E:					
Drypond	65	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
Rock outcrop	25	Not rated		Not rated	
20B:					
Frederick	90	Somewhat limited		Very limited	
		Too acid	0.42	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.42

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
20C:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	0.60	Too steep for surface application	0.94
		Too acid	0.42	Too acid	0.42
20D:					
Frederick-----------	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.42	Too acid	0.42
20E:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.42	Too acid	0.42
20F:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.42	Too acid	0.42
21B:					
Frederick-----------	90	Somewhat limited		Very limited	
		Too acid	0.42	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.42
21C:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	0.60	Too steep for surface application	0.94
		Too acid	0.42	Too acid	0.42

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
21D:					
Frederick-----------	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.42	Too acid	0.42
21E:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.42	Too acid	0.42
21F:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.42	Too acid	0.42
22B:					
Frederick-----------	90	Somewhat limited		Very limited	
		Too acid	0.42	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.42
22C:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	0.60	Too steep for surface application	0.94
		Too acid	0.42	Too acid	0.42
22D:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.42	Too acid	0.42

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
22E:					
Frederick-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.42	Too acid	0.42
23C:					
Gilpin--------------	50	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too acid	1.00	Seepage	1.00
		Too steep for sprinkler application	0.60	Too acid	1.00
Berks---------------	35	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.99	Too acid	0.99
23D:					
Gilpin--------------	50	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Seepage	1.00
Berks---------------	35	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Droughty	1.00	Seepage	1.00
24C:					
Grimsley------------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.99	Too steep for surface application	1.00
		Too steep for sprinkler application	0.78	Too acid	0.99

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
24D:					
Grimsley------------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.99	Too acid	0.99
24E:					
Grimsley------------	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.99	Too acid	0.99
25D:					
Grimsley------------	40	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.99	Too acid	0.99
Cedarcreek----------	30	Very limited		Very limited	
		Large stones on the surface	1.00	Stone content	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
Berks---------------	25	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Droughty	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
25E:					
Grimsley------------	40	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.99	Too acid	0.99

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
25E:					
Cedarcreek	35	Very limited		Very limited	
		Large stones on the surface	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Stone content	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
Berks	20	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Droughty	1.00	Seepage	1.00
26B:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
		Too steep for surface application	0.32		
26C:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Too acid	1.00
		Too acid	1.00	Too steep for surface application	0.94
26D:					
Groseclose	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too acid	1.00
26E:					
Groseclose	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too acid	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
27B:					
Guernsey------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Seepage	1.00
		Slow water movement	0.68	Depth to saturated zone	0.95
		Too steep for surface application	0.32	Too acid	0.31
27C:					
Guernsey------------	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Depth to saturated zone	0.95	Depth to saturated zone	0.95
		Slow water movement	0.68	Too steep for surface application	0.94
28C:					
Lily----------------	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	1.00	Depth to bedrock	1.00
		Droughty	0.65	Too acid	1.00
28D:					
Lily----------------	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep for surface application	1.00
28E:					
Lily----------------	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep for surface application	1.00
28F:					
Lily----------------	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep for surface application	1.00

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
29D:					
Lily	80	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep for surface application	1.00
29E:					
Lily	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep for surface application	1.00
30C:					
Madsheep	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Droughty	0.99	Depth to bedrock	1.00
		Too acid	0.96	Too acid	0.96
30D:					
Madsheep	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Droughty	0.99	Too steep for surface application	1.00
31E:					
Madsheep	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Droughty	0.99	Too steep for surface application	1.00
32A:					
Melvin	85	Very limited		Very limited	
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Ponding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
33:					
Mine Tipples	8	Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
34B:					
Murrill	95	Somewhat limited		Very limited	
		Too acid	0.91	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.91
34C:					
Murrill	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.91	Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.91
34D:					
Murrill	90	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.91	Too acid	0.91
35A:					
Newark	45	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.60	Depth to saturated zone	1.00
		Too acid	0.01	Seepage	1.00
Lindside	40	Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Flooding	1.00
		Flooding	0.60	Seepage	1.00
				Depth to saturated zone	0.95
36F:					
Newbern	65	Very limited		Very limited	
		Droughty	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Seepage	1.00
Rock outcrop	30	Not rated		Not rated	
37C:					
Oriskany	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	1.00	Stone content	1.00
		Too steep for sprinkler application	0.60	Too acid	1.00

Table 7.—Agricultural Waste Management, Part II--Continu=ed

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
37D:					
Oriskany-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Stone content	1.00
38C:					
Oriskany-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	1.00	Stone content	1.00
		Too steep for sprinkler application	0.60	Too acid	1.00
38D:					
Oriskany-----------	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Stone content	1.00
38E:					
Oriskany-----------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Stone content	1.00
39D:					
Paddyknob----------	75	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too steep for surface application	1.00
Rock outcrop--------	20	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
39E:					
Paddyknob	70	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too steep for surface application	1.00
		Too steep for sprinkler application	1.00		
		Too acid	1.00		
Rock outcrop	25	Not rated		Not rated	
40D:					
Paddyknob	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too steep for surface application	1.00
		Too steep for sprinkler application	1.00		
		Too acid	1.00		
40E:					
Paddyknob	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Depth to bedrock	1.00
				Too steep for surface application	1.00
		Too steep for sprinkler application	1.00		
		Too acid	1.00		
41A:					
Philo	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.95	Seepage	1.00
				Depth to saturated zone	0.95
		Too acid	0.91		
42B:					
Pisgah	95	Somewhat limited		Very limited	
		Too acid	0.42	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.42
42C:					
Pisgah	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.42
		Too acid	0.42		

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
43B:					
Pisgah	95	Somewhat limited		Very limited	
		Too acid	0.42	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.42
43C:					
Pisgah	95	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	0.60	Too steep for surface application	0.94
		Too acid	0.42	Too acid	0.42
44:					
Pits, quarry	100	Not rated		Not rated	
45A:					
Pope	85	Somewhat limited		Very limited	
		Too acid	0.77	Seepage	1.00
				Too acid	0.77
				Flooding	0.40
46C:					
Poplimento	45	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.77	Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.77
Westmoreland	40	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	0.60	Too steep for surface application	0.94
		Too acid	0.42	Too acid	0.42
46D:					
Poplimento	60	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.77	Too acid	0.77

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
46D:					
Westmoreland--------	35	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.42	Too acid	0.42
47A:					
Purdy---------------	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Too acid	0.07
48B:					
Timberville---------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Too acid	0.42	Seepage	1.00
		Too steep for surface application	0.08	Too acid	0.42
49B:					
Tumbling------------	90	Somewhat limited		Very limited	
		Too acid	0.85	Seepage	1.00
		Low adsorption	0.48	Too acid	0.85
		Too steep for surface application	0.32	Low adsorption	0.48
49C:					
Tumbling------------	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.85	Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.85
50:					
Udorthents----------	45	Not rated		Not rated	
Urban land----------	30	Not rated		Not rated	
51D:					
Wallen--------------	65	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
Rock outcrop--------	25	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
51E:					
Wallen	65	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
Rock outcrop	25	Not rated		Not rated	
52C:					
Wallen	90	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too acid	0.96	Too acid	0.96
52D:					
Wallen	90	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
52E:					
Wallen	90	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
53E:					
Westmoreland	60	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.42	Too acid	0.42
Poplimento	20	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.77	Too acid	0.77

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
53E:					
Berks	15	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Droughty	1.00	Seepage	1.00
53F:					
Westmoreland	45	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.42	Too acid	0.42
Poplimento	30	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Seepage	1.00
		Too acid	0.77	Too acid	0.77
Berks	20	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Droughty	1.00	Seepage	1.00
54A:					
Wolfgap	85	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
				Seepage	1.00
W:					
Water	100	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part III

(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	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
1A:					
Allegheny	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.21
		Too acid	0.03		
1B:					
Allegheny	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too steep for surface application	0.32
		Slope	0.12		
		Too acid	0.03	Too acid	0.21
2C:					
Alticrest	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32		
				Too acid	0.99
2D:					
Alticrest	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32		
				Too steep for sprinkler irrigation	1.00
2E:					
Alticrest	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32		
				Too steep for sprinkler irrigation	1.00
3C:					
Berks	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.62		
				Too acid	0.99

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
3C:					
Weikert	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too acid	1.00
3D:					
Berks	50	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
Weikert	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
3E:					
Berks	55	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
Weikert	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
4E:					
Berks	45	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
4E:					
Gilpin	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
4F:					
Berks	65	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
Gilpin	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
5D:					
Bland	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
Rock outcrop	15	Not rated		Not rated	
5E:					
Bland	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
Rock outcrop	15	Not rated		Not rated	
6B:					
Bland	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	0.85
		Slope	0.12	Too steep for surface application	0.32

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
6C:					
Bland	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
6D:					
Bland	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
7C:					
Botetourt	95	Very limited		Very limited	
		Depth to saturated zone	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99
		Slope	1.00	Too steep for sprinkler irrigation	0.94
8D:					
Brushy	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
8E:					
Brushy	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
9D:					
Calvin	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
9E:					
Calvin	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
10D:					
Calvin	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
10E:					
Calvin	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
11C:					
Carbo	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slope	1.00	Slow water movement	0.96
11D:					
Carbo	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
11E:					
Carbo	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
11F:					
Carbo	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
12D:					
Carbo	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	1.00
Rock outcrop	15	Not rated		Not rated	
12E:					
Carbo	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
Rock outcrop	15	Not rated		Not rated	
13E:					
Carbo	65	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	1.00
Rock outcrop	20	Not rated		Not rated	
14C:					
Cedarcreek	50	Very limited		Very limited	
		Stone content	1.00	Large stones on the surface	1.00
		Slope	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep for surface application	1.00
Alticrest	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too acid	0.99

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
14C:					
Rock outcrop	15	Not rated		Not rated	
14E:					
Cedarcreek	50	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Stone content	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
Alticrest	30	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
Rock outcrop	15	Not rated		Not rated	
15C:					
Cedarcreek	80	Very limited		Very limited	
		Stone content	1.00	Large stones on the surface	1.00
		Slope	1.00	Too acid	1.00
		Slow water movement	0.62	Too steep for surface application	1.00
Rock outcrop	15	Not rated		Not rated	
15D:					
Cedarcreek	80	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Stone content	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
Rock outcrop	15	Not rated		Not rated	
15E:					
Cedarcreek	80	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Stone content	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
Rock outcrop	15	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
16D:					
Chiswell	60	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
Litz	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
16E:					
Chiswell	60	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
Litz	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
16F:					
Chiswell	60	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
Litz	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
17B:					
Coursey	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Too acid	1.00
		Slow water movement	1.00	Depth to saturated zone	0.86
		Too acid	0.14	Too steep for surface application	0.32
18B:					
Craigsville	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Stone content	1.00	Filtering capacity	0.99
		Cobble content	0.99	Too acid	0.99
19D:					
Drypond	65	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too acid	0.14	Too steep for sprinkler irrigation	1.00
Rock outcrop	25	Not rated		Not rated	
19E:					
Drypond	65	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too acid	0.14	Too steep for sprinkler irrigation	1.00
Rock outcrop	25	Not rated		Not rated	
20B:					
Frederick	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.42
		Slope	0.12	Too steep for surface application	0.32
20C:					
Frederick	90	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.42

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
20D:					
Frederick-----------	95	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42
20E:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42
20F:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42
21B:					
Frederick-----------	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.42
		Slope	0.12	Too steep for surface application	0.32
21C:					
Frederick-----------	90	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.42
21D:					
Frederick-----------	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
			1.00	Too acid	0.42

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
21E:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42
21F:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00		
			1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42
22B:					
Frederick-----------	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.42
		Slope	0.12	Too steep for surface application	0.32
22C:					
Frederick-----------	90	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.42
22D:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42
22E:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
23C:					
Gilpin	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00		
				Too acid	1.00
Berks	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.62		
				Too acid	0.99
23D:					
Gilpin	50	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00		
				Too steep for sprinkler irrigation	1.00
Berks	35	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62		
				Too steep for sprinkler irrigation	1.00
24C:					
Grimsley	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32		
				Too steep for sprinkler irrigation	1.00
				Too acid	0.99
24D:					
Grimsley	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32		
				Too steep for sprinkler irrigation	1.00
				Too acid	0.99

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
24E:					
Grimsley	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
				Too acid	0.99
25D:					
Grimsley	40	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
				Too acid	0.99
Cedarcreek	30	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Stone content	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too acid	1.00
Berks	25	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
25E:					
Grimsley	40	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
				Too acid	0.99
Cedarcreek	35	Very limited		Very limited	
		Slope	1.00	Large stones on the surface	1.00
		Stone content	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
25E:					
Berks	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
26B:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.14	Slow water movement	0.96
		Slope	0.12	Too steep for surface application	0.32
26C:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too acid	1.00
		Too acid	0.14	Slow water movement	0.96
26D:					
Groseclose	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
		Too acid	0.14	Too acid	1.00
26E:					
Groseclose	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
		Too acid	0.14	Too acid	1.00
27B:					
Guernsey	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.95
		Depth to saturated zone	1.00	Slow water movement	0.50
		Slope	0.12	Too steep for surface application	0.32

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
27C:					
Guernsey	85	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slope	1.00	Too steep for sprinkler irrigation	0.94
28C:					
Lily	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too acid	1.00
28D:					
Lily	95	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
28E:					
Lily	95	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
28F:					
Lily	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
29D:					
Lily	80	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
29E:					
Lily	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
30C:					
Madsheep	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too acid	0.96
30D:					
Madsheep	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
31E:					
Madsheep	95	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
32A:					
Melvin	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	1.00
33:					
Mine Tipples	8	Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated	
34B:					
Murrill	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.91
		Slope	0.12	Too steep for surface application	0.32
		Too acid	0.03		

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
34C:					
Murrill	95	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
		Too acid	0.03	Too acid	0.91
34D:					
Murrill	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
		Too acid	0.03	Too acid	0.91
35A:					
Newark	45	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Flooding	0.60
		Flooding	0.60	Too acid	0.01
Lindside	40	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slow water movement	1.00	Flooding	0.60
		Flooding	0.60		
36F:					
Newbern	65	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
Rock outcrop	30	Not rated		Not rated	
37C:					
Oriskany	90	Very limited		Very limited	
		Stone content	1.00	Too steep for surface application	1.00
		Slope	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	0.94

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
37D:					
Oriskany------------	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Stone content	1.00	Too steep for sprinkler irrigation	1.00
		Slow water movement	0.32	Too acid	1.00
38C:					
Oriskany------------	90	Very limited		Very limited	
		Stone content	1.00	Too steep for surface application	1.00
		Slope	1.00	Too acid	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	0.94
38D:					
Oriskany------------	95	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Stone content	1.00	Too steep for sprinkler irrigation	1.00
		Slow water movement	0.32	Too acid	1.00
38E:					
Oriskany------------	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Stone content	1.00	Too steep for sprinkler irrigation	1.00
		Slow water movement	0.32	Too acid	1.00
39D:					
Paddyknob-----------	75	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too acid	0.14	Too steep for sprinkler irrigation	1.00
Rock outcrop--------	20	Not rated		Not rated	
39E:					
Paddyknob-----------	70	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too acid	0.14	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
39E:					
Rock outcrop	25	Not rated		Not rated	
40D:					
Paddyknob	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too acid	0.14	Too steep for sprinkler irrigation	1.00
40E:					
Paddyknob	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Too acid	0.14	Too steep for sprinkler irrigation	1.00
41A:					
Philo	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slow water movement	1.00	Too acid	0.91
42B:					
Pisgah	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.42
		Slope	0.12	Too steep for surface application	0.32
42C:					
Pisgah	95	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.42
43B:					
Pisgah	95	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.42
		Slope	0.12	Too steep for surface application	0.32

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
43C:					
Pisgah	95	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.42
44:					
Pits, quarry	100	Not rated		Not rated	
45A:					
Pope	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.62	Too acid	0.77
		Too acid	0.14		
46C:					
Poplimento	45	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.77
Westmoreland	40	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.42
46D:					
Poplimento	60	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.77
Westmoreland	35	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
47A:					
Purdy	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	0.99
48B:					
Timberville	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	1.00	Too acid	0.42
		Too acid	0.14	Too steep for surface application	0.08
49B:					
Tumbling	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.85
		Slope	0.12	Low adsorption	0.48
				Too steep for surface application	0.32
49C:					
Tumbling	90	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Slope	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.85
50:					
Udorthents	45	Not rated		Not rated	
Urban land	30	Not rated		Not rated	
51D:					
Wallen	65	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
Rock outcrop	25	Not rated		Not rated	
51E:					
Wallen	65	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
51E:					
Rock outcrop	25	Not rated		Not rated	
52C:					
Wallen	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too acid	0.96
52D:					
Wallen	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
52E:					
Wallen	90	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
53E:					
Westmoreland	60	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42
Poplimento	20	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.77
Berks	15	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
53F:					
Westmoreland--------	45	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.42
Poplimento----------	30	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.77
Berks---------------	20	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	0.62	Too steep for sprinkler irrigation	1.00
54A:					
Wolfgap-------------	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Flooding	0.60
		Flooding	0.60		
W:					
Water---------------	100	Not rated		Not rated	

Table 8.—Forestland Productivity

(Absence of an entry indicates that information was not available)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
1A:				
Allegheny	black oak	78	57	black walnut, eastern white pine, northern red oak, white ash, white oak, yellow-poplar
	northern red oak	85	65	
	shortleaf pine	80	129	
	Virginia pine	72	114	
	white oak	70	---	
	yellow-poplar	93	100	
1B:				
Allegheny	black oak	78	57	black walnut, eastern white pine, northern red oak, white ash, white oak, yellow-poplar
	northern red oak	85	65	
	shortleaf pine	80	129	
	Virginia pine	72	114	
	white oak	70	---	
	yellow-poplar	93	100	
2C:				
Alticrest	chestnut oak	55	39	eastern white pine
	shortleaf pine	60	86	
	Virginia pine	60	86	
2D:				
Alticrest	chestnut oak	55	39	eastern white pine
	shortleaf pine	60	86	
	Virginia pine	60	86	
2E:				
Alticrest	chestnut oak	55	39	eastern white pine
	shortleaf pine	60	86	
	Virginia pine	60	86	
3C:				
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
Weikert	chestnut oak	50	35	eastern white pine
	northern red oak	55	39	
	scarlet oak	50	---	
	Virginia pine	56	86	
3D:				
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
Weikert	chestnut oak	50	35	eastern white pine
	northern red oak	55	39	
	scarlet oak	50	---	
	Virginia pine	56	86	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
3E:				
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
Weikert	chestnut oak	50	35	eastern white pine
	northern red oak	55	39	
	scarlet oak	50	---	
	Virginia pine	56	86	
4E:				
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
Gilpin	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	white oak	75	---	
	yellow-poplar	85	80	
4F:				
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
Gilpin	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	white oak	75	---	
	yellow-poplar	85	80	
5D:				
Bland	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	70	114	
	yellow-poplar	85	80	
Rock outcrop.				
5E:				
Bland	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	70	114	
	yellow-poplar	85	80	
Rock outcrop.				
6B:				
Bland	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	70	114	
	yellow-poplar	85	80	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
6C:				
Bland	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	70	114	
	yellow-poplar	85	80	
6D:				
Bland	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	70	114	
	yellow-poplar	85	80	
7C:				
Botetourt	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	Virginia pine	65	100	
	yellow-poplar	95	100	
8D:				
Brushy	chestnut oak	70	52	eastern white pine, northern red oak
	northern red oak	75	57	
8E:				
Brushy	chestnut oak	70	52	eastern white pine, northern red oak
	northern red oak	75	57	
9D:				
Calvin	chestnut oak	60	43	eastern white pine, northern red oak
	northern red oak	70	52	
	red maple	55	---	
9E:				
Calvin	chestnut oak	60	43	eastern white pine, northern red oak
	northern red oak	70	52	
	red maple	55	---	
10D:				
Calvin	chestnut oak	60	43	eastern white pine, northern red oak
	northern red oak	70	52	
	red maple	55	---	
10E:				
Calvin	chestnut oak	60	43	eastern white pine, northern red oak
	northern red oak	70	52	
	red maple	55	---	
11C:				
Carbo	eastern redcedar	50	---	black walnut, eastern white pine, northern red oak
	northern red oak	70	52	
	Virginia pine	55	86	
11D:				
Carbo	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	55	86	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
11E:				
Carbo	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	55	86	
11F:				
Carbo	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	55	86	
12D:				
Carbo	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	55	86	
Rock outcrop.				
12E:				
Carbo	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	55	86	
Rock outcrop.				
13E:				
Carbo	eastern redcedar	50	---	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	Virginia pine	55	86	
Rock outcrop.				
14C:				
Cedarcreek	American sycamore	90	100	black locust, eastern white pine, northern red oak, yellow-poplar
	eastern white pine	94	172	
	northern red oak	80	62	
	red maple	75	---	
	yellow-poplar	105	114	
Alticrest	chestnut oak	55	39	eastern white pine
	shortleaf pine	60	86	
	Virginia pine	60	86	
Rock outcrop.				
14E:				
Cedarcreek	American sycamore	90	100	black locust, eastern white pine, northern red oak, yellow-poplar
	eastern white pine	94	172	
	northern red oak	80	62	
	red maple	75	---	
Alticrest	chestnut oak	55	39	eastern white pine
	shortleaf pine	60	86	
	Virginia pine	60	86	
Rock outcrop.				

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
15C:				
Cedarcreek	American sycamore	90	100	black locust, eastern white pine, northern red oak, yellow-poplar
	eastern white pine	94	172	
	northern red oak	80	62	
	red maple	75	---	
Rock outcrop.				
15D:				
Cedarcreek	American sycamore	90	100	black locust, eastern white pine, northern red oak, yellow-poplar
	eastern white pine	94	172	
	northern red oak	80	62	
	red maple	75	---	
Rock outcrop.				
15E:				
Cedarcreek	American sycamore	90	100	black locust, eastern white pine, northern red oak, yellow-poplar
	eastern white pine	94	172	
	northern red oak	80	62	
	red maple	75	---	
Rock outcrop.				
16D:				
Chiswell	chestnut oak	50	35	eastern white pine, northern red oak
	northern red oak	55	39	
	Virginia pine	61	86	
Litz	chestnut oak	60	43	eastern white pine, northern red oak
	northern red oak	70	52	
	Virginia pine	65	100	
16E:				
Chiswell	chestnut oak	50	35	eastern white pine, northern red oak
	northern red oak	55	39	
	Virginia pine	61	86	
Litz	chestnut oak	60	43	eastern white pine, northern red oak
	northern red oak	70	52	
	Virginia pine	65	100	
16F:				
Chiswell	chestnut oak	50	35	eastern white pine, northern red oak
	northern red oak	55	39	
	Virginia pine	61	86	
Litz	chestnut oak	60	43	eastern white pine, northern red oak
	northern red oak	70	52	
	Virginia pine	65	100	
17B:				
Coursey	northern red oak	70	52	eastern white pine, yellow-poplar
	Virginia pine	60	86	
	yellow-poplar	90	86	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
18B:				
Craigsville	eastern white pine	90	172	eastern white pine, yellow-poplar
	northern red oak	80	62	
	yellow-poplar	95	100	
19D:				
Drypond	northern red oak	55	39	eastern white pine
	Virginia pine	45	57	
Rock outcrop.				
19E:				
Drypond	northern red oak	55	39	eastern white pine
	Virginia pine	45	57	
Rock outcrop.				
20B:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
20C:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
20D:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
20E:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
20F:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
21B:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
21C:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
21D:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
21E:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
21F:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
22B:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
22C:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
22D:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	
22E:				
Frederick	black locust	80	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	black walnut	76	57	
	northern red oak	76	57	
	white oak	76	57	
	yellow-poplar	86	86	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
23C:				
Gilpin	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	white oak	75	---	
	yellow-poplar	85	80	
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
23D:				
Gilpin	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	white oak	75	---	
	yellow-poplar	85	80	
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
24C:				
Grimsley	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	red maple	70	---	
	southern red oak	75	57	
	yellow-poplar	90	86	
24D:				
Grimsley	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	red maple	70	---	
	southern red oak	75	57	
	yellow-poplar	90	86	
24E:				
Grimsley	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	red maple	70	---	
	southern red oak	75	57	
	yellow-poplar	90	86	
25D:				
Grimsley	northern red oak	75	57	eastern white pine, northern red oak, yellow-poplar
	red maple	70	---	
	southern red oak	75	57	
	yellow-poplar	90	86	
Cedarcreek	American sycamore	90	100	black locust, eastern white pine, northern red oak, yellow-poplar
	eastern white pine	94	172	
	northern red oak	80	62	
	red maple	75	---	
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
25E:				
Grimsley----------------	northern red oak----	75	57	eastern white pine, northern red oak, yellow-poplar
	red maple-----------	70	---	
	southern red oak----	75	57	
	yellow-poplar-------	90	86	
Cedarcreek--------------	American sycamore---	90	100	black locust, eastern white pine, northern red oak, yellow-poplar
	eastern white pine--	94	172	
	northern red oak----	80	62	
	red maple-----------	75	---	
Berks-------------------	black oak-----------	70	52	black oak, eastern white pine, northern red oak
	chestnut oak--------	60	43	
	northern red oak----	70	52	
	scarlet oak---------	60	---	
	Virginia pine-------	70	114	
26B:				
Groseclose--------------	northern red oak----	85	65	eastern white pine, northern red oak, yellow-poplar
	white oak-----------	85	65	
	yellow-poplar-------	86	86	
26C:				
Groseclose--------------	northern red oak----	85	65	eastern white pine, northern red oak, yellow-poplar
	white oak-----------	85	65	
	yellow-poplar-------	86	86	
26D:				
Groseclose--------------	northern red oak----	85	65	eastern white pine, northern red oak, yellow-poplar
	white oak-----------	85	65	
	yellow-poplar-------	86	86	
26E:				
Groseclose--------------	northern red oak----	85	65	eastern white pine, northern red oak, yellow-poplar
	white oak-----------	85	65	
	yellow-poplar-------	86	86	
27B:				
Guernsey----------------	northern red oak----	78	57	eastern white pine, northern red oak, white ash, white oak, yellow-poplar
	yellow-poplar-------	95	100	
27C:				
Guernsey----------------	northern red oak----	78	57	eastern white pine, northern red oak, white ash, white oak, yellow-poplar
	yellow-poplar-------	95	100	
28C:				
Lily--------------------	black oak-----------	70	52	black oak, eastern white pine, northern red oak
	chestnut oak--------	65	47	
	northern red oak----	70	52	
	scarlet oak---------	65	47	
	shortleaf pine------	63	100	
	Virginia pine-------	80	114	
	white oak-----------	70	52	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
28D:				
Lily	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	65	47	
	northern red oak	70	52	
	scarlet oak	65	47	
	shortleaf pine	63	100	
	Virginia pine	80	114	
	white oak	70	52	
28E:				
Lily	chestnut oak	65	47	chestnut oak, eastern white pine, white oak
	scarlet oak	65	47	
	shortleaf pine	57	---	
	Virginia pine	71	---	
	white oak	70	52	
28F:				
Lily	chestnut oak	65	47	chestnut oak, eastern white pine, white oak
	scarlet oak	65	47	
	shortleaf pine	57	---	
	Virginia pine	71	---	
	white oak	70	52	
29D:				
Lily	chestnut oak	65	47	chestnut oak, eastern white pine
	scarlet oak	65	47	
	shortleaf pine	57	---	
	Virginia pine	71	---	
	white oak	70	52	
29E:				
Lily	chestnut oak	65	47	chestnut oak, eastern white pine
	scarlet oak	65	47	
	shortleaf pine	57	---	
	Virginia pine	71	---	
	white oak	70	52	
30C:				
Madsheep	black cherry	80	57	black cherry, eastern white pine, Norway spruce, red pine
	northern red oak	70	52	
	red spruce	73	143	
30D:				
Madsheep	black cherry	80	57	black cherry, eastern white pine, Norway spruce, red pine
	northern red oak	70	52	
	red spruce	73	143	
31E:				
Madsheep	black cherry	80	57	black cherry, eastern white pine, Norway spruce, red pine
	northern red oak	70	52	
	red spruce	73	143	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
32A:				
Melvin	cherrybark oak	91	114	black willow, eastern cottonwood, pin oak, sweetgum, willow oak
	pin oak	99	100	
	sweetgum	89	100	
33. Mine Tipples, Dumps, and Tailings				
34B:				
Murrill	eastern white pine	80	143	black walnut, eastern white pine, northern red oak, yellow-poplar
	northern red oak	72	57	
	white ash	70	72	
	yellow-poplar	94	100	
34C:				
Murrill	eastern white pine	80	143	black walnut, eastern white pine, northern red oak, yellow-poplar
	northern red oak	72	57	
	white ash	70	72	
	yellow-poplar	94	100	
34D:				
Murrill	eastern white pine	80	143	black walnut, eastern white pine, northern red oak, yellow-poplar
	northern red oak	72	57	
	white ash	70	72	
	yellow-poplar	94	100	
35A:				
Newark	northern red oak	75	57	eastern cottonwood, sweetgum, white ash
	white ash	85	---	
	white oak	75	57	
Lindside	northern red oak	86	65	black oak, black walnut, eastern white pine, northern red oak, white ash, white oak
	white ash	85	57	
	white oak	85	65	
36F:				
Newbern	chestnut oak	50	35	---
	scarlet oak	50	35	
Rock outcrop.				
37C:				
Oriskany	northern red oak	75	57	black walnut, eastern white pine, northern red oak, white oak, yellow-poplar
	red maple	70	---	
	sugar maple	70	---	
	white oak	75	57	
	yellow-poplar	95	100	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
37D:				
Oriskany	northern red oak	75	57	black walnut, eastern white pine, northern red oak, white oak, yellow-poplar
	red maple	70	---	
	sugar maple	70	---	
	white oak	75	57	
	yellow-poplar	95	100	
38C:				
Oriskany	eastern white pine	80	144	black walnut, eastern white pine, northern red oak, white oak, yellow-poplar
	northern red oak	70	52	
	red maple	70	---	
	sugar maple	70	---	
	white oak	70	52	
	yellow-poplar	90	90	
38D:				
Oriskany	eastern white pine	80	144	black walnut, eastern white pine, northern red oak, white oak, yellow-poplar
	northern red oak	70	52	
	red maple	70	---	
	sugar maple	70	---	
	white oak	70	52	
	yellow-poplar	90	90	
38E:				
Oriskany	eastern white pine	80	144	black walnut, eastern white pine, northern red oak, white oak, yellow-poplar
	northern red oak	70	52	
	red maple	70	---	
	sugar maple	70	---	
	white oak	70	52	
	yellow-poplar	90	90	
39D:				
Paddyknob	black cherry	72	57	black cherry, eastern white pine, Norway spruce, red pine
	northern red oak	55	39	
	red spruce	60	143	
Rock outcrop.				
39E:				
Paddyknob	black cherry	72	57	black cherry, eastern white pine, Norway spruce, red pine
	northern red oak	55	39	
	red spruce	60	143	
Rock outcrop.				
40D:				
Paddyknob	black cherry	72	57	black cherry, eastern white pine, Norway spruce, red pine
	northern red oak	55	39	
	red spruce	60	143	
40E:				
Paddyknob	black cherry	72	57	black cherry, eastern white pine, Norway spruce, red pine
	northern red oak	55	39	
	red spruce	60	143	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
41A:				
Philo	black oak	85	65	eastern white pine, yellow-poplar
	northern red oak	86	65	
	white ash	85	114	
	white oak	85	65	
	yellow-poplar	102	114	
42B:				
Pisgah	northern red oak	86	65	black walnut, eastern white pine, northern red oak, yellow-poplar
	sugar maple	---	---	
	yellow-poplar	96	100	
42C:				
Pisgah	northern red oak	86	65	black walnut, eastern white pine, northern red oak, yellow-poplar
	sugar maple	75	---	
	yellow-poplar	96	100	
43B:				
Pisgah	northern red oak	86	65	black walnut, eastern white pine, northern red oak, yellow-poplar
	sugar maple	75	---	
	yellow-poplar	96	100	
43C:				
Pisgah	northern red oak	86	65	black walnut, eastern white pine, northern red oak, yellow-poplar
	sugar maple	75	---	
	yellow-poplar	96	100	
44.				
Pits, quarry				
45A:				
Pope	northern red oak	86	65	black walnut, eastern white pine, northern red oak, white ash, white oak, yellow-poplar
	white oak	80	57	
	yellow-poplar	96	100	
46C:				
Poplimento	northern red oak	80	62	black walnut, eastern white pine, northern red oak, yellow-poplar
	yellow-poplar	90	90	
Westmoreland	northern red oak	75	57	eastern white pine, northern red oak, Virginia pine, yellow-poplar
	yellow-poplar	85	86	
46D:				
Poplimento	northern red oak	80	62	black walnut, eastern white pine, northern red oak, yellow-poplar
	yellow-poplar	90	90	

Table 8.—Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
46D:				
Westmoreland	northern red oak	75	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	yellow-poplar	90	90	
47A:				
Purdy	pin oak	85	57	black willow, eastern cottonwood, pin oak, sweetgum, willow oak
	shortleaf pine	75	114	
	sweetgum	85	86	
	Virginia pine	75	114	
48B:				
Timberville	northern red oak	90	72	black walnut, eastern white pine, northern red oak, yellow-poplar
	yellow-poplar	80	72	
49B:				
Tumbling	eastern white pine	80	143	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	yellow-poplar	90	90	
49C:				
Tumbling	eastern white pine	80	143	eastern white pine, northern red oak, yellow-poplar
	northern red oak	70	52	
	yellow-poplar	90	90	
50.				
Udorthents-Urban land				
51D:				
Wallen	chestnut oak	55	39	eastern white pine
	northern red oak	60	43	
	pitch pine	65	---	
	shortleaf pine	60	86	
	Virginia pine	65	100	
Rock outcrop.				
51E:				
Wallen	chestnut oak	55	39	eastern white pine
	northern red oak	60	43	
	pitch pine	65	---	
	shortleaf pine	60	86	
	Virginia pine	65	100	
Rock outcrop.				
52C:				
Wallen	chestnut oak	55	39	eastern white pine
	northern red oak	60	43	
	scarlet oak	55	---	
	shortleaf pine	60	86	
	Virginia pine	65	100	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
52D:				
Wallen	chestnut oak	55	39	eastern white pine
	northern red oak	60	43	
	scarlet oak	55	---	
	shortleaf pine	60	86	
	Virginia pine	65	100	
52E:				
Wallen	chestnut oak	55	39	eastern white pine
	northern red oak	60	43	
	scarlet oak	55	---	
	shortleaf pine	60	86	
	Virginia pine	65	100	
53E:				
Westmoreland	northern red oak	75	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	yellow-poplar	90	90	
Poplimento	northern red oak	80	62	black walnut, eastern white pine, northern red oak, yellow-poplar
	yellow-poplar	90	90	
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
53F:				
Westmoreland	northern red oak	75	57	black walnut, eastern white pine, northern red oak, yellow-poplar
	yellow-poplar	90	90	
Poplimento	northern red oak	80	62	black walnut, eastern white pine, northern red oak, yellow-poplar
	yellow-poplar	90	90	
Berks	black oak	70	52	black oak, eastern white pine, northern red oak
	chestnut oak	60	43	
	northern red oak	70	52	
	scarlet oak	60	---	
	Virginia pine	70	114	
54A:				
Wolfgap	northern red oak	86	65	black walnut, eastern white pine, northern red oak, shortleaf pine, white ash, white oak, yellow-poplar
	yellow-poplar	95	100	
W.				
Water				

Table 9.—Forestland Management, Part I

(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
1A:							
Allegheny-----------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
1B:							
Allegheny-----------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
2C:							
Alticrest-----------	85	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
2D:							
Alticrest-----------	90	Moderate		Poorly suited		Moderate	
		Restrictive layer	0.50	Slope	1.00	Low strength	0.50
		Slope	0.50				
2E:							
Alticrest-----------	90	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
3C:							
Berks---------------	50	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Weikert-------------	35	Severe		Moderately suited		Severe	
		Restrictive layer	1.00	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
3D:							
Berks---------------	50	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
Weikert-------------	35	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
3E:							
Berks---------------	55	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Weikert-------------	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
4E:							
Berks---------------	45	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		

Table 9.—Forestland Management, Part I—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
4E:							
Gilpin	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
4F:							
Berks	65	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Gilpin	30	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
5D:							
Bland	80	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
5E:							
Bland	80	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
6B:							
Bland	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Restrictive layer	0.50				
6C:							
Bland	85	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
6D:							
Bland	85	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
7C:							
Botetourt	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
8D:							
Brushy	75	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50				
8E:							
Brushy	80	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50

Table 9.—Forestland Management, Part I—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
9D:							
Calvin--------------	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
9E:							
Calvin--------------	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
10D:							
Calvin--------------	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
10E:							
Calvin--------------	90	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
11C:							
Carbo---------------	85	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
11D:							
Carbo---------------	90	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
11E:							
Carbo---------------	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
11F:							
Carbo---------------	90	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
12D:							
Carbo---------------	80	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
12E:							
Carbo---------------	75	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
13E:							
Carbo---------------	65	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Rock outcrop--------	20	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part I—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
14C:							
Cedarcreek----------	50	Severe		Moderately suited		Slight	
		Stoniness	1.00	Slope	0.50	Strength	0.10
Alticrest-----------	30	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14E:							
Cedarcreek----------	50	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
Alticrest-----------	30	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
		Restrictive layer	0.50				
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek----------	80	Severe		Moderately suited		Slight	
		Stoniness	1.00	Slope	0.50	Strength	0.10
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek----------	80	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15E:							
Cedarcreek----------	80	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Rock outcrop--------	15	Not rated		Not rated		Not rated	
16D:							
Chiswell------------	60	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50				
Litz----------------	35	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50				
16E:							
Chiswell------------	60	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50				
Litz----------------	35	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50				
16F:							
Chiswell------------	60	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00

Table 9.—Forestland Management, Part I—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
16F:							
Litz----------------	35	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
17B:							
Coursey-------------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
18B:							
Craigsville---------	90	Severe		Poorly suited		Slight	
		Flooding	1.00	Flooding	1.00	Strength	0.10
19D:							
Drypond-------------	65	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50	Rock fragments	0.50		
		Stoniness	0.50	Sandiness	0.50		
Rock outcrop--------	25	Not rated		Not rated		Not rated	
19E:							
Drypond-------------	65	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
				Sandiness	0.50		
Rock outcrop--------	25	Not rated		Not rated		Not rated	
20B:							
Frederick-----------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
20C:							
Frederick-----------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
20D:							
Frederick-----------	95	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
20E:							
Frederick-----------	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
20F:							
Frederick-----------	90	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
21B:							
Frederick-----------	90	Slight		Well suited		Moderate	
						Low strength	0.50
21C:							
Frederick-----------	90	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50

Table 9.—Forestland Management, Part I—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
21D:							
Frederick-----------	85	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
21E:							
Frederick-----------	90	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
21F:							
Frederick-----------	90	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Low strength	0.50				
22B:							
Frederick-----------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
22C:							
Frederick-----------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
22D:							
Frederick-----------	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
22E:							
Frederick-----------	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
23C:							
Gilpin--------------	50	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Berks---------------	35	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
23D:							
Gilpin--------------	50	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
Berks---------------	35	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
24C:							
Grimsley------------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
24D:							
Grimsley------------	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		

Table 9.—Forestland Management, Part I—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
24E:							
Grimsley------------	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
25D:							
Grimsley------------	40	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Cedarcreek----------	30	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
Berks---------------	25	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
25E:							
Grimsley------------	40	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Cedarcreek----------	35	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
Berks---------------	20	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
26B:							
Groseclose----------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
26C:							
Groseclose----------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
26D:							
Groseclose----------	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
26E:							
Groseclose----------	85	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
27B:							
Guernsey------------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50				
27C:							
Guernsey------------	85	Moderate		Moderately suited		Severe	
		Stickiness/slope	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		

Table 9.—Forestland Management, Part I—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
28C:							
Lily	85	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
		Low strength	0.50				
28D:							
Lily	95	Moderate		Poorly suited		Moderate	
		Restrictive layer	0.50	Slope	1.00	Low strength	0.50
		Slope	0.50				
28E:							
Lily	95	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
		Restrictive layer	0.50				
28F:							
Lily	85	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Low strength	0.50				
29D:							
Lily	80	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
		Restrictive layer	0.50				
29E:							
Lily	85	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Low strength	0.50				
30C:							
Madsheep	85	Moderate		Moderately suited		Severe	
		Restrictive layer	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
30D:							
Madsheep	90	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
31E:							
Madsheep	95	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
32A:							
Melvin	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Wetness	1.00	Flooding	1.00		
		Low strength	0.50	Wetness	0.50		
33:							
Mine Tipples	8	Not rated		Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part I—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
34B:							
Murrill	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
34C:							
Murrill	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
34D:							
Murrill	90	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
35A:							
Newark	45	Moderate		Moderately suited		Severe	
		Flooding	0.50	Wetness	0.50	Low strength	1.00
		Low strength	0.50	Flooding	0.50		
				Low strength	0.50		
Lindside	40	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
36F:							
Newbern	65	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Rock outcrop	30	Not rated		Not rated		Not rated	
37C:							
Oriskany	90	Severe		Moderately suited		Slight	
		Stoniness	1.00	Slope	0.50	Strength	0.10
37D:							
Oriskany	90	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
38C:							
Oriskany	90	Severe		Moderately suited		Slight	
		Stoniness	1.00	Slope	0.50	Strength	0.10
38D:							
Oriskany	95	Moderate		Poorly suited		Slight	
		Slope	0.50	Slope	1.00	Strength	0.10
38E:							
Oriskany	90	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	0.50		
39D:							
Paddyknob	75	Severe		Poorly suited		Slight	
		Restrictive layer	1.00	Slope	1.00	Strength	0.10
		Slope	0.50	Rock fragments	0.50		
		Stoniness	0.50				
Rock outcrop	20	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part I—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
39E:							
Paddyknob	70	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
		Stoniness	0.50	Rock fragments	0.50		
Rock outcrop	25	Not rated		Not rated		Not rated	
40D:							
Paddyknob	85	Severe		Poorly suited		Slight	
		Restrictive layer	1.00	Slope	1.00	Strength	0.10
		Slope	0.50				
40E:							
Paddyknob	90	Severe		Poorly suited		Slight	
		Slope	1.00	Slope	1.00	Strength	0.10
41A:							
Philo	90	Severe		Poorly suited		Moderate	
		Flooding	1.00	Flooding	1.00	Low strength	0.50
42B:							
Pisgah	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
42C:							
Pisgah	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
43B:							
Pisgah	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
43C:							
Pisgah	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
44:							
Pits, quarry	100	Not rated		Not rated		Not rated	
45A:							
Pope	85	Slight		Well suited		Moderate	
						Low strength	0.50
46C:							
Poplimento	45	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
Westmoreland	40	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
46D:							
Poplimento	60	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		

Table 9.—Forestland Management, Part I—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
46D:							
Westmoreland--------	35	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
47A:							
Purdy---------------	85	Severe		Poorly suited		Severe	
		Wetness	1.00	Wetness	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50	Wetness	0.50
48B:							
Timberville---------	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
		Stickiness/slope	0.50				
49B:							
Tumbling------------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
49C:							
Tumbling------------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
50:							
Udorthents----------	45	Not rated		Not rated		Not rated	
Urban land----------	30	Not rated		Not rated		Not rated	
51D:							
Wallen--------------	65	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50	Rock fragments	0.50		
		Stoniness	0.50				
Rock outcrop--------	25	Not rated		Not rated		Not rated	
51E:							
Wallen--------------	65	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
		Stoniness	0.50	Rock fragments	0.50		
Rock outcrop--------	25	Not rated		Not rated		Not rated	
52C:							
Wallen--------------	90	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
52D:							
Wallen--------------	90	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50				
52E:							
Wallen--------------	90	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50

Table 9.—Forestland Management, Part I—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
53E:							
Westmoreland	60	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Poplimento	20	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
Berks	15	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
53F:							
Westmoreland	45	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Poplimento	30	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
Berks	20	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
				Low strength	0.50		
54A:							
Wolfgap	85	Moderate		Moderately suited		Severe	
		Flooding	0.50	Flooding	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
W:							
Water	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part II

(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
1A:							
Allegheny	85	Slight		Slight		Moderately suited	
						Low strength	0.50
1B:							
Allegheny	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
2C:							
Alticrest	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
2D:							
Alticrest	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
2E:							
Alticrest	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
3C:							
Berks	50	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Weikert	35	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
3D:							
Berks	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Weikert	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
3E:							
Berks	55	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Weikert	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
4E:							
Berks	45	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Gilpin	40	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 9.—Forestland Management, Part II—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
4F:							
Berks	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Gilpin	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
5D:							
Bland	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
5E:							
Bland	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
6B:							
Bland	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
6C:							
Bland	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
6D:							
Bland	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
7C:							
Botetourt	95	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
8D:							
Brushy	75	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
8E:							
Brushy	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
9D:							
Calvin	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
9E:							
Calvin	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 9.—Forestland Management, Part II—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
10D:							
Calvin	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
10E:							
Calvin	90	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
11C:							
Carbo	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
11D:							
Carbo	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
11E:							
Carbo	90	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
11F:							
Carbo	90	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
12D:							
Carbo	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
12E:							
Carbo	75	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
13E:							
Carbo	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
14C:							
Cedarcreek	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Alticrest	30	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part II—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
14E:							
Cedarcreek	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Alticrest	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
15E:							
Cedarcreek	80	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
16D:							
Chiswell	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Litz	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
16E:							
Chiswell	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Litz	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
16F:							
Chiswell	60	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
Litz	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
17B:							
Coursey	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
18B:							
Craigsville	90	Slight		Slight		Poorly suited	
						Flooding	1.00

Table 9.—Forestland Management, Part II—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
19D:							
Drypond	65	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
19E:							
Drypond	65	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
						Sandiness	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
20B:							
Frederick	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
20C:							
Frederick	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
20D:							
Frederick	95	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
20E:							
Frederick	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
20F:							
Frederick	90	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
21B:							
Frederick	90	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
21C:							
Frederick	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
21D:							
Frederick	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
21E:							
Frederick	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
21F:							
Frederick	90	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00

Table 9.—Forestland Management, Part II—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
22B:							
Frederick	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
22C:							
Frederick	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
22D:							
Frederick	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
22E:							
Frederick	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
23C:							
Gilpin	50	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Berks	35	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
23D:							
Gilpin	50	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Berks	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
24C:							
Grimsley	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
24D:							
Grimsley	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
24E:							
Grimsley	85	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
25D:							
Grimsley	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Cedarcreek	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00

Table 9.—Forestland Management, Part II—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
25D:							
Berks----------------	25	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
25E:							
Grimsley------------	40	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Cedarcreek----------	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Berks----------------	20	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
26B:							
Groseclose----------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
26C:							
Groseclose----------	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
26D:							
Groseclose----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
26E:							
Groseclose----------	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
27B:							
Guernsey------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
27C:							
Guernsey------------	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
28C:							
Lily----------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
28D:							
Lily----------------	95	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
28E:							
Lily----------------	95	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
28F:							
Lily----------------	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00

Table 9.—Forestland Management, Part II—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
29D:							
Lily----------------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
29E:							
Lily----------------	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
30C:							
Madsheep------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
30D:							
Madsheep------------	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
31E:							
Madsheep------------	95	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
32A:							
Melvin--------------	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Flooding	1.00
						Wetness	0.50
33:							
Mine Tipples--------	8	Not rated		Not rated		Not rated	
Mine Dumps----------	55	Not rated		Not rated		Not rated	
Mine Tailings-------	35	Not rated		Not rated		Not rated	
34B:							
Murrill-------------	95	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
34C:							
Murrill-------------	95	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
34D:							
Murrill-------------	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
35A:							
Newark--------------	45	Slight		Slight		Moderately suited	
						Wetness	0.50
						Flooding	0.50
						Low strength	0.50
Lindside------------	40	Slight		Slight		Moderately suited	
						Flooding	0.50
						Low strength	0.50

Table 9.—Forestland Management, Part II—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
36F:							
Newbern	65	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Rock outcrop	30	Not rated		Not rated		Not rated	
37C:							
Oriskany	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
37D:							
Oriskany	90	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
38C:							
Oriskany	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
38D:							
Oriskany	95	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
38E:							
Oriskany	90	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
39D:							
Paddyknob	75	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob	70	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	
40D:							
Paddyknob	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
40E:							
Paddyknob	90	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
41A:							
Philo	90	Slight		Slight		Poorly suited	
						Flooding	1.00
42B:							
Pisgah	95	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50

Table 9.—Forestland Management, Part II—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
42C:							
Pisgah----------------	95	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
43B:							
Pisgah----------------	95	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
43C:							
Pisgah----------------	95	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
44:							
Pits, quarry--------	100	Not rated		Not rated		Not rated	
45A:							
Pope----------------	85	Slight		Slight		Well suited	
46C:							
Poplimento----------	45	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Westmoreland--------	40	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
46D:							
Poplimento----------	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Westmoreland--------	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
47A:							
Purdy---------------	85	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
48B:							
Timberville---------	85	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Flooding	1.00
						Low strength	0.50
49B:							
Tumbling------------	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
49C:							
Tumbling------------	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
50:							
Udorthents----------	45	Not rated		Not rated		Not rated	
Urban land----------	30	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part II—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
51D:							
Wallen	65	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	0.50
Rock outcrop	25	Not rated		Not rated		Not rated	
51E:							
Wallen	65	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	
52C:							
Wallen	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
52D:							
Wallen	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
52E:							
Wallen	90	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
53E:							
Westmoreland	60	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Poplimento	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Berks	15	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
53F:							
Westmoreland	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Poplimento	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
Berks	20	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
54A:							
Wolfgap	85	Slight		Slight		Moderately suited	
						Flooding	0.50
						Low strength	0.50
W:							
Water	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part III

(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: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
1A:							
Allegheny	85	Well suited		Well suited		Moderately suited	
						Low strength	0.50
1B:							
Allegheny	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
2C:							
Alticrest	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
2D:							
Alticrest	90	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
2E:							
Alticrest	90	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
3C:							
Berks	50	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
Weikert	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
3D:							
Berks	50	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
Weikert	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
3E:							
Berks	55	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
Weikert	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
4E:							
Berks	45	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Low strength	0.50
				Rock fragments	0.75	Slope	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
4E:							
Gilpin-----------	40	Moderately suited		Unsuited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
4F:							
Berks------------	65	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
Gilpin-----------	30	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
5D:							
Bland------------	80	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.75	Slope	0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
5E:							
Bland------------	80	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75	Low strength	0.50
Rock outcrop-----	15	Not rated		Not rated		Not rated	
6B:							
Bland------------	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
6C:							
Bland------------	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
6D:							
Bland------------	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.75	Slope	0.50
7C:							
Botetourt--------	95	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
8D:							
Brushy-----------	75	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
8E:							
Brushy	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
9D:							
Calvin	90	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
9E:							
Calvin	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
10D:							
Calvin	90	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
10E:							
Calvin	90	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
11C:							
Carbo	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
11D:							
Carbo	90	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
						Slope	0.50
				Slope	0.75		
11E:							
Carbo	90	Poorly suited		Unsuited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Low strength	0.50
				Stickiness; high plasticity index	0.75	Slope	0.50
11F:							
Carbo	90	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
				Stickiness; high plasticity index	0.75	Low strength	0.50
		Slope	0.50				
12D:							
Carbo	80	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.75		
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
12E:							
Carbo	75	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75	Low strength	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
13E:							
Carbo	65	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75	Low strength	0.50
Rock outcrop	20	Not rated		Not rated		Not rated	
14C:							
Cedarcreek	50	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Alticrest	30	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
14E:							
Cedarcreek	50	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Slope	0.50
				Rock fragments	0.75		
Alticrest	30	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
				Rock fragments	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek	80	Moderately suited		Poorly suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
Rock outcrop	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek	80	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Slope	0.50
				Slope	0.75		
Rock outcrop	15	Not rated		Not rated		Not rated	
15E:							
Cedarcreek	80	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
16D:							
Chiswell----------	60	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
Litz--------------	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Slope	0.50
				Slope	0.75		
16E:							
Chiswell----------	60	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
				Rock fragments	0.50		
Litz--------------	35	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Slope	0.50
				Rock fragments	0.75		
16F:							
Chiswell----------	60	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
Litz--------------	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
17B:							
Coursey-----------	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
18B:							
Craigsville-------	90	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
19D:							
Drypond-----------	65	Moderately suited		Poorly suited		Moderately suited	
		Sandiness	0.50	Slope	0.75	Rock fragments	0.50
		Rock fragments	0.50	Rock fragments	0.75	Sandiness	0.50
				Sandiness	0.50	Slope	0.50
Rock outcrop------	25	Not rated		Not rated		Not rated	
19E:							
Drypond-----------	65	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	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
Rock outcrop------	25	Not rated		Not rated		Not rated	
20B:							
Frederick---------	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
20C:							
Frederick---------	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
20D:							
Frederick--------	95	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
20E:							
Frederick--------	90	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Low strength	0.50
						Slope	0.50
20F:							
Frederick--------	90	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
						Low strength	0.50
21B:							
Frederick--------	90	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
				Slope	0.50		
21C:							
Frederick--------	90	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
21D:							
Frederick--------	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
21E:							
Frederick--------	90	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
				Rock fragments	0.50		
21F:							
Frederick--------	90	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
22B:							
Frederick--------	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
22C:							
Frederick--------	90	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
22D:							
Frederick--------	90	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
22E:							
Frederick--------	90	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Low strength	0.50
						Slope	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
23C:							
Gilpin	50	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
Berks	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
23D:							
Gilpin	50	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
Berks	35	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
24C:							
Grimsley	90	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
24D:							
Grimsley	90	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
24E:							
Grimsley	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
25D:							
Grimsley	40	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
Cedarcreek	30	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Slope	0.50
				Slope	0.75		
Berks	25	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
25E:							
Grimsley	40	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
Cedarcreek	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75		
Berks	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
26B:							
Groseclose-------	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
26C:							
Groseclose-------	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
26D:							
Groseclose-------	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.75	Slope	0.50
26E:							
Groseclose-------	85	Poorly suited		Unsuited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Low strength	0.50
				Stickiness; high plasticity index	0.75	Slope	0.50
27B:							
Guernsey---------	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
27C:							
Guernsey---------	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
28C:							
Lily-------------	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
28D:							
Lily-------------	95	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
28E:							
Lily-------------	95	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Slope	0.50
28F:							
Lily-------------	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
29D:							
Lily-------------	80	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
29E:							
Lily	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
30C:							
Madsheep	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
				Slope	0.50		
30D:							
Madsheep	90	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Low strength	0.50
				Rock fragments	0.75	Slope	0.50
31E:							
Madsheep	95	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
32A:							
Melvin	85	Poorly suited		Poorly suited		Poorly suited	
		Wetness	0.75	Wetness	0.75	Wetness	1.00
						Low strength	0.50
33:							
Mine Tipples	8	Not rated		Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated		Not rated	
34B:							
Murrill	95	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
34C:							
Murrill	95	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
34D:							
Murrill	90	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50
35A:							
Newark	45	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Lindside	40	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
36F:							
Newbern----------	65	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
						Low strength	0.50
Rock outcrop-----	30	Not rated		Not rated		Not rated	
37C:							
Oriskany---------	90	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
				Slope	0.50		
37D:							
Oriskany---------	90	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Slope	0.50
				Slope	0.75		
38C:							
Oriskany---------	90	Moderately suited		Unsuited		Well suited	
		Rock fragments	0.50	Rock fragments	1.00		
				Slope	0.50		
38D:							
Oriskany---------	95	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Rock fragments	1.00	Slope	0.50
				Slope	0.75		
38E:							
Oriskany---------	90	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	1.00	Rock fragments	0.50
39D:							
Paddyknob--------	75	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
				Rock fragments	0.75	Slope	0.50
Rock outcrop-----	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob--------	70	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
Rock outcrop-----	25	Not rated		Not rated		Not rated	
40D:							
Paddyknob--------	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		
40E:							
Paddyknob--------	90	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50		
41A:							
Philo------------	90	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
42B:							
Pisgah	95	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
42C:							
Pisgah	95	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
43B:							
Pisgah	95	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
43C:							
Pisgah	95	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
44:							
Pits, quarry	100	Not rated		Not rated		Not rated	
45A:							
Pope	85	Well suited		Well suited		Well suited	
46C:							
Poplimento	45	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
Westmoreland	40	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
46D:							
Poplimento	60	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.75	Slope	0.50
Westmoreland	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
47A:							
Purdy	85	Moderately suited		Moderately suited		Poorly suited	
		Wetness	0.50	Wetness	0.50	Wetness	1.00
						Low strength	0.50
48B:							
Timberville	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
49B:							
Tumbling---------	90	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
49C:							
Tumbling---------	90	Well suited		Moderately suited		Moderately suited	
				Rock fragments	0.50	Low strength	0.50
				Slope	0.50		
50:							
Udorthents-------	45	Not rated		Not rated		Not rated	
Urban land-------	30	Not rated		Not rated		Not rated	
51D:							
Wallen-----------	65	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Rock fragments	0.50
				Rock fragments	0.75	Slope	0.50
Rock outcrop-----	25	Not rated		Not rated		Not rated	
51E:							
Wallen-----------	65	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
Rock outcrop-----	25	Not rated		Not rated		Not rated	
52C:							
Wallen-----------	90	Moderately suited		Moderately suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.50		
				Slope	0.50		
52D:							
Wallen-----------	90	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.50		
52E:							
Wallen-----------	90	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50		
53E:							
Westmoreland-----	60	Well suited		Unsuited		Moderately suited	
				Slope	1.00	Low strength	0.50
						Slope	0.50
Poplimento-------	20	Poorly suited		Unsuited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Low strength	0.50
				Stickiness; high plasticity index	0.75	Slope	0.50
Berks------------	15	Moderately suited		Unsuited		Moderately suited	
		Rock fragments	0.50	Slope	1.00	Low strength	0.50
				Rock fragments	0.75	Slope	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
53F:							
Westmoreland-----	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
						Low strength	0.50
Poplimento-------	30	Poorly suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.75	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.75	Low strength	0.50
Berks------------	20	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.75	Low strength	0.50
54A:							
Wolfgap----------	85	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
W:							
Water------------	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part IV

(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): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
1A:					
Allegheny	85	Well suited		Well suited	
1B:					
Allegheny	85	Well suited		Well suited	
2C:					
Alticrest	85	Well suited		Poorly suited	
				Restrictive layer	0.50
2D:					
Alticrest	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
2E:					
Alticrest	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
3C:					
Berks	50	Poorly suited		Well suited	
		Rock fragments	0.50		
Weikert	35	Poorly suited		Well suited	
		Rock fragments	0.50		
3D:					
Berks	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Weikert	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
3E:					
Berks	55	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Weikert	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
4E:					
Berks	45	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Gilpin	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
4F:					
Berks	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Gilpin	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
5D:					
Bland	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50		
Rock outcrop	15	Not rated		Not rated	
5E:					
Bland	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50		
Rock outcrop	15	Not rated		Not rated	
6B:					
Bland	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
6C:					
Bland	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
6D:					
Bland	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50		
7C:					
Botetourt	95	Well suited		Well suited	
8D:					
Brushy	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
8E:					
Brushy	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
9D:					
Calvin	90	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
9E:					
Calvin	85	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
10D:					
Calvin	90	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
10E:					
Calvin	90	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
		Rock fragments	0.50	Slope	1.00
11C:					
Carbo	85	Poorly suited		Poorly suited	
		Stickiness; high plasticity index	0.50	Restrictive layer	0.50
11D:					
Carbo	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50	Restrictive layer	0.50
11E:					
Carbo	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50	Restrictive layer	0.50
11F:					
Carbo	90	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Restrictive layer	0.50
12D:					
Carbo	80	Poorly suited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	0.50
				Restrictive layer	0.50
		Slope	0.50		
Rock outcrop	15	Not rated		Not rated	
12E:					
Carbo	75	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Restrictive layer	0.50
Rock outcrop	15	Not rated		Not rated	
13E:					
Carbo	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Restrictive layer	0.50
Rock outcrop	20	Not rated		Not rated	

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
14C:					
Cedarcreek----------	50	Poorly suited		Well suited	
		Rock fragments	0.50		
Alticrest-----------	30	Well suited		Poorly suited	
				Restrictive layer	0.50
Rock outcrop--------	15	Not rated		Not rated	
14E:					
Cedarcreek----------	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Alticrest-----------	30	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
Rock outcrop--------	15	Not rated		Not rated	
15C:					
Cedarcreek----------	80	Poorly suited		Well suited	
		Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
15D:					
Cedarcreek----------	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
15E:					
Cedarcreek----------	80	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
16D:					
Chiswell------------	60	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
				Slope	0.50
Litz----------------	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
16E:					
Chiswell------------	60	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
				Slope	0.50
Litz----------------	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
16F:					
Chiswell	60	Unsuited		Unsuited	
		Slope	1.00	Restrictive layer	1.00
				Slope	1.00
Litz	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
17B:					
Coursey	85	Well suited		Well suited	
18B:					
Craigsville	90	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
19D:					
Drypond	65	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
				Rock fragments	0.50
Rock outcrop	25	Not rated		Not rated	
19E:					
Drypond	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	1.00
				Rock fragments	0.50
Rock outcrop	25	Not rated		Not rated	
20B:					
Frederick	90	Well suited		Well suited	
20C:					
Frederick	90	Well suited		Well suited	
20D:					
Frederick	95	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
20E:					
Frederick	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
20F:					
Frederick	90	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
21B:					
Frederick	90	Well suited		Well suited	
21C:					
Frederick	90	Well suited		Well suited	
21D:					
Frederick	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
21E:					
Frederick	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
21F:					
Frederick	90	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
22B:					
Frederick	90	Well suited		Well suited	
22C:					
Frederick	90	Well suited		Well suited	
22D:					
Frederick	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
22E:					
Frederick	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
23C:					
Gilpin	50	Well suited		Well suited	
Berks	35	Poorly suited		Well suited	
		Rock fragments	0.50		
23D:					
Gilpin	50	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Berks	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
24C:					
Grimsley	90	Poorly suited		Well suited	
		Rock fragments	0.50		
24D:					
Grimsley	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
24E:					
Grimsley	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
25D:					
Grimsley	40	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
Cedarcreek	30	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50		

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
25D:					
Berks	25	Poorly suited		Poorly suited	
		Rock fragments	0.50	Slope	0.50
		Slope	0.50		
25E:					
Grimsley	40	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Cedarcreek	35	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
Berks	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
26B:					
Groseclose	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
26C:					
Groseclose	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
26D:					
Groseclose	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50		
26E:					
Groseclose	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50		
27B:					
Guernsey	85	Well suited		Well suited	
27C:					
Guernsey	85	Well suited		Well suited	
28C:					
Lily	85	Well suited		Well suited	
28D:					
Lily	95	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
28E:					
Lily	95	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
28F:					
Lily	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
29D:					
Lily----------------	80	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
29E:					
Lily----------------	85	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
30C:					
Madsheep------------	85	Poorly suited		Well suited	
		Rock fragments	0.50		
30D:					
Madsheep------------	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
31E:					
Madsheep------------	95	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
32A:					
Melvin--------------	85	Unsuited		Unsuited	
		Wetness	0.75	Wetness	1.00
33:					
Mine Tipples--------	8	Not rated		Not rated	
Mine Dumps----------	55	Not rated		Not rated	
Mine Tailings-------	35	Not rated		Not rated	
34B:					
Murrill-------------	95	Well suited		Well suited	
34C:					
Murrill-------------	95	Well suited		Well suited	
34D:					
Murrill-------------	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
35A:					
Newark--------------	45	Well suited		Well suited	
Lindside------------	40	Well suited		Well suited	
36F:					
Newbern-------------	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	1.00
Rock outcrop--------	30	Not rated		Not rated	
37C:					
Oriskany------------	90	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
37D:					
Oriskany	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
38C:					
Oriskany	90	Poorly suited		Poorly suited	
		Rock fragments	0.50	Rock fragments	0.50
38D:					
Oriskany	95	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
38E:					
Oriskany	90	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
39D:					
Paddyknob	75	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
				Restrictive layer	0.50
Rock outcrop	20	Not rated		Not rated	
39E:					
Paddyknob	70	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
				Restrictive layer	0.50
Rock outcrop	25	Not rated		Not rated	
40D:					
Paddyknob	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
40E:					
Paddyknob	90	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
				Restrictive layer	0.50
41A:					
Philo	90	Well suited		Well suited	
42B:					
Pisgah	95	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
42C:					
Pisgah	95	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
43B:					
Pisgah	95	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
43C:					
Pisgah	95	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
44:					
Pits, quarry	100	Not rated		Not rated	
45A:					
Pope	85	Well suited		Well suited	
46C:					
Poplimento	45	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Westmoreland	40	Well suited		Well suited	
46D:					
Poplimento	60	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50		
Westmoreland	35	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
47A:					
Purdy	85	Poorly suited		Unsuited	
		Wetness	0.50	Wetness	1.00
48B:					
Timberville	85	Well suited		Well suited	
49B:					
Tumbling	90	Well suited		Well suited	
49C:					
Tumbling	90	Well suited		Well suited	
50:					
Udorthents	45	Not rated		Not rated	
Urban land	30	Not rated		Not rated	
51D:					
Wallen	65	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Rock fragments	0.50
				Restrictive layer	0.50
Rock outcrop	25	Not rated		Not rated	

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
51E:					
Wallen	65	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Rock fragments	0.50
				Restrictive layer	0.50
Rock outcrop	25	Not rated		Not rated	
52C:					
Wallen	90	Poorly suited		Poorly suited	
		Rock fragments	0.50	Restrictive layer	0.50
52D:					
Wallen	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50	Restrictive layer	0.50
52E:					
Wallen	90	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50	Restrictive layer	0.50
53E:					
Westmoreland	60	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
Poplimento	20	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Stickiness; high plasticity index	0.50		
Berks	15	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
		Rock fragments	0.50		
53F:					
Westmoreland	45	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
Poplimento	30	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50		
Berks	20	Unsuited		Unsuited	
		Slope	1.00	Slope	1.00
		Rock fragments	0.50		
54A:					
Wolfgap	85	Well suited		Well suited	
W:					
Water	100	Not rated		Not rated	

Table 9.—Forestland Management, Part V

(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: Rating class and limiting features	Potential for damage to soil by fire: Value	Potential for seedling mortality: Rating class and limiting features	Potential for seedling mortality: Value
1A:					
Allegheny	85	Low		Low	
		Texture/rock fragments	0.10		
1B:					
Allegheny	85	Low		Low	
		Texture/rock fragments	0.10		
2C:					
Alticrest	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
2D:					
Alticrest	90	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
2E:					
Alticrest	90	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
3C:					
Berks	50	Moderate		Low	
		Texture/rock fragments	0.50		
Weikert	35	Moderate		Low	
		Texture/rock fragments	0.50		
3D:					
Berks	50	Moderate		Low	
		Texture/rock fragments	0.50		
Weikert	35	Moderate		Low	
		Texture/rock fragments	0.50		
3E:					
Berks	55	Moderate		Low	
		Texture/slope/ rock fragments	0.50		

Table 9.—Forestland Management, Part V—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
3E:					
Weikert	35	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
4E:					
Berks	45	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
Gilpin	40	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
4F:					
Berks	65	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
Gilpin	30	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
5D:					
Bland	80	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Rock outcrop	15	Not rated		Not rated	
5E:					
Bland	80	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Rock outcrop	15	Not rated		Not rated	
6B:					
Bland	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
6C:					
Bland	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
6D:					
Bland	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		

Table 9.—Forestland Management, Part V—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
7C:					
Botetourt	95	Low		Low	
		Texture/rock fragments	0.10		
8D:					
Brushy	75	Moderate		Low	
		Texture/rock fragments	0.50		
8E:					
Brushy	80	Moderate		Low	
		Texture/rock fragments	0.50		
9D:					
Calvin	90	Moderate		Low	
		Texture/rock fragments	0.50		
9E:					
Calvin	85	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
10D:					
Calvin	90	Moderate		Low	
		Texture/rock fragments	0.50		
10E:					
Calvin	90	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
11C:					
Carbo	85	Moderate		Low	
		Texture/rock fragments	0.50		
11D:					
Carbo	90	Moderate		Low	
		Texture/rock fragments	0.50		
11E:					
Carbo	90	Moderate		Low	
		Texture/rock fragments	0.50		
11F:					
Carbo	90	Moderate		Low	
		Texture/rock fragments	0.50		
12D:					
Carbo	80	Moderate		Low	
		Texture/rock fragments	0.50		
Rock outcrop	15	Not rated		Not rated	

Table 9.—Forestland Management, Part V—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
12E:					
Carbo---------------	75	Moderate		Low	
		Texture/rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
13E:					
Carbo---------------	65	Moderate		Low	
		Texture/rock fragments	0.50		
Rock outcrop--------	20	Not rated		Not rated	
14C:					
Cedarcreek----------	50	High		Low	
		Texture/slope/ rock fragments	1.00		
		Texture/surface depth/rock fragments	1.00		
Alticrest-----------	30	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
14E:					
Cedarcreek----------	50	High		Low	
		Texture/slope/ rock fragments	1.00		
		Texture/surface depth/rock fragments	1.00		
Alticrest-----------	30	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Rock outcrop--------	15	Not rated		Not rated	
15C:					
Cedarcreek----------	80	High		Low	
		Texture/slope/ rock fragments	1.00		
		Texture/surface depth/rock fragments	1.00		
Rock outcrop--------	15	Not rated		Not rated	
15D:					
Cedarcreek----------	80	High		Low	
		Texture/slope/ rock fragments	1.00		
		Texture/surface depth/rock fragments	1.00		

Table 9.—Forestland Management, Part V—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
15D:					
Rock outcrop	15	Not rated		Not rated	
15E:					
Cedarcreek	80	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Rock outcrop	15	Not rated		Not rated	
16D:					
Chiswell	60	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Litz	35	Moderate		Low	
		Texture/rock fragments	0.50		
16E:					
Chiswell	60	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Litz	35	Moderate		Low	
		Texture/rock fragments	0.50		
16F:					
Chiswell	60	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Litz	35	Moderate		Low	
		Texture/rock fragments	0.50		
17B:					
Coursey	85	Low		Low	
		Texture/rock fragments	0.10		
18B:					
Craigsville	90	Low		Low	
		Texture/rock fragments	0.10		
19D:					
Drypond	65	High		Moderate	
		Texture/surface depth/rock fragments	1.00	Soil reaction	0.50
Rock outcrop	25	Not rated		Not rated	

Table 9.—Forestland Management, Part V—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
19E:					
Drypond-------------	65	High		Moderate	
		Texture/slope/ surface depth/ rock fragments	1.00	Soil reaction	0.50
Rock outcrop--------	25	Not rated		Not rated	
20B:					
Frederick-----------	90	Moderate		Low	
		Texture/rock fragments	0.50		
20C:					
Frederick-----------	90	Moderate		Low	
		Texture/rock fragments	0.50		
20D:					
Frederick-----------	95	Moderate		Low	
		Texture/rock fragments	0.50		
20E:					
Frederick-----------	90	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
20F:					
Frederick-----------	90	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
21B:					
Frederick-----------	90	Moderate		Low	
		Texture/rock fragments	0.50		
21C:					
Frederick-----------	90	Moderate		Low	
		Texture/rock fragments	0.50		
21D:					
Frederick-----------	85	Moderate		Low	
		Texture/rock fragments	0.50		
21E:					
Frederick-----------	90	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
21F:					
Frederick-----------	90	Moderate		Low	
		Texture/slope/ rock fragments	0.50		

Table 9.—Forestland Management, Part V—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
22B:					
Frederick-----------	90	Moderate		Low	
		Texture/rock fragments	0.50		
22C:					
Frederick-----------	90	Moderate		Low	
		Texture/rock fragments	0.50		
22D:					
Frederick-----------	90	Moderate		Low	
		Texture/rock fragments	0.50		
22E:					
Frederick-----------	90	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
23C:					
Gilpin--------------	50	Moderate		Low	
		Texture/rock fragments	0.50		
Berks---------------	35	Moderate		Low	
		Texture/rock fragments	0.50		
23D:					
Gilpin--------------	50	Moderate		Low	
		Texture/rock fragments	0.50		
Berks---------------	35	Moderate		Low	
		Texture/rock fragments	0.50		
24C:					
Grimsley------------	90	Moderate		Low	
		Texture/rock fragments	0.50		
24D:					
Grimsley------------	90	Moderate		Low	
		Texture/rock fragments	0.50		
24E:					
Grimsley------------	85	Moderate		Low	
		Texture/rock fragments	0.50		
25D:					
Grimsley------------	40	Moderate		Low	
		Texture/rock fragments	0.50		

Table 9.—Forestland Management, Part V—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
25D:					
Cedarcreek----------	30	High		Low	
		Texture/slope/ rock fragments	1.00		
		Texture/surface depth/rock fragments	1.00		
Berks---------------	25	Moderate		Low	
		Texture/rock fragments	0.50		
25E:					
Grimsley------------	40	Moderate		Low	
		Texture/rock fragments	0.50		
Cedarcreek----------	35	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Berks---------------	20	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
26B:					
Groseclose----------	85	Moderate		Low	
		Texture/rock fragments	0.50		
26C:					
Groseclose----------	85	Moderate		Low	
		Texture/rock fragments	0.50		
26D:					
Groseclose----------	85	Moderate		Low	
		Texture/rock fragments	0.50		
26E:					
Groseclose----------	85	Moderate		Low	
		Texture/rock fragments	0.50		
27B:					
Guernsey------------	85	Low		Low	
		Texture/rock fragments	0.10		
27C:					
Guernsey------------	85	Low		Low	
		Texture/rock fragments	0.10		
28C:					
Lily----------------	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		

Table 9.—Forestland Management, Part V—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
28D:					
Lily	95	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
28E:					
Lily	95	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
28F:					
Lily	85	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
29D:					
Lily	80	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
29E:					
Lily	85	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
30C:					
Madsheep	85	Low		Low	
		Texture/rock fragments	0.10		
30D:					
Madsheep	90	Low		Low	
		Texture/rock fragments	0.10		
31E:					
Madsheep	95	Low		Low	
		Texture/slope/ rock fragments	0.10		
32A:					
Melvin	85	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
33:					
Mine Tipples	8	Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated	

Table 9.—Forestland Management, Part V—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
34B:					
Murrill-------------	95	Moderate		Low	
		Texture/rock fragments	0.50		
34C:					
Murrill-------------	95	Moderate		Low	
		Texture/rock fragments	0.50		
34D:					
Murrill-------------	90	Moderate		Low	
		Texture/rock fragments	0.50		
35A:					
Newark--------------	45	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
Lindside------------	40	Low		Low	
		Texture/rock fragments	0.10		
36F:					
Newbern-------------	65	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
Rock outcrop--------	30	Not rated		Not rated	
37C:					
Oriskany------------	90	Moderate		Low	
		Texture/rock fragments	0.50		
37D:					
Oriskany------------	90	Moderate		Low	
		Texture/rock fragments	0.50		
38C:					
Oriskany------------	90	Moderate		Low	
		Texture/rock fragments	0.50		
38D:					
Oriskany------------	95	Moderate		Low	
		Texture/rock fragments	0.50		
38E:					
Oriskany------------	90	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
39D:					
Paddyknob-----------	75	Low		Low	
		Texture/surface depth/rock fragments	0.10		

Table 9.—Forestland Management, Part V—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
39D:					
Rock outcrop	20	Not rated		Not rated	
39E:					
Paddyknob	70	Moderate		Low	
		Texture/slope/ surface depth/ rock fragments	0.50		
Rock outcrop	25	Not rated		Not rated	
40D:					
Paddyknob	85	Low		Low	
		Texture/surface depth/rock fragments	0.10		
40E:					
Paddyknob	90	Moderate		Low	
		Texture/slope/ surface depth/ rock fragments	0.50		
41A:					
Philo	90	Low		Low	
		Texture/rock fragments	0.10		
42B:					
Pisgah	95	Low		Low	
		Texture/rock fragments	0.10		
42C:					
Pisgah	95	Low		Low	
		Texture/rock fragments	0.10		
43B:					
Pisgah	95	Low		Low	
		Texture/rock fragments	0.10		
43C:					
Pisgah	95	Low		Low	
		Texture/rock fragments	0.10		
44:					
Pits, quarry	100	Not rated		Not rated	
45A:					
Pope	85	Low		Low	
		Texture/rock fragments	0.10		
46C:					
Poplimento	45	Moderate		Low	
		Texture/rock fragments	0.50		

Table 9.—Forestland Management, Part V—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
46C:					
Westmoreland--------	40	Low		Low	
		Texture/rock fragments	0.10		
46D:					
Poplimento----------	60	Moderate		Low	
		Texture/rock fragments	0.50		
Westmoreland--------	35	Low		Low	
		Texture/rock fragments	0.10		
47A:					
Purdy---------------	85	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
48B:					
Timberville---------	85	Low		Low	
		Texture/rock fragments	0.10		
49B:					
Tumbling------------	90	Moderate		Low	
		Texture/rock fragments	0.50		
49C:					
Tumbling------------	90	Moderate		Low	
		Texture/rock fragments	0.50		
50:					
Udorthents----------	45	Not rated		Not rated	
Urban land----------	30	Not rated		Not rated	
51D:					
Wallen--------------	65	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Rock outcrop--------	25	Not rated		Not rated	
51E:					
Wallen--------------	65	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
Rock outcrop--------	25	Not rated		Not rated	
52C:					
Wallen--------------	90	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Potential for damage to soil by fire: Value	Potential for seedling mortality: Rating class and limiting features	Potential for seedling mortality: Value
52D:					
Wallen	90	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
52E:					
Wallen	90	High		Low	
		Texture/slope/ surface depth/ rock fragments	1.00		
53E:					
Westmoreland	60	Low		Low	
		Texture/slope/ rock fragments	0.10		
Poplimento	20	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
Berks	15	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
53F:					
Westmoreland	45	Low		Low	
		Texture/slope/ rock fragments	0.10		
Poplimento	30	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
Berks	20	Moderate		Low	
		Texture/slope/ rock fragments	0.50		
54A:					
Wolfgap	85	Low		Low	
W:					
Water	100	Not rated		Not rated	

Table 10.—Recreational Development, Part I

(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: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
1A:							
Allegheny	85	Not limited		Not limited		Not limited	
1B:							
Allegheny	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
2C:							
Alticrest	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.10
						Too sandy	0.01
2D:							
Alticrest	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.10
						Too sandy	0.01
2E:							
Alticrest	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.10
						Too sandy	0.01
3C:							
Berks	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20
Weikert	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	0.54	Gravel content	0.54	Depth to bedrock	1.00
		Slope	0.37	Slope	0.37	Gravel content	1.00
3D:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20
Weikert	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
		Gravel content	0.54	Gravel content	0.54	Gravel content	1.00
3E:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
3E:							
Weikert	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
		Gravel content	0.54	Gravel content	0.54	Gravel content	1.00
4E:							
Berks	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20
Gilpin	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.10
4F:							
Berks	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20
Gilpin	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.10
5D:							
Bland	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
						Depth to bedrock	0.06
Rock outcrop	15	Not rated		Not rated		Not rated	
5E:							
Bland	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
						Depth to bedrock	0.06
Rock outcrop	15	Not rated		Not rated		Not rated	
6B:							
Bland	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.26	Slow water movement	0.26	Slope	0.88
						Slow water movement	0.26
						Depth to bedrock	0.06
6C:							
Bland	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
						Depth to bedrock	0.06

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
6D:							
Bland	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
						Depth to bedrock	0.06
7C:							
Botetourt	95	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.39	Slope	0.37	Slope	1.00
		Slope	0.37	Depth to saturated zone	0.19	Depth to saturated zone	0.39
8D:							
Brushy	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.16	Gravel content	0.16	Gravel content	1.00
						Depth to bedrock	0.95
8E:							
Brushy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.16	Gravel content	0.16	Gravel content	1.00
						Depth to bedrock	0.95
9D:							
Calvin	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
						Depth to bedrock	0.29
9E:							
Calvin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
						Depth to bedrock	0.29
10D:							
Calvin	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
		Gravel content	0.04	Gravel content	0.04	Large stones content	0.47
10E:							
Calvin	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
		Gravel content	0.04	Gravel content	0.04	Large stones content	0.47
11C:							
Carbo	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.37	Slope	0.37	Slow water movement	0.96
						Depth to bedrock	0.16

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
11D:							
Carbo	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.16
11E:							
Carbo	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.16
11F:							
Carbo	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.16
12D:							
Carbo	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.16
Rock outcrop	15	Not rated		Not rated		Not rated	
12E:							
Carbo	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.16
Rock outcrop	15	Not rated		Not rated		Not rated	
13E:							
Carbo	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Depth to bedrock	0.16
Rock outcrop	20	Not rated		Not rated		Not rated	
14C:							
Cedarcreek	50	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
		Slope	0.16	Slope	0.16	Slope	1.00
						Gravel content	1.00
Alticrest	30	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.47	Large stones content	0.47	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.47
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.10

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
14C:							
Rock outcrop	15	Not rated		Not rated		Not rated	
14E:							
Cedarcreek	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
						Gravel content	1.00
Alticrest	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Large stones content	0.47
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.10
Rock outcrop	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek	80	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
		Gravel content	0.02	Gravel content	0.02	Gravel content	1.00
						Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
						Gravel content	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
15E:							
Cedarcreek	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
						Gravel content	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
16D:							
Chiswell	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
						Gravel content	0.22
Litz	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.02	Gravel content	0.02	Gravel content	1.00
						Depth to bedrock	0.80

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
16E:							
Chiswell------------	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
						Gravel content	0.22
Litz----------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.02	Gravel content	0.02	Gravel content	1.00
						Depth to bedrock	0.80
16F:							
Chiswell------------	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
						Gravel content	0.22
Litz----------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.02	Gravel content	0.02	Gravel content	1.00
						Depth to bedrock	0.80
17B:							
Coursey-------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
18B:							
Craigsville---------	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Gravel content	0.92	Flooding	1.00
		Gravel content	0.92	Flooding	0.40	Gravel content	1.00
						Slope	0.12
19D:							
Drypond-------------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Depth to bedrock	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
19E:							
Drypond-------------	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Depth to bedrock	1.00
Rock outcrop--------	25	Not rated		Not rated		Not rated	
20B:							
Frederick-----------	90	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.56
20C:							
Frederick-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Gravel content	0.56

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
20D:							
Frederick-----------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.56
20E:							
Frederick-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.56
20F:							
Frederick-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.56
21B:							
Frederick-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.68	Gravel content	0.68	Gravel content	1.00
						Slope	0.88
21C:							
Frederick-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.68	Gravel content	0.68	Gravel content	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
21D:							
Frederick-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.68	Gravel content	0.68	Slope	1.00
21E:							
Frederick-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.68	Gravel content	0.68	Slope	1.00
21F:							
Frederick-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Gravel content	1.00
		Gravel content	0.68	Gravel content	0.68	Slope	1.00
22B:							
Frederick-----------	90	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.56
22C:							
Frederick-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Gravel content	0.56
22D:							
Frederick-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.56
22E:							
Frederick-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.56

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
23C:							
Gilpin----------------	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Depth to bedrock	0.10
Berks-----------------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20
23D:							
Gilpin----------------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.10
Berks-----------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20
24C:							
Grimsley--------------	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	0.66
						Large stones content	0.47
24D:							
Grimsley--------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	0.66
						Large stones content	0.47
24E:							
Grimsley--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	0.66
						Large stones content	0.47
25D:							
Grimsley--------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	0.66
						Large stones content	0.47
Cedarcreek------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
					0.47	Gravel content	1.00
Berks-----------------	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
25E:							
Grimsley	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	0.66
						Large stones content	0.47
Cedarcreek	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
						Gravel content	1.00
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20
26B:							
Groseclose	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Slope	0.88
26C:							
Groseclose	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.37	Slope	0.37	Slow water movement	0.96
26D:							
Groseclose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
26E:							
Groseclose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
27B:							
Guernsey	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slow water movement	0.50	Slope	0.88
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Slow water movement	0.50
						Depth to saturated zone	0.07
27C:							
Guernsey	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.50	Slow water movement	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Slow water movement	0.50
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Depth to saturated zone	0.07

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
28C:							
Lily----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.06
						Too sandy	0.01
28D:							
Lily----------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.06
						Too sandy	0.01
28E:							
Lily----------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.06
						Too sandy	0.01
28F:							
Lily----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.06
						Too sandy	0.01
29D:							
Lily----------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Large stones content	0.47
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.06
29E:							
Lily----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Large stones content	0.47
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.06
30C:							
Madsheep------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.84
30D:							
Madsheep------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.84
31E:							
Madsheep------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
		Gravel content	0.06	Gravel content	0.06	Depth to bedrock	0.84

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
32A:							
Melvin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Ponding	1.00	Flooding	0.40	Ponding	1.00
33:							
Mine Tipples	8	Not rated		Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated		Not rated	
34B:							
Murrill	95	Not limited		Not limited		Somewhat limited	
						Slope	0.88
34C:							
Murrill	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
34D:							
Murrill	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
35A:							
Newark	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
Lindside	40	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.03	Flooding	0.60
		Depth to saturated zone	0.07			Depth to saturated zone	0.07
36F:							
Newbern	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
						Gravel content	0.18
Rock outcrop	30	Not rated		Not rated		Not rated	
37C:							
Oriskany	90	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.66	Gravel content	0.66	Slope	1.00
		Slope	0.37	Slope	0.37	Gravel content	1.00
37D:							
Oriskany	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.66	Gravel content	0.66	Gravel content	1.00
38C:							
Oriskany	90	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.66	Gravel content	0.66	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
		Slope	0.37	Slope	0.37	Large stones content	0.47

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
38D:							
Oriskany	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.66	Gravel content	0.66	Gravel content	1.00
		Large stones content	0.47	Large stones content	0.47	Large stones content	0.47
38E:							
Oriskany	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.66	Gravel content	0.66	Gravel content	1.00
39D:							
Paddyknob	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
40D:							
Paddyknob	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
						Depth to bedrock	0.80
		Gravel content	0.01	Gravel content	0.01		
40E:							
Paddyknob	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
						Depth to bedrock	0.80
		Gravel content	0.01	Gravel content	0.01		
41A:							
Philo	90	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	0.03	Gravel content	0.18
						Depth to saturated zone	0.07
42B:							
Pisgah	95	Not limited		Not limited		Somewhat limited	
						Slope	0.88
42C:							
Pisgah	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
43B:							
Pisgah	95	Not limited		Not limited		Somewhat limited	
						Slope	0.88
43C:							
Pisgah	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
44:							
Pits, quarry	100	Not rated		Not rated		Not rated	
45A:							
Pope	85	Very limited		Not limited		Not limited	
		Flooding	1.00				
46C:							
Poplimento	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
Westmoreland	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
46D:							
Poplimento	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
Westmoreland	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
47A:							
Purdy	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
48B:							
Timberville	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
						Slope	0.50
49B:							
Tumbling	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.47	Large stones content	0.47	Slope	0.88
						Large stones content	0.47
						Gravel content	0.22
49C:							
Tumbling	90	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.47	Large stones content	0.47	Slope	1.00
		Slope	0.37	Slope	0.37	Large stones content	0.47
						Gravel content	0.22

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
50:							
Udorthents	45	Not rated		Not rated		Not rated	
Urban land	30	Not rated		Not rated		Not rated	
51D:							
Wallen	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
51E:							
Wallen	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
52C:							
Wallen	90	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.47	Large stones content	0.47	Slope	1.00
						Gravel content	1.00
		Slope	0.37	Slope	0.37	Depth to bedrock	0.90
		Gravel content	0.04	Gravel content	0.04		
52D:							
Wallen	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
						Depth to bedrock	0.90
		Gravel content	0.04	Gravel content	0.04		
52E:							
Wallen	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
						Depth to bedrock	0.90
		Gravel content	0.04	Gravel content	0.04		
53E:							
Westmoreland	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Poplimento	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
Berks	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
53F:							
Westmoreland	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Poplimento	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.20
54A:							
Wolfgap	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
W:							
Water	100	Not rated		Not rated		Not rated	

Table 10.—Recreational Development, Part II

(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: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1A:							
Allegheny	85	Not limited		Not limited		Not limited	
1B:							
Allegheny	85	Not limited		Not limited		Not limited	
2C:							
Alticrest	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.01	Too sandy	0.01	Slope	0.37
						Depth to bedrock	0.10
						Droughty	0.01
2D:							
Alticrest	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Too sandy	0.01	Slope	1.00
		Too sandy	0.01			Depth to bedrock	0.10
						Droughty	0.01
2E:							
Alticrest	90	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.56	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.10
						Droughty	0.01
3C:							
Berks	50	Not limited		Not limited		Somewhat limited	
						Droughty	0.86
						Slope	0.37
						Depth to bedrock	0.20
Weikert	35	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Droughty	1.00
						Gravel content	0.54
3D:							
Berks	50	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Droughty	0.86
						Depth to bedrock	0.20
Weikert	35	Very limited		Not limited		Very limited	
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
3E:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.86
						Depth to bedrock	0.20

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
3E:							
Weikert	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
4E:							
Berks	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Droughty	0.86
						Depth to bedrock	0.20
Gilpin	40	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.22	Depth to bedrock	0.10
4F:							
Berks	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.86
						Depth to bedrock	0.20
Gilpin	30	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to bedrock	0.10
5D:							
Bland	80	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50			Depth to bedrock	0.06
Rock outcrop	15	Not rated		Not rated		Not rated	
5E:							
Bland	80	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.96	Depth to bedrock	0.06
Rock outcrop	15	Not rated		Not rated		Not rated	
6B:							
Bland	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.06
6C:							
Bland	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
						Depth to bedrock	0.06
6D:							
Bland	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50			Depth to bedrock	0.06
7C:							
Botetourt	95	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Depth to saturated zone	0.19

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
8D:							
Brushy	75	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Droughty	0.95
						Depth to bedrock	0.95
8E:							
Brushy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.95
						Depth to bedrock	0.95
9D:							
Calvin	90	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.29
						Droughty	0.06
9E:							
Calvin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.29
						Droughty	0.06
10D:							
Calvin	90	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.47	Slope	1.00
		Large stones content	0.47			Depth to bedrock	0.29
						Droughty	0.06
10E:							
Calvin	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Depth to bedrock	0.29
						Droughty	0.06
11C:							
Carbo	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
						Depth to bedrock	0.16
11D:							
Carbo	90	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50			Depth to bedrock	0.16
11E:							
Carbo	90	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.22	Depth to bedrock	0.16
11F:							
Carbo	90	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to bedrock	0.16

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
12D:							
Carbo	80	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.02			Depth to bedrock	0.16
Rock outcrop	15	Not rated		Not rated		Not rated	
12E:							
Carbo	75	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to bedrock	0.16
Rock outcrop	15	Not rated		Not rated		Not rated	
13E:							
Carbo	65	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.96	Depth to bedrock	0.16
Rock outcrop	20	Not rated		Not rated		Not rated	
14C:							
Cedarcreek	50	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
						Slope	0.16
						Gravel content	0.02
Alticrest	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.47	Large stones content	0.47	Slope	0.16
						Depth to bedrock	0.10
		Too sandy	0.01	Too sandy	0.01	Droughty	0.01
Rock outcrop	15	Not rated		Not rated		Not rated	
14E:							
Cedarcreek	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.50	Slope	1.00
		Large stones content	0.50	Slope	0.08	Large stones content	1.00
						Gravel content	0.02
Alticrest	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.47	Slope	1.00
		Large stones content	0.47	Slope	0.08	Depth to bedrock	0.10
		Too sandy	0.01	Too sandy	0.01	Droughty	0.01
Rock outcrop	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek	80	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
						Gravel content	0.02
						Slope	0.01
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
15D:							
Cedarcreek----------	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.50	Slope	1.00
		Large stones content	0.50			Large stones content	1.00
						Gravel content	0.02
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15E:							
Cedarcreek----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
						Gravel content	0.02
Rock outcrop--------	15	Not rated		Not rated		Not rated	
16D:							
Chiswell------------	60	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
Litz----------------	35	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to bedrock	0.80
						Droughty	0.07
16E:							
Chiswell------------	60	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
Litz----------------	35	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Depth to bedrock	0.80
						Droughty	0.07
16F:							
Chiswell------------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	1.00
Litz----------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.80
						Droughty	0.07
17B:							
Coursey-------------	85	Not limited		Not limited		Not limited	

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
18B:							
Craigsville	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Gravel content	0.92
						Large stones content	0.08
19D:							
Drypond	65	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Depth to bedrock	1.00
		Slope	1.00			Slope	1.00
						Droughty	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
19E:							
Drypond	65	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Depth to bedrock	1.00
		Large stones content	1.00	Slope	1.00	Slope	1.00
						Droughty	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	
20B:							
Frederick	90	Not limited		Not limited		Not limited	
20C:							
Frederick	90	Not limited		Not limited		Somewhat limited	
						Slope	0.37
20D:							
Frederick	95	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
20E:							
Frederick	90	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
20F:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
21B:							
Frederick	90	Not limited		Not limited		Somewhat limited	
						Gravel content	0.68
21C:							
Frederick	90	Not limited		Not limited		Somewhat limited	
						Gravel content	0.68
						Slope	0.37
21D:							
Frederick	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.68
21E:							
Frederick	90	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.68

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
21F:							
Frederick	90	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope Gravel content	 1.00 0.68
22B:							
Frederick	90	Not limited		Not limited		Not limited	
22C:							
Frederick	90	Not limited		Not limited		Somewhat limited Slope	 0.37
22D:							
Frederick	90	Somewhat limited Slope	 0.50	Not limited		Very limited Slope	 1.00
22E:							
Frederick	90	Very limited Slope	 1.00	Somewhat limited Slope	 0.22	Very limited Slope	 1.00
23C:							
Gilpin	50	Very limited Water erosion	 1.00	Very limited Water erosion	 1.00	Somewhat limited Slope Depth to bedrock	 0.37 0.10
Berks	35	Not limited		Not limited		Somewhat limited Droughty Slope Depth to bedrock	 0.86 0.37 0.20
23D:							
Gilpin	50	Very limited Water erosion Slope	 1.00 0.50	Very limited Water erosion	 1.00	Very limited Slope Depth to bedrock	 1.00 0.10
Berks	35	Somewhat limited Slope	 0.50	Not limited		Very limited Slope Droughty Depth to bedrock	 1.00 0.86 0.20
24C:							
Grimsley	90	Somewhat limited Large stones content	 0.47	Somewhat limited Large stones content	 0.47	Somewhat limited Slope Droughty Large stones content	 0.63 0.20 0.01
24D:							
Grimsley	90	Very limited Slope Large stones content	 1.00 0.47	Somewhat limited Large stones content	 0.47	Very limited Slope Droughty Large stones content	 1.00 0.20 0.01
24E:							
Grimsley	85	Very limited Slope Large stones content	 1.00 0.47	Very limited Slope Large stones content	 1.00 0.47	Very limited Slope Droughty Large stones content	 1.00 0.20 0.01

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
25D:							
Grimsley	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.82	Large stones content	0.47	Slope	1.00
		Large stones content	0.47			Droughty	0.20
						Large stones content	0.01
Cedarcreek	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.82	Large stones content	0.50	Large stones content	1.00
		Large stones content	0.50			Slope	1.00
						Gravel content	0.02
Berks	25	Somewhat limited		Not limited		Very limited	
		Slope	0.82			Slope	1.00
						Droughty	0.86
						Depth to bedrock	0.20
25E:							
Grimsley	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Droughty	0.20
						Large stones content	0.01
Cedarcreek	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.50	Large stones content	0.50	Large stones content	1.00
						Gravel content	0.02
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.86
						Depth to bedrock	0.20
26B:							
Groseclose	85	Not limited		Not limited		Not limited	
26C:							
Groseclose	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
26D:							
Groseclose	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50				
26E:							
Groseclose	85	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.22		
27B:							
Guernsey	85	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.03

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
27C:							
Guernsey	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
						Depth to saturated zone	0.03
28C:							
Lily	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.01	Too sandy	0.01	Slope	0.37
						Depth to bedrock	0.06
28D:							
Lily	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Too sandy	0.01	Slope	1.00
		Too sandy	0.01			Depth to bedrock	0.06
28E:							
Lily	95	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.06
28F:							
Lily	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.01	Too sandy	0.01	Depth to bedrock	0.06
29D:							
Lily	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.47	Slope	1.00
		Large stones content	0.47	Too sandy	0.01	Depth to bedrock	0.06
		Too sandy	0.01				
29E:							
Lily	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Depth to bedrock	0.06
		Too sandy	0.01	Too sandy	0.01		
30C:							
Madsheep	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.84
						Droughty	0.40
						Slope	0.37
30D:							
Madsheep	90	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.84
						Droughty	0.40
31E:							
Madsheep	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Depth to bedrock	0.84
						Droughty	0.40

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
32A:							
Melvin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
33:							
Mine Tipples	8	Not rated		Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated		Not rated	
34B:							
Murrill	95	Not limited		Not limited		Not limited	
34C:							
Murrill	95	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
34D:							
Murrill	90	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50				
35A:							
Newark	45	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Flooding	0.60
Lindside	40	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
						Depth to saturated zone	0.03
36F:							
Newbern	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
						Slope	1.00
						Droughty	0.99
Rock outcrop	30	Not rated		Not rated		Not rated	
37C:							
Oriskany	90	Not limited		Not limited		Somewhat limited	
						Gravel content	0.66
						Slope	0.37
37D:							
Oriskany	90	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.66
38C:							
Oriskany	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.47	Large stones content	0.47	Gravel content	0.66
						Slope	0.37

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
38D:							
Oriskany------------	95	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.47	Slope	1.00
		Large stones content	0.47			Gravel content	0.66
38E:							
Oriskany------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Gravel content	0.66
39D:							
Paddyknob-----------	75	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	1.00			Droughty	0.80
						Depth to bedrock	0.80
Rock outcrop--------	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob-----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	1.00	Droughty	0.80
						Depth to bedrock	0.80
Rock outcrop--------	25	Not rated		Not rated		Not rated	
40D:							
Paddyknob-----------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.47	Slope	1.00
		Large stones content	0.47			Droughty	0.80
						Depth to bedrock	0.80
40E:							
Paddyknob-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Droughty	0.80
						Depth to bedrock	0.80
41A:							
Philo---------------	90	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
						Depth to saturated zone	0.03
42B:							
Pisgah--------------	95	Not limited		Not limited		Not limited	
42C:							
Pisgah--------------	95	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
43B:							
Pisgah--------------	95	Not limited		Not limited		Not limited	
43C:							
Pisgah--------------	95	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
44:							
Pits, quarry	100	Not rated		Not rated		Not rated	
45A:							
Pope	85	Not limited		Not limited		Not limited	
46C:							
Poplimento	45	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
Westmoreland	40	Not limited		Not limited		Somewhat limited	
						Slope	0.37
46D:							
Poplimento	60	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50				
Westmoreland	35	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
47A:							
Purdy	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
48B:							
Timberville	85	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
49B:							
Tumbling	90	Somewhat limited		Somewhat limited		Not limited	
		Large stones content	0.47	Large stones content	0.47		
49C:							
Tumbling	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Large stones content	0.47	Large stones content	0.47	Slope	0.37
50:							
Udorthents	45	Not rated		Not rated		Not rated	
Urban land	30	Not rated		Not rated		Not rated	
51D:							
Wallen	65	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
						Droughty	0.99
		Slope	1.00			Depth to bedrock	0.90
Rock outcrop	25	Not rated		Not rated		Not rated	
51E:							
Wallen	65	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00			Droughty	0.99
				Slope	1.00	Depth to bedrock	0.90
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
52C:							
Wallen	90	Somewhat limited		Somewhat limited		Very limited	
		Large stones content	0.47	Large stones content	0.47	Droughty	0.99
						Depth to bedrock	0.90
						Slope	0.37
52D:							
Wallen	90	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.47	Slope	1.00
		Large stones content	0.47			Droughty	0.99
						Depth to bedrock	0.90
52E:							
Wallen	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.47	Large stones content	0.47	Droughty	0.99
						Depth to bedrock	0.90
53E:							
Westmoreland	60	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
Poplimento	20	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.22		
Berks	15	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Droughty	0.86
						Depth to bedrock	0.20
53F:							
Westmoreland	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Poplimento	30	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00		
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.86
						Depth to bedrock	0.20
54A:							
Wolfgap	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
W:							
Water	100	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part I

(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
1A:							
Allegheny-------	85	Not limited		Not limited		Not limited	
1B:							
Allegheny-------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
2C:							
Alticrest-------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.37	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Slope	0.37	Depth to hard bedrock	0.10
2D:							
Alticrest-------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
2E:							
Alticrest-------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
3C:							
Berks-----------	50	Somewhat limited		Very limited		Very limited	
		Slope	0.37	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	0.37	Depth to hard bedrock	0.20
Weikert---------	35	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	0.37	Slope	0.37	Slope	1.00
3D:							
Berks-----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
Weikert---------	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
3E:							
Berks-----------	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
3E:							
Weikert	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
4E:							
Berks	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
Gilpin	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
4F:							
Berks	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
Gilpin	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
5D:							
Bland	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.06	Shrink-swell	0.50	Depth to hard bedrock	0.06
Rock outcrop	15	Not rated		Not rated		Not rated	
5E:							
Bland	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.06	Shrink-swell	0.50	Depth to hard bedrock	0.06
Rock outcrop	15	Not rated		Not rated		Not rated	
6B:							
Bland	85	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.06	Shrink-swell	0.50	Slope	0.12
						Depth to hard bedrock	0.06
6C:							
Bland	85	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.37	Shrink-swell	0.50	Shrink-swell	0.50
		Depth to hard bedrock	0.06	Slope	0.37	Depth to hard bedrock	0.06

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
6D:							
Bland-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	1.00	Shrink-swell	0.50
		Depth to hard bedrock	0.06	Shrink-swell	0.50	Depth to hard bedrock	0.06
7C:							
Botetourt-------	95	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.37	Slope	0.37	Depth to saturated zone	0.39
8D:							
Brushy----------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.95	Depth to hard bedrock	1.00	Depth to hard bedrock	0.95
8E:							
Brushy----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.95	Depth to hard bedrock	1.00	Depth to hard bedrock	0.95
9D:							
Calvin----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
9E:							
Calvin----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
10D:							
Calvin----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
10E:							
Calvin----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
11C:							
Carbo-----------	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.37	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.15	Slope	0.37	Depth to hard bedrock	0.15

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
11D:							
Carbo-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Depth to hard bedrock	0.15
11E:							
Carbo-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Depth to hard bedrock	0.15
11F:							
Carbo-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Depth to hard bedrock	0.15
12D:							
Carbo-----------	80	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.15	Slope	1.00	Depth to hard bedrock	0.15
Rock outcrop----	15	Not rated		Not rated		Not rated	
12E:							
Carbo-----------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Depth to hard bedrock	0.15
Rock outcrop----	15	Not rated		Not rated		Not rated	
13E:							
Carbo-----------	65	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.15	Slope	1.00	Depth to hard bedrock	0.15
Rock outcrop----	20	Not rated		Not rated		Not rated	
14C:							
Cedarcreek------	50	Very limited		Very limited		Very limited	
		Unstable fill	1.00	Unstable fill	1.00	Unstable fill	1.00
		Large stones content	0.99	Large stones content	0.99	Slope	1.00
		Slope	0.16	Slope	0.16	Large stones content	0.99
Alticrest-------	30	Somewhat limited		Very limited		Very limited	
		Slope	0.16	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Slope	0.16	Depth to hard bedrock	0.10
Rock outcrop----	15	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
14E:							
Cedarcreek------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Unstable fill	1.00	Unstable fill	1.00	Unstable fill	1.00
		Large stones content	0.99	Large stones content	0.99	Large stones content	0.99
Alticrest-------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
Rock outcrop----	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek------	80	Very limited		Very limited		Very limited	
		Unstable fill	1.00	Unstable fill	1.00	Unstable fill	1.00
		Large stones content	0.99	Large stones content	0.99	Slope	1.00
		Slope	0.01	Slope	0.01	Large stones content	0.99
Rock outcrop----	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Unstable fill	1.00	Unstable fill	1.00	Unstable fill	1.00
		Large stones content	0.99	Large stones content	0.99	Large stones content	0.99
Rock outcrop----	15	Not rated		Not rated		Not rated	
15E:							
Cedarcreek------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Unstable fill	1.00	Unstable fill	1.00	Unstable fill	1.00
		Large stones content	0.99	Large stones content	0.99	Large stones content	0.99
Rock outcrop----	15	Not rated		Not rated		Not rated	
16D:							
Chiswell--------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.99	Depth to hard bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to hard bedrock	0.99
Litz------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
16E:							
Chiswell--------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.99	Depth to hard bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to hard bedrock	0.99

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
16E:							
Litz	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
16F:							
Chiswell	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.99	Depth to hard bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to hard bedrock	0.99
Litz	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
17B:							
Coursey	85	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	0.99	Slope	0.12
18B:							
Craigsville	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Large stones content	0.95	Large stones content	0.95	Large stones content	0.95
19D:							
Drypond	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
Rock outcrop	25	Not rated		Not rated		Not rated	
19E:							
Drypond	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
Rock outcrop	25	Not rated		Not rated		Not rated	
20B:							
Frederick	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
20C:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
20D:							
Frederick	95	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

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
20E:							
Frederick-------	90	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
20F:							
Frederick-------	90	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
21B:							
Frederick-------	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
21C:							
Frederick-------	90	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
21D:							
Frederick-------	85	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
21E:							
Frederick-------	90	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
21F:							
Frederick-------	90	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
22B:							
Frederick-------	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
22C:							
Frederick-------	90	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
22D:							
Frederick-------	90	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
22E:							
Frederick-------	90	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
23C:							
Gilpin----------	50	Somewhat limited		Very limited		Very limited	
		Slope	0.37	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Slope	0.37	Depth to hard bedrock	0.10

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
23C:							
Berks	35	Somewhat limited		Very limited		Very limited	
		Slope	0.37	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	0.37	Depth to hard bedrock	0.20
23D:							
Gilpin	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
24C:							
Grimsley	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
24D:							
Grimsley	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
24E:							
Grimsley	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
25D:							
Grimsley	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Cedarcreek	30	Very limited		Very limited		Very limited	
		Unstable fill	1.00	Unstable fill	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Unstable fill	1.00
		Large stones content	0.99	Large stones content	0.99	Large stones content	0.99
Berks	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Depth to hard bedrock	0.20
25E:							
Grimsley	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Cedarcreek	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Unstable fill	1.00	Unstable fill	1.00	Unstable fill	1.00
		Large stones content	0.99	Large stones content	0.99	Large stones content	0.99
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
26B:							
Groseclose------	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
						Slope	0.12
26C:							
Groseclose------	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
26D:							
Groseclose------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
26E:							
Groseclose------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
27B:							
Guernsey--------	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.07	Shrink-swell	1.00	Slope	0.12
						Depth to saturated zone	0.07
27C:							
Guernsey--------	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Slope	0.37	Shrink-swell	1.00	Slope	1.00
		Depth to saturated zone	0.07	Slope	0.37	Depth to saturated zone	0.07
28C:							
Lily------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.37	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.06	Slope	0.37	Depth to hard bedrock	0.06
28D:							
Lily------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Depth to hard bedrock	0.06
28E:							
Lily------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Depth to hard bedrock	0.06
28F:							
Lily------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Depth to hard bedrock	0.06

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
29D:							
Lily-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Depth to hard bedrock	0.06
29E:							
Lily-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Depth to hard bedrock	0.06
30C:							
Madsheep--------	85	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.37	Slope	0.37	Depth to hard bedrock	0.84
30D:							
Madsheep--------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to hard bedrock	0.84
31E:							
Madsheep--------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to hard bedrock	0.84
32A:							
Melvin----------	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		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
33:							
Mine Tipples----	8	Not rated		Not rated		Not rated	
Mine Dumps------	55	Not rated		Not rated		Not rated	
Mine Tailings---	35	Not rated		Not rated		Not rated	
34B:							
Murrill---------	95	Not limited		Not limited		Somewhat limited	
						Slope	0.12
34C:							
Murrill---------	95	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
34D:							
Murrill---------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
35A:							
Newark----------	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

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
35A:							
Lindside	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
36F:							
Newbern	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
Rock outcrop	30	Not rated		Not rated		Not rated	
37C:							
Oriskany	90	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.37	Slope	0.37	Large stones content	1.00
37D:							
Oriskany	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
38C:							
Oriskany	90	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.37	Slope	0.37	Large stones content	1.00
38D:							
Oriskany	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
38E:							
Oriskany	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
39D:							
Paddyknob	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
Rock outcrop	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob	70	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
40D:							
Paddyknob-------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
40E:							
Paddyknob-------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
41A:							
Philo-----------	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.07	Depth to saturated zone	1.00	Depth to saturated zone	0.07
42B:							
Pisgah----------	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
42C:							
Pisgah----------	95	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
43B:							
Pisgah----------	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
43C:							
Pisgah----------	95	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.37	Slope	0.37	Shrink-swell	0.50
44:							
Pits, quarry----	100	Not rated		Not rated		Not rated	
45A:							
Pope------------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
46C:							
Poplimento------	45	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.37	Slope	0.37	Slope	1.00
Westmoreland----	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
46D:							
Poplimento------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Westmoreland----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
47A:							
Purdy	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
48B:							
Timberville	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Shrink-swell	0.50		
49B:							
Tumbling	90	Not limited		Not limited		Somewhat limited	
						Slope	0.12
49C:							
Tumbling	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
50:							
Udorthents	45	Not rated		Not rated		Not rated	
Urban land	30	Not rated		Not rated		Not rated	
51D:							
Wallen	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
Rock outcrop	25	Not rated		Not rated		Not rated	
51E:							
Wallen	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
Rock outcrop	25	Not rated		Not rated		Not rated	
52C:							
Wallen	90	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.37	Slope	0.37	Depth to hard bedrock	0.90
52D:							
Wallen	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
52E:							
Wallen	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
53E:							
Westmoreland----	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Poplimento------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Berks-----------	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
53F:							
Westmoreland----	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Poplimento------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Berks-----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
54A:							
Wolfgap---------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part II

(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
1A:							
Allegheny	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
1B:							
Allegheny	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
2C:							
Alticrest	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Slope	0.37
		Slope	0.37	Slope	0.37	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Droughty	0.01
2D:							
Alticrest	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Droughty	0.01
2E:							
Alticrest	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Droughty	0.01
3C:							
Berks	50	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.37	Depth to hard bedrock	1.00	Droughty	0.86
		Depth to hard bedrock	0.20	Slope	0.37	Slope	0.37
				Cutbanks cave	0.10	Depth to bedrock	0.20
Weikert	35	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Slope	0.37	Droughty	1.00
		Slope	0.37	Cutbanks cave	0.10	Gravel content	0.54
3D:							
Berks	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Droughty	0.86
				Cutbanks cave	0.10	Depth to bedrock	0.20
Weikert	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

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
3E:							
Berks	55	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Droughty	0.86
				Cutbanks cave	0.10	Depth to bedrock	0.20
Weikert	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
4E:							
Berks	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Droughty	0.86
				Cutbanks cave	0.10	Depth to bedrock	0.20
Gilpin	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.10
		Frost action	0.50	Cutbanks cave	0.10		
4F:							
Berks	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Droughty	0.86
				Cutbanks cave	0.10	Depth to bedrock	0.20
Gilpin	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.10
		Frost action	0.50	Cutbanks cave	0.10		
5D:							
Bland	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.06
		Shrink-swell	0.50	Too clayey	0.72		
Rock outcrop	15	Not rated		Not rated		Not rated	
5E:							
Bland	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.06
		Shrink-swell	0.50	Too clayey	0.72		
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
6B:							
Bland	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.06
		Shrink-swell	0.50	Too clayey	0.72		
		Frost action	0.50	Cutbanks cave	0.10		
6C:							
Bland	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	0.37
		Shrink-swell	0.50	Too clayey	0.72	Depth to bedrock	0.06
		Frost action	0.50	Slope	0.37		
6D:							
Bland	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.06
		Shrink-swell	0.50	Too clayey	0.72		
7C:							
Botetourt	95	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Slope	0.37
		Low strength	1.00	Cutbanks cave	1.00	Depth to saturated zone	0.19
		Slope	0.37	Slope	0.37		
8D:							
Brushy	75	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.95	Slope	1.00	Droughty	0.95
		Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.95
8E:							
Brushy	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.95	Slope	1.00	Droughty	0.95
		Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.95
9D:							
Calvin	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10	Droughty	0.06
9E:							
Calvin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10	Droughty	0.06

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
10D:							
Calvin--------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10	Droughty	0.06
10E:							
Calvin--------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10	Droughty	0.06
11C:							
Carbo---------------	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	0.37
		Shrink-swell	1.00	Too clayey	1.00	Depth to bedrock	0.16
		Frost action	0.50	Slope	0.37		
11D:							
Carbo---------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.16
		Shrink-swell	1.00	Too clayey	1.00		
11E:							
Carbo---------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.16
		Shrink-swell	1.00	Too clayey	1.00		
11F:							
Carbo---------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.16
		Shrink-swell	1.00	Too clayey	1.00		
12D:							
Carbo---------------	80	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	1.00	Too clayey	1.00	Depth to bedrock	0.16
		Slope	1.00	Slope	1.00		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
12E:							
Carbo---------------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.16
		Shrink-swell	1.00	Too clayey	1.00		
Rock outcrop--------	15	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
13E:							
Carbo----------------	65	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	1.00	Too clayey	1.00	Depth to bedrock	0.16
		Slope	1.00	Slope	1.00		
Rock outcrop--------	20	Not rated		Not rated		Not rated	
14C:							
Cedarcreek----------	50	Very limited		Very limited		Very limited	
		Unstable fill	1.00	Large stones content	0.99	Large stones content	1.00
		Large stones content	0.99	Slope	0.16	Slope	0.16
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.02
Alticrest-----------	30	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Slope	0.16
		Slope	0.16	Slope	0.16	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Droughty	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
14E:							
Cedarcreek----------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Unstable fill	1.00	Large stones content	0.99	Large stones content	1.00
		Large stones content	0.99	Cutbanks cave	0.10	Gravel content	0.02
Alticrest-----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Droughty	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek----------	80	Very limited		Very limited		Very limited	
		Unstable fill	1.00	Large stones content	0.99	Large stones content	1.00
		Large stones content	0.99	Cutbanks cave	0.10	Gravel content	0.02
		Frost action	0.50	Slope	0.01	Slope	0.01
Rock outcrop--------	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Unstable fill	1.00	Large stones content	0.99	Large stones content	1.00
		Large stones content	0.99	Cutbanks cave	0.10	Gravel content	0.02
Rock outcrop--------	15	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
15E:							
Cedarcreek----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Unstable fill	1.00	Large stones content	0.99	Large stones content	1.00
		Large stones content	0.99	Cutbanks cave	0.10	Gravel content	0.02
Rock outcrop--------	15	Not rated		Not rated		Not rated	
16D:							
Chiswell------------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.99	Slope	1.00	Droughty	1.00
Litz----------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Slope	1.00	Depth to bedrock	0.80
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.07
16E:							
Chiswell------------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.99	Slope	1.00	Droughty	1.00
Litz----------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Slope	1.00	Depth to bedrock	0.80
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.07
16F:							
Chiswell------------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.99	Slope	1.00	Droughty	1.00
Litz----------------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Slope	1.00	Depth to bedrock	0.80
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.07
17B:							
Coursey-------------	85	Very limited		Very limited		Not limited	
		Frost action	1.00	Depth to saturated zone	0.99		
				Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
18B:							
Craigsville	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
		Large stones content	0.95	Large stones content	0.95	Gravel content	0.92
						Large stones content	0.08
		Frost action	0.50	Flooding	0.80		
19D:							
Drypond	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	Droughty	1.00
				Cutbanks cave	0.10		
Rock outcrop	25	Not rated		Not rated		Not rated	
19E:							
Drypond	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	Droughty	1.00
				Cutbanks cave	0.10		
Rock outcrop	25	Not rated		Not rated		Not rated	
20B:							
Frederick	90	Very limited		Very limited		Not limited	
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
20C:							
Frederick	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.37
		Shrink-swell	0.50	Slope	0.37		
		Frost action	0.50	Cutbanks cave	0.10		
20D:							
Frederick	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
20E:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
20F:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
21B:							
Frederick	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Gravel content	0.68
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
21C:							
Frederick	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Gravel content	0.68
		Shrink-swell	0.50	Slope	0.37	Slope	0.37
		Frost action	0.50	Cutbanks cave	0.10		
21D:							
Frederick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00	Gravel content	0.68
		Shrink-swell	0.50	Cutbanks cave	0.10		
21E:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00	Gravel content	0.68
		Shrink-swell	0.50	Cutbanks cave	0.10		
21F:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00	Gravel content	0.68
		Shrink-swell	0.50	Cutbanks cave	0.10		
22B:							
Frederick	90	Very limited		Very limited		Not limited	
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
22C:							
Frederick	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.37
		Shrink-swell	0.50	Slope	0.37		
		Frost action	0.50	Cutbanks cave	0.10		
22D:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
22E:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
23C:							
Gilpin	50	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	0.37
		Frost action	0.50			Depth to bedrock	0.10
		Slope	0.37	Slope	0.37		
				Cutbanks cave	0.10		
Berks	35	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.37	Depth to hard bedrock	1.00	Droughty	0.86
		Depth to hard bedrock	0.20			Slope	0.37
				Slope	0.37	Depth to bedrock	0.20
				Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
23D:							
Gilpin	50	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.10
		Frost action	0.50	Slope	1.00		
				Cutbanks cave	0.10		
Berks	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20			Droughty	0.86
				Slope	1.00	Depth to bedrock	0.20
				Cutbanks cave	0.10		
24C:							
Grimsley	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.20
						Large stones content	0.01
24D:							
Grimsley	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.20
						Large stones content	0.01
24E:							
Grimsley	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.20
						Large stones content	0.01
25D:							
Grimsley	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.20
						Large stones content	0.01
Cedarcreek	30	Very limited		Very limited		Very limited	
		Unstable fill	1.00	Slope	1.00	Large stones content	1.00
		Slope	1.00	Large stones content	0.99		
		Large stones content	0.99			Slope	1.00
				Cutbanks cave	0.10	Gravel content	0.02
Berks	25	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20			Droughty	0.86
				Slope	1.00	Depth to bedrock	0.20
				Cutbanks cave	0.10		
25E:							
Grimsley	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.20
						Large stones content	0.01

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
25E:							
Cedarcreek----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Unstable fill	1.00	Large stones content	0.99	Large stones content	1.00
		Large stones content	0.99	Cutbanks cave	0.10	Gravel content	0.02
Berks---------------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Droughty	0.86
				Cutbanks cave	0.10	Depth to bedrock	0.20
26B:							
Groseclose----------	85	Very limited		Somewhat limited		Not limited	
		Shrink-swell	1.00	Too clayey	0.28		
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
26C:							
Groseclose----------	85	Very limited		Somewhat limited		Somewhat limited	
		Shrink-swell	1.00	Slope	0.37	Slope	0.37
		Low strength	1.00	Too clayey	0.28		
		Frost action	0.50	Cutbanks cave	0.10		
26D:							
Groseclose----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Too clayey	0.28		
		Low strength	1.00	Cutbanks cave	0.10		
26E:							
Groseclose----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Too clayey	0.28		
		Low strength	1.00	Cutbanks cave	0.10		
27B:							
Guernsey------------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.03
		Low strength	1.00	Too clayey	0.24		
		Shrink-swell	1.00	Cutbanks cave	0.10		
27C:							
Guernsey------------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Slope	0.37
		Low strength	1.00	Slope	0.37	Depth to saturated zone	0.03
		Shrink-swell	1.00	Too clayey	0.24		
28C:							
Lily----------------	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	0.37
		Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.06
		Slope	0.37	Slope	0.37		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
28D:							
Lily----------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.06
		Frost action	0.50	Slope	1.00		
				Cutbanks cave	1.00		
28E:							
Lily----------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.06
		Frost action	0.50	Slope	1.00		
				Cutbanks cave	1.00		
28F:							
Lily----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.06
		Frost action	0.50	Slope	1.00		
				Cutbanks cave	1.00		
29D:							
Lily----------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.06
		Frost action	0.50	Slope	1.00		
				Cutbanks cave	1.00		
29E:							
Lily----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00			Depth to bedrock	0.06
		Frost action	0.50	Slope	1.00		
				Cutbanks cave	1.00		
30C:							
Madsheep------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to bedrock	0.84
						Droughty	0.40
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		
30D:							
Madsheep------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.84			Depth to bedrock	0.84
				Slope	1.00	Droughty	0.40
		Frost action	0.50	Cutbanks cave	0.10		
31E:							
Madsheep------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.84			Depth to bedrock	0.84
				Slope	1.00	Droughty	0.40
		Frost action	0.50	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
32A:							
Melvin	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
33:							
Mine Tipples	8	Not rated		Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated		Not rated	
34B:							
Murrill	95	Very limited		Very limited		Not limited	
		Low strength	1.00	Cutbanks cave	1.00		
		Frost action	0.50	Too clayey	0.01		
34C:							
Murrill	95	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	1.00	Slope	0.37
		Frost action	0.50	Slope	0.37		
		Slope	0.37	Too clayey	0.01		
34D:							
Murrill	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	1.00		
		Frost action	0.50	Too clayey	0.01		
35A:							
Newark	45	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Low strength	1.00	Cutbanks cave	0.10		
Lindside	40	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.03
		Low strength	1.00	Cutbanks cave	0.10		
36F:							
Newbern	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
		Low strength	0.78	Cutbanks cave	0.10	Droughty	0.99
Rock outcrop	30	Not rated		Not rated		Not rated	
37C:							
Oriskany	90	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Gravel content	0.66
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
37D:							
Oriskany------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Gravel content	0.66
		Frost action	0.50	Cutbanks cave	0.10		
38C:							
Oriskany------------	90	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Gravel content	0.66
						Slope	0.37
		Frost action	0.50	Slope	0.37		
		Slope	0.37	Cutbanks cave	0.10		
38D:							
Oriskany------------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Gravel content	0.66
		Frost action	0.50	Cutbanks cave	0.10		
38E:							
Oriskany------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Gravel content	0.66
		Frost action	0.50	Cutbanks cave	0.10		
39D:							
Paddyknob-----------	75	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.79			Droughty	0.80
				Slope	1.00	Depth to bedrock	0.80
				Cutbanks cave	1.00		
Rock outcrop--------	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob-----------	70	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.79			Droughty	0.80
				Slope	1.00	Depth to bedrock	0.80
				Cutbanks cave	1.00		
Rock outcrop--------	25	Not rated		Not rated		Not rated	
40D:							
Paddyknob-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.79			Droughty	0.80
				Slope	1.00	Depth to bedrock	0.80
				Cutbanks cave	1.00		
40E:							
Paddyknob-----------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.79			Droughty	0.80
				Slope	1.00	Depth to bedrock	0.80
				Cutbanks cave	1.00		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
41A:							
Philo	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	0.50	Flooding	0.80	Depth to saturated zone	0.03
		Depth to saturated zone	0.03	Cutbanks cave	0.10		
42B:							
Pisgah	95	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Too clayey	0.50		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
42C:							
Pisgah	95	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Too clayey	0.50	Slope	0.37
		Low strength	1.00	Slope	0.37		
		Shrink-swell	0.50	Cutbanks cave	0.10		
43B:							
Pisgah	95	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Too clayey	0.50		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
43C:							
Pisgah	95	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Too clayey	0.50	Slope	0.37
		Low strength	1.00	Slope	0.37		
		Shrink-swell	0.50	Cutbanks cave	0.10		
44:							
Pits, quarry	100	Not rated		Not rated		Not rated	
45A:							
Pope	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
		Flooding	0.40				
46C:							
Poplimento	45	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	1.00	Too clayey	0.32		
		Frost action	0.50	Cutbanks cave	0.10		
Westmoreland	40	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.37				
46D:							
Poplimento	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.32		
		Shrink-swell	1.00	Cutbanks cave	0.10		
Westmoreland	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
47A:							
Purdy	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00		
48B:							
Timberville	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
		Low strength	1.00	Flooding	0.80		
		Frost action	0.50	Too clayey	0.32		
49B:							
Tumbling	90	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
49C:							
Tumbling	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		
50:							
Udorthents	45	Not rated		Not rated		Not rated	
Urban land	30	Not rated		Not rated		Not rated	
51D:							
Wallen	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Droughty	0.99
				Cutbanks cave	0.10	Depth to bedrock	0.90
Rock outcrop	25	Not rated		Not rated		Not rated	
51E:							
Wallen	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Droughty	0.99
				Cutbanks cave	0.10	Depth to bedrock	0.90
Rock outcrop	25	Not rated		Not rated		Not rated	
52C:							
Wallen	90	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Droughty	0.99
		Slope	0.37	Slope	0.37	Depth to bedrock	0.90
				Cutbanks cave	0.10	Slope	0.37
52D:							
Wallen	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Droughty	0.99
				Cutbanks cave	0.10	Depth to bedrock	0.90

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
52E:							
Wallen	90	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Droughty	0.99
				Cutbanks cave	0.10	Depth to bedrock	0.90
53E:							
Westmoreland	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
Poplimento	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.32		
		Shrink-swell	1.00	Cutbanks cave	0.10		
Berks	15	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Droughty	0.86
				Cutbanks cave	0.10	Depth to bedrock	0.20
53F:							
Westmoreland	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
Poplimento	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.32		
		Shrink-swell	1.00	Cutbanks cave	0.10		
Berks	20	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	1.00	Droughty	0.86
				Cutbanks cave	0.10	Depth to bedrock	0.20
54A:							
Wolfgap	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60		
W:							
Water	100	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities, Part I

(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
1A:					
Allegheny	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
1B:					
Allegheny	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
				Slope	0.68
		Slow water movement	0.50		
2C:					
Alticrest	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.37	Seepage	1.00
2D:					
Alticrest	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
2E:					
Alticrest	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
3C:					
Berks	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.37	Seepage	1.00
Weikert	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.37	Seepage	1.00
3D:					
Berks	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—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
3D:					
Weikert-------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
3E:					
Berks---------------	55	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Weikert-------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
4E:					
Berks---------------	45	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Gilpin--------------	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
4F:					
Berks---------------	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Gilpin--------------	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
5D:					
Bland---------------	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
Rock outcrop--------	15	Not rated		Not rated	
5E:					
Bland---------------	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		

Table 12.—Sanitary Facilities, Part I—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
5E:					
Rock outcrop	15	Not rated		Not rated	
6B:					
Bland	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	0.68
6C:					
Bland	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Slope	0.37		
6D:					
Bland	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
7C:					
Botetourt	95	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	0.50	Depth to saturated zone	1.00
		Slope	0.37	Seepage	0.50
8D:					
Brushy	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
8E:					
Brushy	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
9D:					
Calvin	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
9E:					
Calvin	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—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
10D:					
Calvin	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
10E:					
Calvin	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
11C:					
Carbo	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.37		
11D:					
Carbo	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
11E:					
Carbo	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
11F:					
Carbo	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
12D:					
Carbo	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Rock outcrop	15	Not rated		Not rated	
12E:					
Carbo	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Rock outcrop	15	Not rated		Not rated	

Table 12.—Sanitary Facilities, Part I—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
13E:					
Carbo	65	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00		
Rock outcrop	20	Not rated		Not rated	
14C:					
Cedarcreek	50	Very limited		Very limited	
		Unstable fill	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Large stones content	0.99	Seepage	1.00
Alticrest	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.16	Slope	1.00
Rock outcrop	15	Not rated		Not rated	
14E:					
Cedarcreek	50	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Unstable fill	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Alticrest	30	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
15C:					
Cedarcreek	80	Very limited		Very limited	
		Unstable fill	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Large stones content	0.99	Slope	1.00
Rock outcrop	15	Not rated		Not rated	
15D:					
Cedarcreek	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Unstable fill	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	

Table 12.—Sanitary Facilities, Part I—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
15E:					
Cedarcreek	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Unstable fill	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Rock outcrop	15	Not rated		Not rated	
16D:					
Chiswell	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Depth to soft bedrock	1.00
				Slope	1.00
Litz	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
16E:					
Chiswell	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Depth to soft bedrock	1.00
				Slope	1.00
Litz	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
16F:					
Chiswell	60	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Depth to soft bedrock	1.00
				Slope	1.00
Litz	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
17B:					
Coursey	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50

Table 12.—Sanitary Facilities, Part I—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
18B:					
Craigsville	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Filtering capacity	1.00	Large stones content	1.00
19D:					
Drypond	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Rock outcrop	25	Not rated		Not rated	
19E:					
Drypond	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Rock outcrop	25	Not rated		Not rated	
20B:					
Frederick	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
20C:					
Frederick	90	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
20D:					
Frederick	95	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
20E:					
Frederick	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
20F:					
Frederick	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
21B:					
Frederick	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50

Table 12.—Sanitary Facilities, Part I—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
21C:					
Frederick-----------	90	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.37		
21D:					
Frederick-----------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
21E:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
21F:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
22B:					
Frederick-----------	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
22C:					
Frederick-----------	90	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.37		
22D:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
22E:					
Frederick-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
23C:					
Gilpin--------------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slow water movement	0.50		
				Slope	1.00
		Slope	0.37	Seepage	0.50
Berks---------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00		
				Slope	1.00
		Slope	0.37	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—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
23D:					
Gilpin--------------	50	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Berks---------------	35	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
24C:					
Grimsley------------	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.63	Seepage	1.00
24D:					
Grimsley------------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
24E:					
Grimsley------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
25D:					
Grimsley------------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Cedarcreek----------	30	Very limited		Very limited	
		Unstable fill	1.00	Slope	1.00
		Slope	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Berks---------------	25	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
25E:					
Grimsley------------	40	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Cedarcreek----------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Unstable fill	1.00	Large stones content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—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
25E:					
Berks	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
26B:					
Groseclose	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
26C:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.37		
26D:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
26E:					
Groseclose	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00		
27B:					
Guernsey	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slope	0.68
				Seepage	0.27
27C:					
Guernsey	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Depth to saturated zone	1.00
		Slope	0.37	Seepage	0.27
28C:					
Lily	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.37	Seepage	1.00
28D:					
Lily	95	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—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
28E:					
Lily----------------	95	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
28F:					
Lily----------------	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
29D:					
Lily----------------	80	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
29E:					
Lily----------------	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
30C:					
Madsheep------------	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.37	Seepage	1.00
30D:					
Madsheep------------	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
31E:					
Madsheep------------	95	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
32A:					
Melvin--------------	85	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 12.—Sanitary Facilities, Part I—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
33:					
Mine Tipples	8	Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated	
34B:					
Murrill	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.72	Slope	0.68
				Seepage	0.50
34C:					
Murrill	95	Somewhat limited		Very limited	
		Slow water movement	0.72	Slope	1.00
		Slope	0.37	Seepage	0.50
34D:					
Murrill	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.72	Seepage	0.50
35A:					
Newark	45	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50
Lindside	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50
36F:					
Newbern	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
				Seepage	0.50
Rock outcrop	30	Not rated		Not rated	
37C:					
Oriskany	90	Very limited		Very limited	
		Large stones content	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.37	Large stones content	1.00

Table 12.—Sanitary Facilities, Part I—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
37D:					
Oriskany-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Large stones content	1.00
38C:					
Oriskany-----------	90	Very limited		Very limited	
		Large stones content	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slope	0.37	Large stones content	1.00
38D:					
Oriskany-----------	95	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Large stones content	1.00
38E:					
Oriskany-----------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Large stones content	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Large stones content	1.00
39D:					
Paddyknob----------	75	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Rock outcrop--------	20	Not rated		Not rated	
39E:					
Paddyknob----------	70	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
Rock outcrop--------	25	Not rated		Not rated	
40D:					
Paddyknob----------	85	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—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
40E:					
Paddyknob-----------	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
41A:					
Philo---------------	90	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
42B:					
Pisgah--------------	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
42C:					
Pisgah--------------	95	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
43B:					
Pisgah--------------	95	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
43C:					
Pisgah--------------	95	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
44:					
Pits, quarry--------	100	Not rated		Not rated	
45A:					
Pope----------------	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Flooding	0.40	Flooding	0.40
46C:					
Poplimento----------	45	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.37		
Westmoreland--------	40	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50

Table 12.—Sanitary Facilities, Part I—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
46D:					
Poplimento----------	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
Westmoreland--------	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
47A:					
Purdy---------------	85	Very limited		Very limited	
		Slow water movement	1.00	Ponding	1.00
				Depth to saturated zone	1.00
		Ponding	1.00		
		Depth to saturated zone	1.00		
48B:					
Timberville---------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
49B:					
Tumbling------------	90	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
49C:					
Tumbling------------	90	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.37		
50:					
Udorthents----------	45	Not rated		Not rated	
Urban land----------	30	Not rated		Not rated	
51D:					
Wallen--------------	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00		
		Seepage, bottom layer	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop--------	25	Not rated		Not rated	
51E:					
Wallen--------------	65	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00		
		Seepage, bottom layer	1.00	Slope	1.00
				Seepage	1.00
Rock outcrop--------	25	Not rated		Not rated	

Table 12.—Sanitary Facilities, Part I—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
52C:					
Wallen	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Slope	1.00
		Slope	0.37	Seepage	1.00
52D:					
Wallen	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
52E:					
Wallen	90	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
53E:					
Westmoreland	60	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Poplimento	20	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
Berks	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
53F:					
Westmoreland	45	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
Poplimento	30	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00		
Berks	20	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—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
54A:					
Wolfgap-------------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50		
W:					
Water---------------	100	Not rated		Not rated	

Table 12.—Sanitary Facilities, Part II

(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: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
1A:							
Allegheny-------	85	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.21
						Gravel content	0.01
1B:							
Allegheny-------	85	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.21
						Gravel content	0.01
2C:							
Alticrest-------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
		Slope	0.37	Slope	0.37	Slope	0.37
2D:							
Alticrest-------	90	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
2E:							
Alticrest-------	90	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
3C:							
Berks-----------	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
Weikert---------	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Slope	0.37	Gravel content	1.00
		Slope	0.37			Seepage	0.50
3D:							
Berks-----------	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
3D:							
Weikert	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, bottom layer	1.00			Gravel content	1.00
3E:							
Berks	55	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
Weikert	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, bottom layer	1.00			Gravel content	1.00
4E:							
Berks	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
Gilpin	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
		Too clayey	0.50			Too clayey	0.50
4F:							
Berks	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
Gilpin	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
		Too clayey	0.50			Too clayey	0.50
5D:							
Bland	80	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
		Too clayey	1.00			Too clayey	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
5E:							
Bland	80	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
		Too clayey	1.00			Too clayey	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
6B:							
Bland-----------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
6C:							
Bland-----------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Hard to compact	1.00
6D:							
Bland-----------	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
		Too clayey	1.00			Too clayey	1.00
7C:							
Botetourt-------	95	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37
8D:							
Brushy----------	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
						Gravel content	0.89
8E:							
Brushy----------	80	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	0.89
9D:							
Calvin----------	90	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
9E:							
Calvin----------	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
10D:							
Calvin----------	90	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
10E:							
Calvin----------	90	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
11C:							
Carbo-----------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Hard to compact	1.00
11D:							
Carbo-----------	90	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
		Too clayey	1.00			Too clayey	1.00
11E:							
Carbo-----------	90	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
		Too clayey	1.00			Too clayey	1.00
11F:							
Carbo-----------	90	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
		Too clayey	1.00			Too clayey	1.00
12D:							
Carbo-----------	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
Rock outcrop----	15	Not rated		Not rated		Not rated	
12E:							
Carbo-----------	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
		Too clayey	1.00			Too clayey	1.00
Rock outcrop----	15	Not rated		Not rated		Not rated	
13E:							
Carbo-----------	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
Rock outcrop----	20	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
14C:							
Cedarcreek------	50	Very limited		Very limited		Very limited	
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00	Slope	0.16	Seepage	0.21
		Slope	0.16			Slope	0.16
Alticrest-------	30	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
		Slope	0.16	Slope	0.16	Slope	0.16
Rock outcrop----	15	Not rated		Not rated		Not rated	
14E:							
Cedarcreek------	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00			Seepage	0.21
Alticrest-------	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Rock outcrop----	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek------	80	Very limited		Very limited		Very limited	
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00	Slope	0.01	Seepage	0.21
		Slope	0.01			Slope	0.01
Rock outcrop----	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00			Seepage	0.21
Rock outcrop----	15	Not rated		Not rated		Not rated	
15E:							
Cedarcreek------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00			Seepage	0.21
Rock outcrop----	15	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
16D:							
Chiswell--------	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
						Gravel content	0.74
Litz------------	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
						Gravel content	0.86
16E:							
Chiswell--------	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
						Gravel content	0.74
Litz------------	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
						Gravel content	0.86
16F:							
Chiswell--------	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
						Gravel content	0.74
Litz------------	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
						Gravel content	0.86
17B:							
Coursey---------	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.47
18B:							
Craigsville-----	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Large stones	1.00
		Large stones	1.00			Too sandy	0.50
19D:							
Drypond---------	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, bottom layer	1.00			Seepage	1.00
Rock outcrop----	25	Not rated		Not rated		Not rated	
19E:							
Drypond---------	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, bottom layer	1.00			Seepage	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
19E:							
Rock outcrop----	25	Not rated		Not rated		Not rated	
20B:							
Frederick-------	90	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
20C:							
Frederick-------	90	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Slope	0.37
20D:							
Frederick-------	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
20E:							
Frederick-------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
20F:							
Frederick-------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
21B:							
Frederick-------	90	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
21C:							
Frederick-------	90	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Slope	0.37
21D:							
Frederick-------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
21E:							
Frederick-------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
21F:							
Frederick-------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
22B:							
Frederick-------	90	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
22C:							
Frederick-------	90	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Slope	0.37

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
22D:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
22E:							
Frederick	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
23C:							
Gilpin	50	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37
Berks	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
23D:							
Gilpin	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
		Too clayey	0.50			Too clayey	0.50
Berks	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
24C:							
Grimsley	90	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Seepage	0.50
24D:							
Grimsley	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
		Too clayey	0.50			Seepage	0.50
24E:							
Grimsley	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
		Too clayey	0.50			Seepage	0.50

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
25D:							
Grimsley--------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
						Seepage	0.50
		Too clayey	0.50				
Cedarcreek------	30	Very limited		Very limited		Very limited	
		Large stones	1.00	Slope	1.00	Large stones	1.00
		Slope	1.00	Seepage	1.00	Slope	1.00
		Seepage, bottom layer	1.00			Seepage	0.21
Berks-----------	25	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	Gravel content	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Slope	1.00
25E:							
Grimsley--------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
						Seepage	0.50
		Too clayey	0.50				
Cedarcreek------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00			Seepage	0.21
Berks-----------	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
26B:							
Groseclose------	85	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
26C:							
Groseclose------	85	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Hard to compact	1.00
						Slope	0.37
26D:							
Groseclose------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
26E:							
Groseclose------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
27B:							
Guernsey	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
		Too clayey	0.50			Depth to saturated zone	0.69
						Too clayey	0.50
27C:							
Guernsey	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
		Too clayey	0.50	Slope	0.37	Depth to saturated zone	0.68
		Slope	0.37			Too clayey	0.50
28C:							
Lily	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
28D:							
Lily	95	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
28E:							
Lily	95	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
28F:							
Lily	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
29D:							
Lily	80	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
29E:							
Lily	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
30C:							
Madsheep--------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
		Slope	0.37	Slope	0.37	Seepage	0.50
30D:							
Madsheep--------	90	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
31E:							
Madsheep--------	95	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
32A:							
Melvin----------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00		
33:							
Mine Tipples----	8	Not rated		Not rated		Not rated	
Mine Dumps------	55	Not rated		Not rated		Not rated	
Mine Tailings---	35	Not rated		Not rated		Not rated	
34B:							
Murrill---------	95	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
34C:							
Murrill---------	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37
34D:							
Murrill---------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
35A:							
Newark----------	45	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50				
Linside---------	40	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.68
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50				

Table 12.—Sanitary Facilities, Part II—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
36F:							
Newbern	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
Rock outcrop	30	Not rated		Not rated		Not rated	
37C:							
Oriskany	90	Very limited		Very limited		Very limited	
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00	Slope	0.37	Seepage	0.50
		Slope	0.37			Slope	0.37
37D:							
Oriskany	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00			Seepage	0.50
38C:							
Oriskany	90	Very limited		Very limited		Very limited	
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00	Slope	0.37	Seepage	0.50
		Slope	0.37			Slope	0.37
38D:							
Oriskany	95	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00			Seepage	0.50
38E:							
Oriskany	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	1.00	Seepage	1.00	Large stones	1.00
		Seepage, bottom layer	1.00			Seepage	0.50
39D:							
Paddyknob	75	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, bottom layer	1.00	Depth to bedrock	1.00	Seepage	1.00
Rock outcrop	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob	70	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, bottom layer	1.00	Depth to bedrock	1.00	Seepage	1.00
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
40D:							
Paddyknob	85	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, bottom layer	1.00	Depth to bedrock	1.00	Seepage	1.00
40E:							
Paddyknob	90	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, bottom layer	1.00	Depth to bedrock	1.00	Seepage	1.00
41A:							
Philo	90	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.68
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage, bottom layer	1.00				
42B:							
Pisgah	95	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
42C:							
Pisgah	95	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Hard to compact	1.00
						Slope	0.37
43B:							
Pisgah	95	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
43C:							
Pisgah	95	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Hard to compact	1.00
						Slope	0.37
44:							
Pits, quarry	100	Not rated		Not rated		Not rated	
45A:							
Pope	85	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.85
				Flooding	0.40	Too sandy	0.50
		Too sandy	0.50			Seepage	0.21
		Flooding	0.40				
46C:							
Poplimento	45	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.37	Too clayey	1.00
		Slope	0.37			Hard to compact	1.00
						Slope	0.37

Table 12.—Sanitary Facilities, Part II—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
46C:							
Westmoreland----	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37
						Gravel content	0.09
46D:							
Poplimento------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Westmoreland----	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.09
47A:							
Purdy-----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
48B:							
Timberville-----	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
49B:							
Tumbling--------	90	Somewhat limited		Not limited		Not limited	
		Too clayey	0.50				
49C:							
Tumbling--------	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.37	Slope	0.37
		Slope	0.37				
50:							
Udorthents------	45	Not rated		Not rated		Not rated	
Urban land------	30	Not rated		Not rated		Not rated	
51D:							
Wallen----------	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Rock outcrop----	25	Not rated		Not rated		Not rated	
51E:							
Wallen----------	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Rock outcrop----	25	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities, Part II—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
52C:							
Wallen----------	90	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
		Slope	0.37	Slope	0.37	Gravel content	0.39
52D:							
Wallen----------	90	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
52E:							
Wallen----------	90	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, bottom layer	1.00	Seepage	1.00	Seepage	0.50
53E:							
Westmoreland----	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.09
Poplimento------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Berks-----------	15	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
53F:							
Westmoreland----	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.09
Poplimento------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Berks-----------	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, bottom layer	1.00	Seepage	1.00	Gravel content	1.00

Table 12.—Sanitary Facilities, Part II—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
54A:							
Wolfgap---------	85	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
		Seepage, bottom layer	1.00				
W:							
Water-----------	100	Not rated		Not rated		Not rated	

Table 13.—Construction Materials, Part I

(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
1A:					
Allegheny	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
1B:					
Allegheny	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
2C:					
Alticrest	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
2D:					
Alticrest	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
2E:					
Alticrest	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
3C:					
Berks	50	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
Weikert	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
3D:					
Berks	50	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
Weikert	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
3E:					
Berks	55	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
Weikert	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
4E:					
Berks----------------	45	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
Gilpin---------------	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.50	Thickest layer	0.00
4F:					
Berks----------------	65	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
Gilpin---------------	30	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.50	Thickest layer	0.00
5D:					
Bland----------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop---------	15	Not rated		Not rated	
5E:					
Bland----------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop---------	15	Not rated		Not rated	
6B:					
Bland----------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
6C:					
Bland----------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
6D:					
Bland----------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
7C:					
Botetourt------------	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
8D:					
Brushy---------------	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
8E:					
Brushy---------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
9D:					
Calvin	90	Fair		Poor	
		Thickest layer	0.20	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
9E:					
Calvin	85	Fair		Poor	
		Thickest layer	0.20	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
10D:					
Calvin	90	Fair		Poor	
		Thickest layer	0.20	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
10E:					
Calvin	90	Fair		Poor	
		Thickest layer	0.20	Bottom layer	0.00
		Bottom layer	0.38	Thickest layer	0.00
11C:					
Carbo	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
11D:					
Carbo	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
11E:					
Carbo	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
11F:					
Carbo	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
12D:					
Carbo	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
12E:					
Carbo	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
13E:					
Carbo	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	20	Not rated		Not rated	

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
14C:					
Cedarcreek----------	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Alticrest-----------	30	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
Rock outcrop--------	15	Not rated		Not rated	
14E:					
Cedarcreek----------	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Alticrest-----------	30	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.04
		Bottom layer	0.00	Thickest layer	0.04
Rock outcrop--------	15	Not rated		Not rated	
15C:					
Cedarcreek----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop--------	15	Not rated		Not rated	
15D:					
Cedarcreek----------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop--------	15	Not rated		Not rated	
15E:					
Cedarcreek----------	80	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop--------	15	Not rated		Not rated	
16D:					
Chiswell------------	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Litz----------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
16E:					
Chiswell------------	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Litz----------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
16F:					
Chiswell------------	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Litz----------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
17B:					
Coursey-------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
18B:					
Craigsville---------	90	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
19D:					
Drypond-------------	65	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.43	Bottom layer	0.02
Rock outcrop--------	25	Not rated		Not rated	
19E:					
Drypond-------------	65	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.43	Bottom layer	0.02
Rock outcrop--------	25	Not rated		Not rated	
20B:					
Frederick-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
20C:					
Frederick-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
20D:					
Frederick-----------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
20E:					
Frederick-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
20F:					
Frederick-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
21B:					
Frederick-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
21C:					
Frederick-----------	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
21D:					
Frederick-----------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
21E:					
Frederick-----------	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
21F:					
Frederick-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
22B:					
Frederick-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
22C:					
Frederick-----------	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
22D:					
Frederick-----------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
22E:					
Frederick-----------	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
23C:					
Gilpin--------------	50	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.50	Thickest layer	0.00
Berks---------------	35	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
23D:					
Gilpin--------------	50	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.50	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
23D:					
Berks	35	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
24C:					
Grimsley	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
24D:					
Grimsley	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
24E:					
Grimsley	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
25D:					
Grimsley	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
Cedarcreek	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Berks	25	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
25E:					
Grimsley	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
Cedarcreek	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Berks	20	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
26B:					
Groseclose	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
26C:					
Groseclose	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
26D:					
Groseclose	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
26E:					
Groseclose----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
27B:					
Guernsey------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
27C:					
Guernsey------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
28C:					
Lily----------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
28D:					
Lily----------------	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
28E:					
Lily----------------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
28F:					
Lily----------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
29D:					
Lily----------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
29E:					
Lily----------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
30C:					
Madsheep------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
30D:					
Madsheep------------	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
31E:					
Madsheep------------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
32A:					
Melvin	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
33:					
Mine Tipples	8	Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated	
34B:					
Murrill	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
34C:					
Murrill	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
34D:					
Murrill	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
35A:					
Newark	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Lindside	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
36F:					
Newbern	65	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Rock outcrop	30	Not rated		Not rated	
37C:					
Oriskany	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
37D:					
Oriskany	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
38C:					
Oriskany	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
38D:					
Oriskany------------	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
38E:					
Oriskany------------	90	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
39D:					
Paddyknob-----------	75	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.04
		Bottom layer	0.00	Thickest layer	0.04
Rock outcrop--------	20	Not rated		Not rated	
39E:					
Paddyknob-----------	70	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.04
		Bottom layer	0.00	Thickest layer	0.04
Rock outcrop--------	25	Not rated		Not rated	
40D:					
Paddyknob-----------	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
40E:					
Paddyknob-----------	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.04
		Bottom layer	0.00	Thickest layer	0.04
41A:					
Philo---------------	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
42B:					
Pisgah--------------	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
42C:					
Pisgah--------------	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
43B:					
Pisgah--------------	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
43C:					
Pisgah--------------	95	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
44:					
Pits, quarry	100	Not rated		Not rated	
45A:					
Pope	85	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.04
		Bottom layer	0.00	Bottom layer	0.11
46C:					
Poplimento	45	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Westmoreland	40	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
46D:					
Poplimento	60	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Westmoreland	35	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
47A:					
Purdy	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
48B:					
Timberville	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
49B:					
Tumbling	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
49C:					
Tumbling	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
50:					
Udorthents	45	Not rated		Not rated	
Urban land	30	Not rated		Not rated	
51D:					
Wallen	65	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
Rock outcrop	25	Not rated		Not rated	

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
51E:					
Wallen--------------	65	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
Rock outcrop--------	25	Not rated		Not rated	
52C:					
Wallen--------------	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.03
52D:					
Wallen--------------	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
52E:					
Wallen--------------	90	Poor		Fair	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.00	Thickest layer	0.03
53E:					
Westmoreland--------	60	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
Poplimento----------	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Berks---------------	15	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
53F:					
Westmoreland--------	45	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
Poplimento----------	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Berks---------------	20	Fair		Poor	
		Thickest layer	0.23	Bottom layer	0.00
		Bottom layer	0.43	Thickest layer	0.00
54A:					
Wolfgap-------------	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.25	Thickest layer	0.00
W:					
Water---------------	100	Not rated		Not rated	

Table 13.—Construction Materials, Part II

(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: 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
1A:							
Allegheny--------	85	Fair		Good		Poor	
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Rock fragments	0.88
1B:							
Allegheny--------	85	Fair		Good		Poor	
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Rock fragments	0.88
2C:							
Alticrest--------	85	Fair		Poor		Fair	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.63
						Too acid	0.88
		Droughty	0.23			Rock fragments	0.88
		Too acid	0.50				
2D:							
Alticrest--------	90	Fair		Poor		Poor	
		Organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		content low		Slope	0.50	Too acid	0.88
		Droughty	0.23			Rock fragments	0.88
		Too acid	0.50				
2E:							
Alticrest--------	90	Fair		Poor		Poor	
		Organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
		content low		Slope	0.00	Too acid	0.88
		Droughty	0.23			Rock fragments	0.88
		Too acid	0.50				
3C:							
Berks------------	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter	0.12			Slope	0.63
		content low				Too acid	0.76
		Too acid	0.50				
Weikert----------	35	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
		Organic matter content low	0.12			Slope	0.63
3D:							
Berks------------	50	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter	0.12	Slope	0.00	Rock fragments	0.00
		content low				Too acid	0.76
		Too acid	0.50				

Table 13.—Construction Materials, Part II—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
3D:							
Weikert----------	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
		Organic matter content low	0.12			Depth to bedrock	0.00
3E:							
Berks------------	55	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
Weikert----------	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
		Organic matter content low	0.12			Depth to bedrock	0.00
4E:							
Berks------------	45	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
Gilpin-----------	40	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
				Slope	0.00	Rock fragments	0.88
		Too acid	0.50	Low strength	0.00	Depth to bedrock	0.90
		Droughty	0.70				
4F:							
Berks------------	65	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
Gilpin-----------	30	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
				Slope	0.00	Rock fragments	0.88
		Too acid	0.50	Low strength	0.00	Depth to bedrock	0.90
		Droughty	0.70				
5D:							
Bland------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Slope	0.50	Depth to bedrock	0.93
		Too acid	0.61				
Rock outcrop-----	15	Not rated		Not rated		Not rated	
5E:							
Bland------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Too clayey	0.00
				Low strength	0.00	Depth to bedrock	0.93
		Too acid	0.61				

Table 13.—Construction Materials, Part II—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
5E:							
Rock outcrop-----	15	Not rated		Not rated		Not rated	
6B:							
Bland------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Depth to bedrock	0.93
				Shrink-swell	0.87		
		Too acid	0.61				
6C:							
Bland------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Slope	0.63
				Shrink-swell	0.87	Depth to bedrock	0.93
		Too acid	0.61				
6D:							
Bland------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Slope	0.50	Depth to bedrock	0.93
		Too acid	0.61				
7C:							
Botetourt--------	95	Fair		Poor		Fair	
		Too acid	0.50	Low strength	0.00	Wetness depth	0.53
				Wetness depth	0.53	Slope	0.63
						Hard to reclaim (rock fragments)	0.92
8D:							
Brushy-----------	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.05	Slope	0.50	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.05
8E:							
Brushy-----------	80	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
		Organic matter content low	0.12			Depth to bedrock	0.05
9D:							
Calvin-----------	90	Fair		Poor		Poor	
		Droughty	0.11	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.71
		Too acid	0.50				
9E:							
Calvin-----------	85	Fair		Poor		Poor	
		Droughty	0.11	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.71
		Too acid	0.50				

Table 13.—Construction Materials, Part II—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
10D:							
Calvin-----------	90	Fair		Poor		Poor	
		Droughty	0.11	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.71
		Too acid	0.50				
10E:							
Calvin-----------	90	Fair		Poor		Poor	
		Droughty	0.11	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.71
		Too acid	0.50				
11C:							
Carbo------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Slope	0.63
				Shrink-swell	0.17	Depth to bedrock	0.84
		Droughty	0.71				
11D:							
Carbo------------	90	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.17	Depth to bedrock	0.84
		Droughty	0.71				
11E:							
Carbo------------	90	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Too clayey	0.00
				Low strength	0.00	Depth to bedrock	0.84
		Droughty	0.71				
11F:							
Carbo------------	90	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Too clayey	0.00
				Low strength	0.00	Depth to bedrock	0.84
		Droughty	0.71				
12D:							
Carbo------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Slope	0.00
				Shrink-swell	0.17	Depth to bedrock	0.84
		Droughty	0.71				
Rock outcrop-----	15	Not rated		Not rated		Not rated	
12E:							
Carbo------------	75	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Too clayey	0.00
				Low strength	0.00	Depth to bedrock	0.84
		Droughty	0.71				
Rock outcrop-----	15	Not rated		Not rated		Not rated	

Table 13.—Construction Materials, Part II—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
13E:							
Carbo	65	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Slope	0.00
				Slope	0.00	Depth to bedrock	0.84
		Droughty	0.71				
Rock outcrop	20	Not rated		Not rated		Not rated	
14C:							
Cedarcreek	50	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.08
		Too acid	0.50			Too acid	0.59
Alticrest	30	Fair		Poor		Fair	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.84
						Too acid	0.88
		Droughty	0.23			Rock fragments	0.88
		Too acid	0.50				
Rock outcrop	15	Not rated		Not rated		Not rated	
14E:							
Cedarcreek	50	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
		Too acid	0.50				
Alticrest	30	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
				Slope	0.00	Too acid	0.88
		Droughty	0.23			Rock fragments	0.88
		Too acid	0.50				
Rock outcrop	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek	80	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Hard to reclaim (rock fragments)	0.08
		Too acid	0.50			Too acid	0.59
Rock outcrop	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek	80	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
		Too acid	0.50				
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 13.—Construction Materials, Part II—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
15E:							
Cedarcreek	80	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Stone content	0.00	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.08
Rock outcrop	15	Not rated		Not rated		Not rated	
16D:							
Chiswell	60	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.00	Slope	0.50	Depth to bedrock	0.00
		Organic matter content low	0.12			Rock fragments	0.00
Litz	35	Fair		Poor		Poor	
		Droughty	0.09	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.50	Rock fragments	0.00
		Depth to bedrock	0.21			Depth to bedrock	0.21
16E:							
Chiswell	60	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
		Organic matter content low	0.12			Rock fragments	0.00
Litz	35	Fair		Poor		Poor	
		Droughty	0.09	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.21			Depth to bedrock	0.21
16F:							
Chiswell	60	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
		Organic matter content low	0.12			Rock fragments	0.00
Litz	35	Fair		Poor		Poor	
		Droughty	0.09	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.21			Depth to bedrock	0.21
17B:							
Coursey	85	Fair		Fair		Fair	
		Too acid	0.50	Wetness depth	0.89	Rock fragments	0.50
						Too acid	0.59
						Wetness depth	0.89
18B:							
Craigsville	90	Poor		Poor		Poor	
		Stone content	0.00	Cobble content	0.00	Rock fragments	0.00
		Too acid	0.50	Stone content	0.98	Hard to reclaim (rock fragments)	0.00
		Cobble content	0.70			Too acid	0.88

Table 13.—Construction Materials, Part II—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
19D:							
Drypond----------	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
		Organic matter content low	0.12			Depth to bedrock	0.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
19E:							
Drypond----------	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
		Organic matter content low	0.12			Depth to bedrock	0.00
Rock outcrop-----	25	Not rated		Not rated		Not rated	
20B:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.89	Rock fragments	0.76
		Too acid	0.61			Too acid	0.99
20C:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.89	Slope	0.63
		Too acid	0.61			Rock fragments	0.76
20D:							
Frederick--------	95	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.50	Too clayey	0.00
		Too acid	0.61	Shrink-swell	0.89	Rock fragments	0.76
20E:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.61	Shrink-swell	0.89	Rock fragments	0.76
20F:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.61	Shrink-swell	0.89	Rock fragments	0.76
21B:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.88	Rock fragments	0.76
		Too acid	0.61			Too acid	0.99

Table 13.—Construction Materials, Part II—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
21C:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.88	Slope	0.63
						Rock fragments	0.76
		Too acid	0.61				
21D:							
Frederick--------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.50	Too clayey	0.00
				Shrink-swell	0.88	Rock fragments	0.76
		Too acid	0.61				
21E:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.88	Rock fragments	0.76
		Too acid	0.61				
21F:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.88	Rock fragments	0.76
		Too acid	0.61				
22B:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.89	Rock fragments	0.76
						Too acid	0.99
		Too acid	0.61				
22C:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.89	Slope	0.63
						Rock fragments	0.76
		Too acid	0.61				
22D:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.50	Too clayey	0.00
				Shrink-swell	0.89	Rock fragments	0.76
		Too acid	0.61				
22E:							
Frederick--------	90	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.89	Rock fragments	0.76
		Too acid	0.61				

Table 13.—Construction Materials, Part II—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
23C:							
Gilpin	50	Fair		Poor		Fair	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.63
		Too acid	0.50	Low strength	0.00	Rock fragments	0.88
		Droughty	0.70			Depth to bedrock	0.90
Berks	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12			Slope	0.63
		Too acid	0.50			Too acid	0.76
23D:							
Gilpin	50	Fair		Poor		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Low strength	0.00	Rock fragments	0.88
		Droughty	0.70	Slope	0.50	Depth to bedrock	0.90
Berks	35	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.50	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
24C:							
Grimsley	90	Fair		Good		Poor	
		Organic matter content low	0.12			Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.00
		Droughty	0.81			Slope	0.37
24D:							
Grimsley	90	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50			Rock fragments	0.00
		Droughty	0.81			Hard to reclaim (rock fragments)	0.00
24E:							
Grimsley	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50			Rock fragments	0.00
		Droughty	0.81			Hard to reclaim (rock fragments)	0.00
25D:							
Grimsley	40	Fair		Fair		Poor	
		Organic matter content low	0.12	Slope	0.18	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.00
		Droughty	0.81			Slope	0.00
Cedarcreek	30	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Slope	0.18	Slope	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.08

Table 13.—Construction Materials, Part II—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
25D:							
Berks------------	25	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Slope	0.18	Slope	0.00
		Too acid	0.50			Too acid	0.76
25E:							
Grimsley---------	40	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50			Rock fragments	0.00
		Droughty	0.81			Hard to reclaim (rock fragments)	0.00
Cedarcreek-------	35	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Stone content	0.00	Rock fragments	0.00
		Too acid	0.50			Hard to reclaim (rock fragments)	0.08
Berks------------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
26B:							
Groseclose-------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.15	Too acid	0.59
		Too acid	0.50				
26C:							
Groseclose-------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.15	Too acid	0.59
		Too acid	0.50			Slope	0.63
26D:							
Groseclose-------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Organic matter content low	0.12	Shrink-swell	0.15	Too clayey	0.00
		Too acid	0.50	Slope	0.50	Too acid	0.59
26E:							
Groseclose-------	85	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Shrink-swell	0.15	Too acid	0.59
27B:							
Guernsey---------	85	Fair		Poor		Fair	
		Too clayey	0.02	Low strength	0.00	Too clayey	0.01
		Organic matter content low	0.18	Shrink-swell	0.26	Wetness depth	0.76
		Too acid	0.54	Wetness depth	0.76		

Table 13.—Construction Materials, Part II—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
27C:							
Guernsey----------	85	Fair		Poor		Fair	
		Too clayey	0.02	Low strength	0.00	Too clayey	0.01
		Organic matter	0.18	Shrink-swell	0.26	Slope	0.63
		content low		Wetness depth	0.76	Wetness depth	0.76
		Too acid	0.54				
28C:							
Lily--------------	85	Fair		Poor		Fair	
		Organic matter	0.18	Depth to bedrock	0.00	Too acid	0.59
		content low		Low strength	0.00	Slope	0.63
		Droughty	0.35			Depth to bedrock	0.93
		Too acid	0.50				
28D:							
Lily--------------	95	Fair		Poor		Poor	
		Organic matter	0.18	Depth to bedrock	0.00	Slope	0.00
		content low		Low strength	0.00	Too acid	0.59
		Droughty	0.35	Slope	0.50	Depth to bedrock	0.93
		Too acid	0.50				
28E:							
Lily--------------	95	Fair		Poor		Poor	
		Organic matter	0.18	Depth to bedrock	0.00	Slope	0.00
		content low	0.35	Slope	0.00	Too acid	0.59
		Droughty	0.35	Low strength	0.00	Depth to bedrock	0.93
		Too acid	0.50				
28F:							
Lily--------------	85	Fair		Poor		Poor	
		Organic matter	0.18	Depth to bedrock	0.00	Slope	0.00
		content low		Slope	0.00	Too acid	0.59
		Droughty	0.35	Low strength	0.00	Depth to bedrock	0.93
		Too acid	0.50				
29D:							
Lily--------------	80	Fair		Poor		Poor	
		Organic matter	0.18	Depth to bedrock	0.00	Slope	0.00
		content low		Slope	0.00	Too acid	0.59
		Droughty	0.35	Low strength	0.00	Depth to bedrock	0.93
		Too acid	0.50				
29E:							
Lily--------------	85	Fair		Poor		Poor	
		Organic matter	0.18	Depth to bedrock	0.00	Slope	0.00
		content low		Slope	0.00	Too acid	0.59
		Droughty	0.35	Low strength	0.00	Depth to bedrock	0.93
		Too acid	0.50				
30C:							
Madsheep----------	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter	0.12			Depth to bedrock	0.16
		content low				Too acid	0.59
		Depth to bedrock	0.16				

Table 13.—Construction Materials, Part II—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
30D:							
Madsheep	90	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.16			Depth to bedrock	0.16
31E:							
Madsheep	95	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.16			Depth to bedrock	0.16
32A:							
Melvin	85	Fair		Poor		Poor	
		Too acid	0.84	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.90	Low strength	0.00	Hard to reclaim (rock fragments)	0.92
33:							
Mine Tipples	8	Not rated		Not rated		Not rated	
Mine Dumps	55	Not rated		Not rated		Not rated	
Mine Tailings	35	Not rated		Not rated		Not rated	
34B:							
Murrill	95	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Hard to reclaim (rock fragments)	0.32
		Too acid	0.20			Too acid	0.76
		Water erosion	0.99				
34C:							
Murrill	95	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Hard to reclaim (rock fragments)	0.32
		Too acid	0.20			Slope	0.63
		Water erosion	0.99			Too acid	0.76
34D:							
Murrill	90	Fair		Poor		Poor	
		Organic matter content low	0.12	Low strength	0.00	Slope	0.00
				Slope	0.50	Hard to reclaim (rock fragments)	0.32
		Too acid	0.20				
		Water erosion	0.99			Too acid	0.76
35A:							
Newark	45	Fair		Poor		Poor	
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.00
				Wetness depth	0.00		
		Water erosion	0.90				
		Too acid	0.92				
Lindside	40	Fair		Poor		Fair	
		Organic matter content low	0.50	Low strength	0.00	Wetness depth	0.76
				Wetness depth	0.76		
		Water erosion	0.90				

Table 13.—Construction Materials, Part II—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
36F:							
Newbern----------	65	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
		Organic matter content low	0.12	Low strength	0.22	Rock fragments	0.88
Rock outcrop-----	30	Not rated		Not rated		Not rated	
37C:							
Oriskany---------	90	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Cobble content	0.92	Slope	0.63
						Hard to reclaim (rock fragments)	0.76
		Too acid	0.50				
37D:							
Oriskany---------	90	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.50	Rock fragments	0.00
				Cobble content	0.92	Hard to reclaim (rock fragments)	0.76
		Too acid	0.50				
38C:							
Oriskany---------	90	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Cobble content	0.92	Slope	0.63
						Hard to reclaim (rock fragments)	0.76
		Too acid	0.50				
38D:							
Oriskany---------	95	Poor		Poor		Poor	
		Stone content	0.00	Stone content	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
				Cobble content	0.92	Hard to reclaim (rock fragments)	0.76
		Too acid	0.50				
38E:							
Oriskany---------	90	Poor		Poor		Poor	
		Stone content	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Stone content	0.00	Rock fragments	0.00
				Cobble content	0.92	Hard to reclaim (rock fragments)	0.76
		Too acid	0.50				
39D:							
Paddyknob--------	75	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.21
		Depth to bedrock	0.21				
Rock outcrop-----	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob--------	70	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Depth to bedrock	0.21
		Depth to bedrock	0.21				
Rock outcrop-----	25	Not rated		Not rated		Not rated	

Table 13.—Construction Materials, Part II—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
40D:							
Paddyknob	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.21			Depth to bedrock	0.21
40E:							
Paddyknob	90	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Depth to bedrock	0.21			Depth to bedrock	0.21
41A:							
Philo	90	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.76	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.64
						Wetness depth	0.76
42B:							
Pisgah	95	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Too acid	0.99
		Too acid	0.61				
42C:							
Pisgah	95	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.63
						Too acid	0.99
		Too acid	0.61				
43B:							
Pisgah	95	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Too acid	0.99
		Too acid	0.61				
43C:							
Pisgah	95	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.63
						Too acid	0.99
		Too acid	0.61				
44:							
Pits, quarry	100	Not rated		Not rated		Not rated	
45A:							
Pope	85	Fair		Good		Poor	
		Too acid	0.50			Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Too acid	0.99

Table 13.—Construction Materials, Part II—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
46C:							
Poplimento-------	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.31	Slope	0.63
						Hard to reclaim (rock fragmemts)	0.92
		Too acid	0.68				
Westmoreland-----	40	Fair		Poor		Poor	
		Organic matter content low	0.12	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Slope	0.63
		Water erosion	0.99			Too acid	0.98
46D:							
Poplimento-------	60	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Organic matter content low	0.12	Shrink-swell	0.31	Too clayey	0.00
				Slope	0.50	Hard to reclaim (rock fragments)	0.92
		Too acid	0.68				
Westmoreland-----	35	Fair		Poor		Poor	
		Organic matter content low	0.12	Low strength	0.00	Slope	0.00
				Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54				
		Water erosion	0.99			Too acid	0.98
47A:							
Purdy------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.08
		Too acid	0.97				
48B:							
Timberville------	85	Fair		Poor		Fair	
		Organic matter content low	0.12	Low strength	0.00	Rock fragments	0.88
				Shrink-swell	0.98	Too acid	0.95
		Too acid	0.50				
		Water erosion	0.99				
49B:							
Tumbling---------	90	Fair		Good		Fair	
		Too clayey	0.08			Too clayey	0.05
		Organic matter content low	0.12			Too acid	0.99
		Too acid	0.61				
49C:							
Tumbling---------	90	Fair		Good		Fair	
		Too clayey	0.08			Too clayey	0.05
		Organic matter content low	0.12			Slope	0.63
						Too acid	0.99
		Too acid	0.61				
50:							
Udorthents-------	45	Not rated		Not rated		Not rated	
Urban land-------	30	Not rated		Not rated		Not rated	

Table 13.—Construction Materials, Part II—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
51D:							
Wallen-----------	65	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
		Organic matter content low	0.12	No cobble limitation	0.99	Depth to bedrock	0.10
Rock outcrop-----	25	Not rated		Not rated		Not rated	
51E:							
Wallen-----------	65	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
		Organic matter content low	0.12	No cobble limitation	0.99	Depth to bedrock	0.10
Rock outcrop-----	25	Not rated		Not rated		Not rated	
52C:							
Wallen-----------	90	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.10	No cobble limitation	0.99	Depth to bedrock	0.10
		Organic matter content low	0.12			Slope	0.63
52D:							
Wallen-----------	90	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
		Organic matter content low	0.12	No cobble limitation	0.99	Depth to bedrock	0.10
52E:							
Wallen-----------	90	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
		Organic matter content low	0.12	No cobble limitation	0.99	Depth to bedrock	0.10
53E:							
Westmoreland-----	60	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
				Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54				
		Water erosion	0.99			Too acid	0.98
Poplimento-------	20	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.31	Hard to reclaim (rock fragments)	0.92
		Too acid	0.68				
Berks------------	15	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
						Too acid	0.76
		Too acid	0.50				

Table 13.—Construction Materials, Part II—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
53F:							
Westmoreland-----	45	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.54	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Water erosion	0.99			Too acid	0.98
Poplimento-------	30	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.68	Shrink-swell	0.31	Hard to reclaim (rock fragments)	0.92
Berks------------	20	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Slope	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
54A:							
Wolfgap----------	85	Good		Good		Fair	
						Rock fragments	0.88
W:							
Water------------	100	Not rated		Not rated		Not rated	

Table 14.—Water Management

(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	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1A:							
Allegheny	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.03	Depth to water	1.00
1B:							
Allegheny	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.03	Depth to water	1.00
2C:							
Alticrest	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Seepage	0.04		
		Slope	0.01				
2D:							
Alticrest	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Seepage	0.04		
		Slope	0.12				
2E:							
Alticrest	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Seepage	0.04		
		Slope	0.64				
3C:							
Berks	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77	Seepage	0.50		
		Slope	0.01				
Weikert	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Seepage	0.70	Seepage	0.38		
		Slope	0.01				
3D:							
Berks	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77	Seepage	0.50		
		Slope	0.28				
Weikert	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Seepage	0.70	Seepage	0.38		
		Slope	0.28				
3E:							
Berks	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Slope	0.97	Seepage	0.50		
		Depth to bedrock	0.77				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
3E:							
Weikert	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.97	Seepage	0.38		
		Seepage	0.70				
4E:							
Berks	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77	Seepage	0.50		
		Slope	0.50				
Gilpin	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Seepage	0.50		
		Slope	0.50	Piping	0.01		
4F:							
Berks	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Slope	1.00	Seepage	0.50		
		Depth to bedrock	0.77				
Gilpin	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.70	Depth to water	1.00
		Seepage	0.70	Seepage	0.50		
		Depth to bedrock	0.69	Piping	0.01		
5D:							
Bland	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.66	Hard to pack	0.85	Depth to water	1.00
		Slope	0.12	Thin layer	0.66		
		Seepage	0.03				
Rock outcrop	15	Not rated		Not rated		Not rated	
5E:							
Bland	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.82	Hard to pack	0.85	Depth to water	1.00
		Depth to bedrock	0.66	Thin layer	0.66		
		Seepage	0.03				
Rock outcrop	15	Not rated		Not rated		Not rated	
6B:							
Bland	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.66	Hard to pack	0.85	Depth to water	1.00
		Seepage	0.03	Thin layer	0.66		
6C:							
Bland	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.66	Hard to pack	0.85	Depth to water	1.00
		Seepage	0.03	Thin layer	0.66		
		Slope	0.01				
6D:							
Bland	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.66	Hard to pack	0.85	Depth to water	1.00
		Slope	0.12	Thin layer	0.66		
		Seepage	0.03				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
7C:							
Botetourt-----------	95	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Cutbanks cave	1.00
		Slope	0.01	Depth to saturated zone	0.99	Slow refill	0.30
						Depth to saturated zone	0.01
8D:							
Brushy--------------	75	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.99	Thin layer	0.99	Depth to water	1.00
		Seepage	0.70				
		Slope	0.12				
8E:							
Brushy--------------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.99	Thin layer	0.99	Depth to water	1.00
		Slope	0.94				
		Seepage	0.70				
9D:							
Calvin--------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.81	Depth to water	1.00
		Depth to bedrock	0.81	Seepage	0.38		
		Slope	0.28				
9E:							
Calvin--------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.81	Depth to water	1.00
		Slope	0.97	Seepage	0.38		
		Depth to bedrock	0.81				
10D:							
Calvin--------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.81	Depth to water	1.00
		Depth to bedrock	0.81	Seepage	0.38		
		Slope	0.28				
10E:							
Calvin--------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.81	Depth to water	1.00
		Slope	0.97	Seepage	0.38		
		Depth to bedrock	0.81				
11C:							
Carbo---------------	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Hard to pack	0.99	Depth to water	1.00
		Slope	0.01	Thin layer	0.74		
11D:							
Carbo---------------	90	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Hard to pack	0.99	Depth to water	1.00
		Slope	0.12	Thin layer	0.74		
11E:							
Carbo---------------	90	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Hard to pack	0.99	Depth to water	1.00
		Slope	0.50	Thin layer	0.74		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
11F:							
Carbo	90	Very limited		Very limited		Very limited	
		Slope	1.00	Hard to pack	0.99	Depth to water	1.00
		Depth to bedrock	0.74	Thin layer	0.74		
12D:							
Carbo	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.74	Hard to pack	0.99	Depth to water	1.00
		Slope	0.04	Thin layer	0.74		
Rock outcrop	15	Not rated		Not rated		Not rated	
12E:							
Carbo	75	Somewhat limited		Very limited		Very limited	
		Slope	0.97	Hard to pack	0.99	Depth to water	1.00
		Depth to bedrock	0.74	Thin layer	0.74		
Rock outcrop	15	Not rated		Not rated		Not rated	
13E:							
Carbo	65	Somewhat limited		Very limited		Very limited	
		Slope	0.82	Hard to pack	0.99	Depth to water	1.00
		Depth to bedrock	0.74	Thin layer	0.74		
Rock outcrop	20	Not rated		Not rated		Not rated	
14C:							
Cedarcreek	50	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	0.99	Depth to water	1.00
Alticrest	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Seepage	0.04		
Rock outcrop	15	Not rated		Not rated		Not rated	
14E:							
Cedarcreek	50	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	0.99	Depth to water	1.00
		Slope	0.41				
Alticrest	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Seepage	0.04		
		Slope	0.41				
Rock outcrop	15	Not rated		Not rated		Not rated	
15C:							
Cedarcreek	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	0.99	Depth to water	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
15D:							
Cedarcreek	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	0.99	Depth to water	1.00
		Slope	0.28				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
15D:							
Rock outcrop	15	Not rated		Not rated		Not rated	
15E:							
Cedarcreek	80	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	0.99	Depth to water	1.00
		Seepage	1.00				
Rock outcrop	15	Not rated		Not rated		Not rated	
16D:							
Chiswell	60	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.99	Thin layer	1.00	Depth to water	1.00
		Seepage	0.70				
		Slope	0.12				
Litz	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.95	Thin layer	0.95	Depth to water	1.00
		Seepage	0.70				
		Slope	0.12				
16E:							
Chiswell	60	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.99	Thin layer	1.00	Depth to water	1.00
		Seepage	0.70				
		Slope	0.50				
Litz	35	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.95	Thin layer	0.95	Depth to water	1.00
		Seepage	0.70				
		Slope	0.50				
16F:							
Chiswell	60	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.99	Thin layer	1.00	Depth to water	1.00
		Slope	0.99				
		Seepage	0.70				
Litz	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.99	Thin layer	0.95	Depth to water	1.00
		Depth to bedrock	0.95				
		Seepage	0.70				
17B:							
Coursey	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Depth to saturated	0.86	Slow refill	0.30
						Cutbanks cave	0.10
						Depth to saturated zone	0.06
18B:							
Craigsville	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Large stones content	0.95	Depth to water	1.00
				Seepage	0.10		
19D:							
Drypond	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.28	Seepage	0.50		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
19D:							
Rock outcrop	25	Not rated		Not rated		Not rated	
19E:							
Drypond	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	1.00	Seepage	0.50		
Rock outcrop	25	Not rated		Not rated		Not rated	
20B:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
20C:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.01				
20D:							
Frederick	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.12				
20E:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.50				
20F:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.99	Hard to pack	0.04	Depth to water	1.00
		Seepage	0.70				
21B:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
21C:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.01				
21D:							
Frederick	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.12				
21E:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.50				
21F:							
Frederick	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.99	Hard to pack	0.04	Depth to water	1.00
		Seepage	0.70				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
22B:							
Frederick-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
22C:							
Frederick-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.01				
22D:							
Frederick-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.12				
22E:							
Frederick-----------	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.04	Depth to water	1.00
		Slope	0.50				
23C:							
Gilpin--------------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Seepage	0.50		
		Slope	0.01	Piping	0.01		
Berks---------------	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77	Seepage	0.50		
		Slope	0.01				
23D:							
Gilpin--------------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.70	Depth to water	1.00
		Depth to bedrock	0.69	Seepage	0.50		
		Slope	0.12	Piping	0.01		
Berks---------------	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77	Seepage	0.50		
		Slope	0.12				
24C:							
Grimsley------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	0.01				
24D:							
Grimsley------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	0.28				
24E:							
Grimsley------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	1.00				
25D:							
Grimsley------------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	0.18				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
25D:							
Cedarcreek----------	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	0.99	Depth to water	1.00
		Slope	0.18				
Berks---------------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77	Seepage	0.50		
		Slope	0.18				
25E:							
Grimsley------------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	1.00				
Cedarcreek----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	0.99	Depth to water	1.00
		Seepage	1.00				
Berks---------------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Slope	1.00	Seepage	0.50		
		Depth to bedrock	0.77				
26B:							
Groseclose----------	85	Not limited		Somewhat limited		Very limited	
				Hard to pack	0.56	Depth to water	1.00
26C:							
Groseclose----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.01	Hard to pack	0.56	Depth to water	1.00
26D:							
Groseclose----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.12	Hard to pack	0.56	Depth to water	1.00
26E:							
Groseclose----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Hard to pack	0.56	Depth to water	1.00
27B:							
Guernsey------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	0.95	Slow refill	0.98
						Cutbanks cave	0.10
						Depth to saturated zone	0.02
27C:							
Guernsey------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	0.95	Slow refill	0.98
		Slope	0.01			Cutbanks cave	0.10
						Depth to saturated zone	0.02
28C:							
Lily----------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.66	Depth to water	1.00
		Depth to bedrock	0.66	Piping	0.27		
		Slope	0.01				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
28D:							
Lily----------------	95	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.66	Depth to water	1.00
		Depth to bedrock	0.66	Piping	0.27		
		Slope	0.12				
28E:							
Lily----------------	95	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.66	Depth to water	1.00
		Depth to bedrock	0.66	Piping	0.27		
		Slope	0.50				
28F:							
Lily----------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.66	Depth to water	1.00
		Slope	1.00	Piping	0.27		
		Depth to bedrock	0.66				
29D:							
Lily----------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.66	Depth to water	1.00
		Depth to bedrock	0.66	Piping	0.27		
		Slope	0.28				
29E:							
Lily----------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.66	Depth to water	1.00
		Slope	1.00	Piping	0.27		
		Depth to bedrock	0.66				
30C:							
Madsheep------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.96	Depth to water	1.00
		Depth to bedrock	0.96				
		Slope	0.01				
30D:							
Madsheep------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.96	Depth to water	1.00
		Depth to bedrock	0.96				
		Slope	0.28				
31E:							
Madsheep------------	95	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.96	Depth to water	1.00
		Slope	0.97				
		Depth to bedrock	0.96				
32A:							
Melvin--------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00	Slow refill	0.30
				Piping	0.72		
33:							
Mine Tipples--------	8	Not rated		Not rated		Not rated	
Mine Dumps----------	55	Not rated		Not rated		Not rated	
Mine Tailings-------	35	Not rated		Not rated		Not rated	

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
34B:							
Murrill	95	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
34C:							
Murrill	95	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.01				
34D:							
Murrill	90	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.12				
35A:							
Newark	45	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.09		
Lindside	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	0.95	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.01	Depth to saturated zone	0.02
36F:							
Newbern	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Thin layer	1.00	Depth to water	1.00
		Slope	0.99	Piping	0.92		
Rock outcrop	30	Not rated		Not rated		Not rated	
37C:							
Oriskany	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	1.00	Depth to water	1.00
		Slope	0.01				
				Seepage	0.01		
37D:							
Oriskany	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	1.00	Depth to water	1.00
		Slope	0.12				
				Seepage	0.01		
38C:							
Oriskany	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	1.00	Depth to water	1.00
		Slope	0.01				
				Seepage	0.01		
38D:							
Oriskany	95	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	1.00	Depth to water	1.00
		Slope	0.28				
				Seepage	0.01		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
38E:							
Oriskany------------	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Large stones content	1.00	Depth to water	1.00
		Slope	0.97	Seepage	0.01		
39D:							
Paddyknob-----------	75	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.95	Depth to water	1.00
		Depth to bedrock	0.95	Seepage	0.04		
		Slope	0.28				
Rock outcrop--------	20	Not rated		Not rated		Not rated	
39E:							
Paddyknob-----------	70	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.95	Depth to water	1.00
		Slope	1.00	Seepage	0.04		
		Depth to bedrock	0.95				
Rock outcrop--------	25	Not rated		Not rated		Not rated	
40D:							
Paddyknob-----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.95	Depth to water	1.00
		Depth to bedrock	0.95	Seepage	0.04		
		Slope	0.28				
40E:							
Paddyknob-----------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.95	Depth to water	1.00
		Slope	0.97	Seepage	0.04		
		Depth to bedrock	0.95				
41A:							
Philo---------------	90	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	0.95	Cutbanks cave	0.10
				Seepage	0.03	Depth to saturated zone	0.02
42B:							
Pisgah--------------	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.69	Depth to water	1.00
42C:							
Pisgah--------------	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.69	Depth to water	1.00
		Slope	0.01				
43B:							
Pisgah--------------	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.69	Depth to water	1.00
43C:							
Pisgah--------------	95	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.69	Depth to water	1.00
		Slope	0.01				
44:							
Pits, quarry--------	100	Not rated		Not rated		Not rated	

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
45A:							
Pope	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.11	Depth to water	1.00
46C:							
Poplimento	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.03	Hard to pack	0.59	Depth to water	1.00
		Slope	0.01				
Westmoreland	40	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.25	Depth to water	1.00
		Slope	0.01	Piping	0.08		
46D:							
Poplimento	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.12	Hard to pack	0.59	Depth to water	1.00
		Seepage	0.03				
Westmoreland	35	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.25	Depth to water	1.00
		Slope	0.12	Piping	0.08		
47A:							
Purdy	85	Not limited		Very limited		Very limited	
				Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00	Slow refill	1.00
48B:							
Timberville	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.21	Depth to water	1.00
49B:							
Tumbling	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
49C:							
Tumbling	90	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.01				
50:							
Udorthents	45	Not rated		Not rated		Not rated	
Urban land	30	Not rated		Not rated		Not rated	
51D:							
Wallen	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Seepage	0.03		
		Slope	0.28				
Rock outcrop	25	Not rated		Not rated		Not rated	
51E:							
Wallen	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.98	Depth to water	1.00
		Slope	1.00	Seepage	0.03		
		Depth to bedrock	0.98				
Rock outcrop	25	Not rated		Not rated		Not rated	

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
52C:							
Wallen--------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Seepage	0.03		
		Slope	0.01				
52D:							
Wallen--------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.98	Depth to water	1.00
		Depth to bedrock	0.98	Seepage	0.03		
		Slope	0.28				
52E:							
Wallen--------------	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.98	Depth to water	1.00
		Slope	1.00	Seepage	0.03		
		Depth to bedrock	0.98				
53E:							
Westmoreland--------	60	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.25	Depth to water	1.00
		Slope	0.50	Piping	0.08		
Poplimento----------	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Hard to pack	0.59	Depth to water	1.00
		Seepage	0.03				
Berks---------------	15	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77	Seepage	0.50		
		Slope	0.50				
53F:							
Westmoreland--------	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.25	Depth to water	1.00
		Seepage	0.70	Piping	0.08		
Poplimento----------	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Hard to pack	0.59	Depth to water	1.00
		Seepage	0.03				
Berks---------------	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.77	Depth to water	1.00
		Slope	1.00	Seepage	0.50		
		Depth to bedrock	0.77				
54A:							
Wolfgap-------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.25	Depth to water	1.00
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 15.—Engineering Properties

(Absence of an entry indicates that 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	
1A:												
Allegheny-------	0-11	Loam, fine sandy loam	CL, ML	A-4, A-6	0	0	90-100	80-100	55-95	30-75	27-45	9-18
	11-32	Sandy clay loam, clay loam, loam, gravelly sandy clay loam	CL, SC	A-6	0	0	65-100	55-100	35-100	15-80	27-44	12-25
	32-61	Very gravelly sandy loam, gravelly sandy loam, gravelly sandy clay loam, very gravelly sand	GC, GW-GC, SC, SW-SC	A-1, A-2, A-4, A-6	0	0-40	30-85	25-80	10-70	1-45	19-32	5-13
1B:												
Allegheny-------	0-11	Loam, fine sandy loam	CL, ML	A-4, A-6	0	0	90-100	80-100	55-95	30-75	27-45	9-18
	11-32	Sandy clay loam, clay loam, loam, gravelly sandy clay loam	CL, SC	A-6	0	0	65-100	55-100	35-100	15-80	27-44	12-25
	32-61	Very gravelly sandy loam, gravelly sandy loam, gravelly sandy clay loam, very gravelly sand	GC, GW-GC, SC, SW-SC	A-1, A-2, A-4, A-6	0	0-40	30-85	25-80	10-70	1-45	19-32	5-13
2C:												
Alticrest-------	0-3	Fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	55-85	30-55	14-23	1-6
	3-35	Sandy loam, loam, fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	50-85	25-55	14-23	1-6
	35-45	Bedrock			---	---	---	---	---	---	---	---
2D:												
Alticrest-------	0-3	Fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	55-85	30-55	14-23	1-6
	3-35	Sandy loam, loam, fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	50-85	25-55	14-23	1-6
	35-45	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
2E:												
Alticrest-------	0-3	Fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	55-85	30-55	14-23	1-6
	3-35	Sandy loam, loam, fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	50-85	25-55	14-23	1-6
	35-45	Bedrock			---	---	---	---	---	---	---	---
3C:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
Weikert---------	0-7	Channery silt loam, very channery silt loam	CL, GM, ML, SM	A-2, A-4	0	0-10	50-80	45-75	40-75	30-70	16-31	2-10
	7-19	Extremely channery silt loam, extremely channery loam, very channery silt loam, channery loam, gravelly loam	GC	A-4, A-2	0-1	0-20	20-60	15-50	15-50	10-45	16-31	2-10
	19-29	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
3D:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
Weikert---------	0-7	Channery silt loam, very channery silt loam	CL, GM, ML, SM	A-2, A-4	0	0-10	50-80	45-75	40-75	30-70	16-31	2-10
	7-19	Extremely channery silt loam, extremely channery loam, very channery silt loam, channery loam, gravelly loam	GC	A-4, A-2	0-1	0-20	20-60	15-50	15-50	10-45	16-31	2-10
	19-29	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
3E:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
Weikert---------	0-7	Channery silt loam, very channery silt loam	CL, GM, ML, SM	A-2, A-4	0	0-10	50-80	45-75	40-75	30-70	16-31	2-10
	7-19	Extremely channery silt loam, extremely channery loam, very channery silt loam, channery loam, gravelly loam	GC	A-4, A-2	0-1	0-20	20-60	15-50	15-50	10-45	16-31	2-10
	19-29	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
4E:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
Gilpin----------	0-6	Silt loam	CL, ML	A-4, A-6	0	0-5	80-100	80-95	70-95	55-85	26-42	9-18
	6-30	Silty clay loam, channery silt loam, channery loam	CL, GC, SC	A-2, A-6	0	0-25	60-95	55-95	45-95	30-90	27-44	12-25
	30-35	Extremely channery silt loam, very channery silt loam, very channery silty clay loam, channery loam	GC, GC-GM	A-2, A-4, A-6	0	0-30	25-55	20-50	15-50	10-45	24-44	9-25
	35-45	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
4F:												
Berks-----------	0-6	Channery silt loam	ML, SC, GC, CL, GM	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
Gilpin----------	0-6	Silt loam	CL, ML	A-4, A-6	0	0-5	80-100	80-95	70-95	55-85	26-42	9-18
	6-30	Silty clay loam, channery silt loam, channery loam	CL, GC, SC	A-2, A-6	0	0-25	60-95	55-95	45-95	30-90	27-44	12-25
	30-35	Extremely channery silt loam, very channery silt loam, very channery silty clay loam, channery loam	GC, GC-GM	A-2, A-4, A-6	0	0-30	25-55	20-50	15-50	10-45	24-44	9-25
	35-45	Bedrock			---	---	---	---	---	---	---	---
5D:												
Bland-----------	0-4	Silty clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-100	70-95	27-50	10-25
	4-30	Silty clay, clay	CH	A-7	0	0-5	90-100	80-100	75-100	70-95	52-67	32-44
	30-36	Channery clay, channery silty clay loam	CH, GC, SC	A-6, A-7	0-5	0-10	60-85	50-75	50-75	45-70	31-59	13-36
	36-46	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 15.—Engineering 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	
5E:												
Bland-----------	0-4	Silty clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-100	70-95	27-50	10-25
	4-30	Silty clay, clay	CH	A-7	0	0-5	90-100	80-100	75-100	70-95	52-67	32-44
	30-36	Channery clay, channery silty clay loam	CH, GC, SC	A-6, A-7	0-5	0-10	60-85	50-75	50-75	45-70	31-59	13-36
	36-46	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
6B:												
Bland-----------	0-4	Silty clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-100	70-95	27-50	10-25
	4-30	Silty clay, clay	CH	A-7	0	0-5	90-100	80-100	75-100	70-95	52-67	32-44
	30-36	Channery clay, channery silty clay loam	CH, GC, SC	A-6, A-7	0-5	0-10	60-85	50-75	50-75	45-70	31-59	13-36
	36-46	Bedrock			---	---	---	---	---	---	---	---
6C:												
Bland-----------	0-4	Silty clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-100	70-95	27-50	10-25
	4-30	Silty clay, clay	CH	A-7	0	0-5	90-100	80-100	75-100	70-95	52-67	32-44
	30-36	Channery clay, channery silty clay loam	CH, GC, SC	A-6, A-7	0-5	0-10	60-85	50-75	50-75	45-70	31-59	13-36
	36-46	Bedrock			---	---	---	---	---	---	---	---
6D:												
Bland-----------	0-4	Silty clay loam	CL	A-6, A-7	0	0-5	90-100	80-100	75-100	70-95	27-50	10-25
	4-30	Silty clay, clay	CH	A-7	0	0-5	90-100	80-100	75-100	70-95	52-67	32-44
	30-36	Channery clay, channery silty clay loam	CH, GC, SC	A-6, A-7	0-5	0-10	60-85	50-75	50-75	45-70	31-59	13-36
	36-46	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
7C:												
Botetourt-------	0-7	Loam	CL, CL-ML, ML	A-4	0	0-8	85-100	85-100	70-95	50-75	13-31	1-11
	7-37	Clay loam, cobbly loam, sandy clay loam, loam	CL, CL-ML, SC-SM, SC	A-6, A-2-4	0	0-13	70-100	60-100	50-100	20-80	23-39	7-16
	37-62	Gravelly loam, very cobbly sandy loam, clay loam, loam	SC, SC-SM, CL-ML, CL	A-4, A-6, A-2-4, A-1	0	0-18	60-95	50-90	30-85	15-75	18-39	4-16
8D:												
Brushy----------	0-10	Gravelly loam	GC, SC-SM	A-4	0-5	0-15	60-80	55-75	45-70	35-55	21-36	6-13
	10-23	Very gravelly loam, extremely gravelly loam, very gravelly clay loam, extremely gravelly sandy clay loam	GC	A-2, A-4	0	0-5	40-85	20-75	15-70	10-40	22-44	7-25
	23-33	Bedrock			---	---	---	---	---	---	---	---
8E:												
Brushy----------	0-10	Gravelly loam	GC, SC-SM	A-4	0-5	0-15	60-80	55-75	45-70	35-55	21-36	6-13
	10-23	Very gravelly loam, extremely gravelly loam, very gravelly clay loam, extremely gravelly sandy clay loam	GC	A-2, A-4	0	0-5	40-85	20-75	15-70	10-40	22-44	7-25
	23-33	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
9D:												
Calvin----------	0-8	Channery silt loam	CL, CL-ML	A-6, A-4	0	0-10	60-90	55-85	50-85	40-75	21-39	6-17
	8-25	Very channery silt loam, very channery loam	GC	A-2, A-4, A-6	0	0-10	35-60	30-45	25-45	20-40	20-36	6-17
	25-32	Extremely channery silt loam, very channery silt loam, very channery loam	GC, SC	A-1, A-2, A-4, A-6	0	0-20	25-65	15-45	15-45	10-40	20-36	6-17
	32-42	Bedrock			---	---	---	---	---	---	---	---
9E:												
Calvin----------	0-8	Channery silt loam	CL, CL-ML	A-6, A-4	0	0-10	60-90	55-85	50-85	40-75	21-39	6-17
	8-25	Very channery silt loam, very channery loam	GC	A-2, A-4, A-6	0	0-10	35-60	30-45	25-45	20-40	20-36	6-17
	25-32	Extremely channery silt loam, very channery silt loam, very channery loam	GC, SC	A-1, A-2, A-4, A-6	0	0-20	25-65	15-45	15-45	10-40	20-36	6-17
	32-42	Bedrock			---	---	---	---	---	---	---	---
10D:												
Calvin----------	0-8	Channery silt loam	CL, CL-ML	A-6, A-4	0	0-10	60-90	55-85	50-85	40-75	21-39	6-17
	8-25	Very channery silt loam, very channery loam	GC	A-2, A-4, A-6	0	0-10	35-60	30-45	25-45	20-40	20-36	6-17
	25-32	Extremely channery silt loam, very channery silt loam, very channery loam	GC, SC	A-1, A-2, A-4, A-6	0	0-20	25-65	15-45	15-45	10-40	20-36	6-17
	32-42	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
10E:												
Calvin----------	0-8	Channery silt loam	CL, CL-ML	A-6, A-4	0	0-10	60-90	55-85	50-85	40-75	21-39	6-17
	8-25	Very channery silt loam, very channery loam	GC	A-2, A-4, A-6	0	0-10	35-60	30-45	25-45	20-40	20-36	6-17
	25-32	Extremely channery silt loam, very channery silt loam, very channery loam	GC, SC	A-1, A-2, A-4, A-6	0	0-20	25-65	15-45	15-45	10-40	20-36	6-17
	32-42	Bedrock			---	---	---	---	---	---	---	---
11C:												
Carbo-----------	0-12	Silt loam	CL	A-6, A-7	0	0-2	95-100	90-100	85-95	75-85	32-54	13-28
	12-34	Clay	CH	A-7	0	0-5	95-100	85-100	80-95	70-90	67-86	44-59
	34-44	Bedrock			---	---	---	---	---	---	---	---
11D:												
Carbo-----------	0-12	Silt loam	CL	A-6, A-7	0	0-2	95-100	90-100	85-95	75-85	32-54	13-28
	12-34	Clay	CH	A-7	0	0-5	95-100	85-100	80-95	70-90	67-86	44-59
	34-44	Bedrock			---	---	---	---	---	---	---	---
11E:												
Carbo-----------	0-12	Silt loam	CL	A-6, A-7	0	0-2	95-100	90-100	85-95	75-85	32-54	13-28
	12-34	Clay	CH	A-7	0	0-5	95-100	85-100	80-95	70-90	67-86	44-59
	34-44	Bedrock			---	---	---	---	---	---	---	---
11F:												
Carbo-----------	0-12	Silt loam	CL	A-6, A-7	0	0-2	95-100	90-100	85-95	75-85	32-54	13-28
	12-34	Clay	CH	A-7	0	0-5	95-100	85-100	80-95	70-90	67-86	44-59
	34-44	Bedrock			---	---	---	---	---	---	---	---
12D:												
Carbo-----------	0-12	Silt loam	CL	A-6, A-7	0	0-2	95-100	90-100	85-95	75-85	32-54	13-28
	12-34	Clay	CH	A-7	0	0-5	95-100	85-100	80-95	70-90	67-86	44-59
	34-44	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
12E:												
Carbo-----------	0-12	Silt loam	CL	A-6, A-7	0	0-2	95-100	90-100	85-95	75-85	32-54	13-28
	12-34	Clay	CH	A-7	0	0-5	95-100	85-100	80-95	70-90	67-86	44-59
	34-44	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 15.—Engineering 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	Plas- ticity index
	In				Pct	Pct					Pct	
13E:												
Carbo	0-12	Silt loam	CL	A-6, A-7	0	0-2	95-100	90-100	85-95	75-85	32-54	13-28
	12-34	Clay	CH	A-7	0	0-5	95-100	85-100	80-95	70-90	67-86	44-59
	34-44	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
14C:												
Cedarcreek	0-4	Extremely stony loam, very stony loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-38	12-19
	4-72	Extremely stony loam, very stony silt loam, extremely channery loam, very channery sandy loam, very channery loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-36	12-19
Alticrest	0-3	Fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	55-85	30-55	14-23	1-6
	3-35	Sandy loam, loam, fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	50-85	25-55	14-23	1-6
	35-45	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
14E:												
Cedarcreek	0-4	Extremely stony loam, very stony loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-38	12-19
	4-72	Extremely stony loam, very stony silt loam, extremely channery loam, very channery sandy loam, very channery loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-36	12-19

Table 15.—Engineering 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	
14E:												
Alticrest-------	0-3	Fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	55-85	30-55	14-23	1-6
	3-35	Sandy loam, loam, fine sandy loam	CL-ML, SC-SM	A-2, A-4	0	0-2	85-100	80-100	50-85	25-55	14-23	1-6
	35-45	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
15C:												
Cedarcreek------	0-4	Extremely stony loam, very stony loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-38	12-19
	4-72	Extremely stony loam, very stony silt loam, extremely channery loam, very channery sandy loam, very channery loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-36	12-19
Rock outcrop.												
15D:												
Cedarcreek------	0-4	Extremely stony loam, very stony loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-38	12-19
	4-72	Extremely stony loam, very stony silt loam, extremely channery loam, very channery sandy loam, very channery loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-36	12-19
Rock outcrop.												

Table 15.—Engineering 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	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
15E:												
Cedarcreek	0-4	Extremely stony loam, very stony loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-38	12-19
	4-72	Extremely stony loam, very stony silt loam, extremely channery loam, very channery sandy loam, very channery loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-36	12-19
Rock outcrop.												
16D:												
Chiswell	0-2	Silt loam	CL	A-4, A-6	0	0	85-95	80-95	70-95	55-85	21-41	6-19
	2-17	Very channery silt loam, extremely channery clay loam, channery silt loam, extremely channery silt loam	GC, SC	A-2, A-6, A-7-6	0-2	0-20	40-80	35-75	30-75	20-70	20-44	6-25
	17-20	Bedrock			---	---	---	---	---	---	---	---
	20-30	Bedrock			---	---	---	---	---	---	---	---
Litz	0-11	Channery loam, channery silt loam, channery silty clay loam, silty clay loam	CL, GC	A-4, A-6	0-5	0-15	60-95	55-90	45-90	35-85	21-41	6-19
	11-26	Very channery loam, very channery silt loam, very channery silty clay loam, extremely channery loam, very channery clay loam	GC, GC-GM	A-2, A-4, A-6	0-7	0-15	40-60	20-50	15-50	10-40	20-44	6-25
	26-36	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
16E:												
Chiswell--------	0-2	Silt loam	CL	A-4, A-6	0	0	85-95	80-95	70-95	55-85	21-41	6-19
	2-17	Very channery silt loam, extremely channery clay loam, channery silt loam, extremely channery silt loam	GC, SC	A-2, A-6, A-7-6	0-2	0-20	40-80	35-75	30-75	20-70	20-44	6-25
	17-20	Bedrock			---	---	---	---	---	---	---	---
	20-30	Bedrock			---	---	---	---	---	---	---	---
Litz------------	0-11	Channery loam, channery silt loam, channery silty clay loam, silty clay loam	CL, GC	A-4, A-6	0-5	0-15	60-95	55-90	45-90	35-85	21-41	6-19
	11-26	Very channery loam, very channery silt loam, very channery silty clay loam, extremely channery loam, very channery clay loam	GC, GC-GM	A-2, A-4, A-6	0-7	0-15	40-60	20-50	15-50	10-40	20-44	6-25
	26-36	Bedrock			---	---	---	---	---	---	---	---
16F:												
Chiswell--------	0-2	Silt loam	CL	A-4, A-6	0	0	85-95	80-95	70-95	55-85	21-41	6-19
	2-17	Very channery silt loam, extremely channery clay loam, channery silt loam, extremely channery silt loam	GC, SC	A-2, A-6, A-7-6	0-2	0-20	40-80	35-75	30-75	20-70	20-44	6-25
	17-20	Bedrock			---	---	---	---	---	---	---	---
	20-30	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
16F:												
Litz------------	0-11	Channery loam, channery silt loam, channery silty clay loam, silty clay loam	CL, GC	A-4, A-6	0-5	0-15	60-95	55-90	45-90	35-85	21-41	6-19
	11-26	Very channery loam, very channery silt loam, very channery silty clay loam, extremely channery loam, very channery clay loam	GC, GC-GM	A-2, A-4, A-6	0-7	0-15	40-60	20-50	15-50	10-40	20-44	6-25
	26-36	Bedrock			---	---	---	---	---	---	---	---
17B:												
Coursey---------	0-13	Loam	CL	A-6	0	0-5	80-100	80-100	70-95	50-75	29-43	12-18
	13-65	Sandy clay loam, loam, gravelly sandy clay loam	CL, GC, SC	A-7, A-6	0	0-10	60-100	55-100	45-90	35-55	28-49	12-24
18B:												
Craigsville-----	0-7	Very gravelly sandy loam	GC-GM, GM, SM	A-1, A-2	0	0-25	35-80	30-70	20-50	10-30	18-37	2-10
	7-35	Very cobbly sandy loam, cobbly loam, very gravelly sandy loam, extremely cobbly sandy loam	SC-SM, GC, GM, SC, SM	A-1, A-2, A-4	0	15-60	50-80	30-70	20-65	10-50	17-28	2-10
	35-61	Extremely stony loamy sand, very cobbly loamy sand, very gravelly loamy sand, very gravelly sandy loam	SC-SM, GC-GM, GM, GP-GM	A-1, A-2	20-65	10-55	35-85	30-75	10-55	5-20	17-24	2-6

Table 15.—Engineering 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	Plas- ticity index
	In				Pct	Pct					Pct	
19D:												
Drypond---------	0-3	Very gravelly sandy loam	GC, GC-GM, GW-GC	A-1, A-2	0	0-20	35-75	30-50	20-35	10-20	17-39	2-17
	3-11	Very gravelly sandy loam, very gravelly loam, extremely channery sandy clay loam	GC, GC-GM, GW-GC	A-2, A-2-4	0	5-25	35-75	15-50	10-45	5-30	16-36	2-17
	11-16	Extremely gravelly sandy loam, very gravelly loam, extremely channery sandy clay loam	GC, GC-GM, GW-GC	A-2	0	10-30	15-50	10-40	10-40	5-30	16-32	2-13
	16-26	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
19E:												
Drypond---------	0-3	Very gravelly sandy loam	GC, GC-GM, GW-GC	A-1, A-2	0	0-20	35-75	30-50	20-35	10-20	17-39	2-17
	3-11	Very gravelly sandy loam, very gravelly loam, extremely channery sandy clay loam	GC, GC-GM, GW-GC	A-2-4, A-2	0	5-25	35-75	15-50	10-45	5-30	16-36	2-17
	11-16	Extremely gravelly sandy loam, very gravelly loam, extremely channery sandy clay loam	GC, GC-GM, GW-GC	A-2	0	10-30	15-50	10-40	10-40	5-30	16-32	2-13
	16-26	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 15.—Engineering 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	
20B:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
20C:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
20D:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
20E:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
20F:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
21B:												
Frederick-------	0-8	Gravelly silt loam	SC, SM, SC-SM	A-4, A-2-4	0	0	60-80	50-75	45-70	30-55	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
21C:												
Frederick-------	0-8	Gravelly silt loam	SC, SM, SC-SM	A-4, A-2-4	0	0	60-80	50-75	45-70	30-55	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
21D:												
Frederick-------	0-8	Gravelly silt loam	SC, SM, SC-SM	A-4, A-2-4	0	0	60-80	50-75	45-70	30-55	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34

Table 15.—Engineering 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	
21E:												
Frederick-------	0-8	Gravelly silt loam	SC, SM, SC-SM	A-4, A-2-4	0	0	60-80	50-75	45-70	30-55	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
21F:												
Frederick-------	0-8	Gravelly silt loam	SC, SM, SC-SM	A-4, A-2-4	0	0	60-80	50-75	45-70	30-55	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
22B:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
22C:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34

Table 15.—Engineering 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	
22D:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
22E:												
Frederick-------	0-8	Silt loam	CL, CL-ML, ML	A-4	0	0	80-100	75-100	70-100	50-90	13-31	NP-10
	8-14	Silty clay loam, clay, gravelly clay loam	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	35-95	38-61	14-27
	14-50	Clay, silty clay	CL, CH, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
	50-62	Silty clay, clay	CH, CL, SC	A-7	0	0	60-100	50-100	45-100	40-95	43-74	17-34
23C:												
Gilpin----------	0-6	Silt loam	CL, ML	A-4, A-6	0	0-5	80-100	80-95	70-95	55-85	26-42	9-18
	6-30	Silty clay loam, channery silt loam, channery loam	CL, GC, SC	A-2, A-6	0	0-25	60-95	55-95	45-95	30-90	27-44	12-25
	30-35	Extremely channery silt loam, very channery silt loam, very channery silty clay loam, channery loam	GC, GC-GM	A-2, A-4, A-6	0	0-30	25-55	20-50	15-50	10-45	24-44	9-25
	35-45	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
23C:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
23D:												
Gilpin----------	0-6	Silt loam	CL, ML	A-4, A-6	0	0-5	80-100	80-95	70-95	55-85	26-42	9-18
	6-30	Silty clay loam, channery silt loam, channery loam	CL, GC, SC	A-2, A-6	0	0-25	60-95	55-95	45-95	30-90	27-44	12-25
	30-35	Extremely channery silt loam, very channery silt loam, very channery silty clay loam, channery loam	GC, GC-GM	A-2, A-4, A-6	0	0-30	25-55	20-50	15-50	10-45	24-44	9-25
	35-45	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
23D:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
24C:												
Grimsley--------	0-10	Loam, channery loam, very channery loam	CL-ML, GC, SC-SM	A-1-b, A-2, A-4	0	0-30	45-90	35-85	30-75	20-60	21-37	6-13
	10-60	Very channery clay loam, very channery loam, very channery sandy clay loam	GC, GC-GM, SC, SC-SM	A-2, A-6	0	0-30	40-75	35-65	30-60	20-50	29-44	13-25
24D:												
Grimsley--------	0-10	Loam, channery loam, very channery loam	CL-ML, GC, SC-SM	A-1-b, A-2, A-4	0	0-30	45-90	35-85	30-75	20-60	21-37	6-13
	10-60	Very channery clay loam, very channery loam, very channery sandy clay loam	GC, GC-GM, SC, SC-SM	A-2, A-6	0	0-30	40-75	35-65	30-60	20-50	29-44	13-25

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
24E:												
Grimsley--------	0-10	Loam, channery loam, very channery loam	CL-ML, GC, SC-SM	A-1-b, A-2, A-4	0	0-30	45-90	35-85	30-75	20-60	21-37	6-13
	10-60	Very channery clay loam, very channery loam, very channery sandy clay loam	GC, GC-GM, SC, SC-SM	A-2, A-6	0	0-30	40-75	35-65	30-60	20-50	29-44	13-25
25D:												
Grimsley--------	0-10	Loam, channery loam, very channery loam	CL-ML, GC, SC-SM	A-1-b, A-2, A-4	0	0-30	45-90	35-85	30-75	20-60	21-37	6-13
	10-60	Very channery clay loam, very channery loam, very channery sandy clay loam	GC, GC-GM, SC, SC-SM	A-2, A-6	0	0-30	40-75	35-65	30-60	20-50	29-44	13-25
Cedarcreek------	0-4	Extremely stony loam, very stony loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-38	12-19
	4-72	Extremely stony loam, very stony silt loam, extremely channery loam, very channery sandy loam, very channery loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-36	12-19

Table 15.—Engineering 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	
25D:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
25E:												
Grimsley--------	0-10	Loam, channery loam, very channery loam	CL-ML, GC, SC-SM	A-1-b, A-2, A-4	0	0-30	45-90	35-85	30-75	20-60	21-37	6-13
	10-60	Very channery clay loam, very channery loam, very channery sandy clay loam	GC, GC-GM, SC, SC-SM	A-2, A-6	0	0-30	40-75	35-65	30-60	20-50	29-44	13-25
Cedarcreek------	0-4	Extremely stony loam, very stony loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-38	12-19
	4-72	Extremely stony loam, very stony silt loam, extremely channery loam, very channery sandy loam, very channery loam	GC	A-2, A-6	30-55	0-15	40-80	35-75	30-70	20-55	27-36	12-19

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
25E:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
26B:												
Groseclose------	0-11	Silt loam, silty clay loam	CL, CL-ML, SC-SM	A-4, A-6	0	0	85-100	80-100	70-100	55-95	19-42	3-18
	11-61	Clay, silty clay loam, clay loam, silty clay	CH	A-7	0	0	85-100	80-100	65-100	30-95	45-69	25-44
26C:												
Groseclose------	0-11	Silt loam, silty clay loam	CL, CL-ML, SC-SM	A-4, A-6	0	0	85-100	80-100	70-100	55-95	19-42	3-18
	11-61	Clay, silty clay loam, clay loam, silty clay	CH	A-7	0	0	85-100	80-100	65-100	30-95	45-69	25-44
26D:												
Groseclose------	0-11	Silt loam, silty clay loam	CL, CL-ML, SC-SM	A-4, A-6	0	0	85-100	80-100	70-100	55-95	19-42	3-18
	11-61	Clay, silty clay loam, clay loam, silty clay	CH	A-7	0	0	85-100	80-100	65-100	30-95	45-69	25-44

Table 15.—Engineering 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	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
26E:												
Groseclose------	0-11	Silt loam, silty clay loam	CL, CL-ML, SC-SM	A-4, A-6	0	0	85-100	80-100	70-100	55-95	19-42	3-18
	11-61	Clay, silty clay loam, clay loam, silty clay	CH	A-7	0	0	85-100	80-100	65-100	30-95	45-69	25-44
27B:												
Guernsey--------	0-10	Silt loam	CL	A-4, A-6	0	0-2	90-100	80-100	70-100	55-90	25-43	8-18
	10-21	Silty clay loam, silt loam	CL	A-6, A-7	0	0-2	90-100	80-100	70-100	55-95	33-50	15-27
	21-56	Silty clay loam, silty clay, clay, gravelly silty clay loam	CH, CL	A-7	0	0-10	75-100	65-100	60-100	55-95	45-69	25-44
	56-61	Silty clay, clay, gravelly silty clay loam	CH, CL	A-7	0	0-20	70-95	60-95	55-95	50-90	45-69	25-44
27C:												
Guernsey--------	0-10	Silt loam	CL	A-4, A-6	0	0-2	90-100	80-100	70-100	55-90	25-43	8-18
	10-21	Silty clay loam, silt loam	CL	A-6, A-7	0	0-2	90-100	80-100	70-100	55-95	33-50	15-27
	21-56	Silty clay loam, silty clay, clay, gravelly silty clay loam	CH, CL	A-7	0	0-10	75-100	65-100	60-100	55-95	45-69	25-44
	56-61	Silty clay, clay, gravelly silty clay loam	CH, CL	A-7	0	0-20	70-95	60-95	55-95	50-90	45-69	25-44

Table 15.—Engineering 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	
28C:												
Lily------------	0-4	Fine sandy loam	SC, SM	A-2, A-4	0	0-5	90-100	80-100	55-85	30-55	17-35	2-13
	4-30	Clay loam, sandy clay loam, loam	CL	A-7, A-6	0	0-5	90-100	80-100	70-100	50-80	27-44	12-25
	30-36	Gravelly sandy loam, gravelly sandy clay loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6, A-1-b, A-2	0	0-10	65-100	50-100	35-100	20-80	16-44	2-25
	36-46	Bedrock			---	---	---	---	---	---	---	---
28D:												
Lily------------	0-4	Fine sandy loam	SC, SM	A-2, A-4	0	0-5	90-100	80-100	55-85	30-55	17-35	2-13
	4-30	Clay loam, sandy clay loam, loam	CL	A-7, A-6	0	0-5	90-100	80-100	70-100	50-80	27-44	12-25
	30-36	Gravelly sandy loam, gravelly sandy clay loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6, A-1-b, A-2	0	0-10	65-100	50-100	35-100	20-80	16-44	2-25
	36-46	Bedrock			---	---	---	---	---	---	---	---
28E:												
Lily------------	0-4	Fine sandy loam	SC, SM	A-2, A-4	0	0-5	90-100	80-100	55-85	30-55	17-35	2-13
	4-30	Clay loam, sandy clay loam, loam	CL	A-7, A-6	0	0-5	90-100	80-100	70-100	50-80	27-44	12-25
	30-36	Gravelly sandy loam, gravelly sandy clay loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6, A-1-b, A-2	0	0-10	65-100	50-100	35-100	20-80	16-44	2-25
	36-46	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
28F:												
Lily------------	0-4	Fine sandy loam	SC, SM	A-2, A-4	0	0-5	90-100	80-100	55-85	30-55	17-35	2-13
	4-30	Clay loam, sandy clay loam, loam	CL	A-7, A-6	0	0-5	90-100	80-100	70-100	50-80	27-44	12-25
	30-36	Gravelly sandy loam, gravelly sandy clay loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6, A-1-b, A-2	0	0-10	65-100	50-100	35-100	20-80	16-44	2-25
	36-46	Bedrock			---	---	---	---	---	---	---	---
29D:												
Lily------------	0-4	Fine sandy loam	SC, SM	A-2, A-4	0	0-5	90-100	80-100	55-85	30-55	17-35	2-13
	4-30	Clay loam, sandy clay loam, loam	CL	A-7, A-6	0	0-5	90-100	80-100	70-100	50-80	27-44	12-25
	30-36	Gravelly sandy loam, gravelly sandy clay loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6, A-1-b, A-2	0	0-10	65-100	50-100	35-100	20-80	16-44	2-25
	36-46	Bedrock			---	---	---	---	---	---	---	---
29E:												
Lily------------	0-4	Fine sandy loam	SC, SM	A-2, A-4	0	0-5	90-100	80-100	55-85	30-55	17-35	2-13
	4-30	Clay loam, sandy clay loam, loam	CL	A-7, A-6	0	0-5	90-100	80-100	70-100	50-80	27-44	12-25
	30-36	Gravelly sandy loam, gravelly sandy clay loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6, A-1-b, A-2	0	0-10	65-100	50-100	35-100	20-80	16-44	2-25
	36-46	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
30C:												
Madsheep--------	0-5	Channery silt loam	CL	A-6, A-4	0	0-3	70-85	60-75	55-75	40-70	22-41	6-17
	5-25	Very channery silt loam, very channery loam, channery silt loam, channery loam, extremely channery silt loam	GC	A-2, A-4, A-6	0	0-15	40-75	30-65	25-65	20-60	20-36	6-17
	25-35	Bedrock			---	---	---	---	---	---	---	---
30D:												
Madsheep--------	0-5	Channery silt loam	CL	A-6, A-4	0	0-3	70-85	60-75	55-75	40-70	22-41	6-17
	5-25	Very channery silt loam, very channery loam, channery silt loam, channery loam, extremely channery silt loam	GC	A-2, A-4, A-6	0	0-15	40-75	30-65	25-65	20-60	20-36	6-17
	25-35	Bedrock			---	---	---	---	---	---	---	---
31E:												
Madsheep--------	0-5	Channery silt loam	CL	A-6, A-4	0	0-3	70-85	60-75	55-75	40-70	22-41	6-17
	5-25	Very channery silt loam, very channery loam, channery silt loam, channery loam, extremely channery silt loam	GC	A-2, A-4, A-6	0	0-15	40-75	30-65	25-65	20-60	20-36	6-17
	25-35	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
32A:												
Melvin----------	0-10	Silt loam	ML, CL-ML	A-4, A-6	0	0	90-100	85-100	75-100	60-90	24-39	7-11
	10-50	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6, A-7	0	0	85-100	80-100	70-100	55-95	23-47	7-24
	50-62	Gravelly sandy loam, loam, silt loam, silty clay loam	SC, CL, SM	A-2, A-1, A-7	0	0	90-100	70-100	50-100	20-65	18-50	3-28
33. Mine Tipples, Dumps, and Tailings												
34B:												
Murrill---------	0-10	Silt loam, gravelly silt loam	CL, ML, SC-SM	A-4, A-6	0	0	75-100	70-100	65-100	50-90	21-37	6-13
	10-44	Clay loam, silty clay loam, silt loam, channery sandy clay loam	CL	A-6, A-7	0	0-15	65-100	55-100	45-100	35-95	27-44	12-25
	44-61	Gravelly clay, channery clay loam, clay, loam	CH, CL	A-6, A-7	0-1	0-20	60-100	50-100	40-100	30-95	35-63	17-40
34C:												
Murrill---------	0-10	Silt loam, gravelly silt loam	CL, ML, SC-SM	A-4, A-6	0	0	75-100	70-100	65-100	50-90	21-37	6-13
	10-44	Clay loam, silty clay loam, channery sandy clay loam, silt loam	CL	A-6, A-7	0	0-15	65-100	55-100	45-100	35-95	27-44	12-25
	44-61	Gravelly clay, channery clay loam, clay, loam	CH, CL	A-6, A-7	0-1	0-20	60-100	50-100	40-100	30-95	35-63	17-40

Table 15.—Engineering 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	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
34D:												
Murrill---------	0-10	Silt loam, gravelly silt loam	CL, ML, SC-SM	A-4, A-6	0	0	75-100	70-100	65-100	50-90	21-37	6-13
	10-44	Clay loam, silty clay loam, silt loam, channery sandy clay loam	CL	A-6, A-7	0	0-15	65-100	55-100	45-100	35-95	27-44	12-25
	44-61	Gravelly clay, channery clay loam, clay, loam	CH, CL	A-6, A-7	0-1	0-20	60-100	50-100	40-100	30-95	35-63	17-40
35A:												
Newark----------	0-5	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	85-100	75-90	20-45	3-18
	5-30	Silt loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	85-100	75-90	27-43	12-25
	30-61	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6, A-7	0	0-3	85-100	80-100	70-100	55-95	22-49	7-28
Lindside--------	0-9	Silt loam	ML, CL	A-4, A-6	0	0	100	95-100	85-100	65-90	27-45	9-18
	9-51	Silty clay loam, silt loam, very fine sandy loam	CL	A-7, A-6	0	0	100	95-100	85-100	65-95	28-45	12-25
	51-61	Silty clay loam, clay loam, silt loam, gravelly sandy loam	CL, SC	A-2, A-6	0	0	60-100	55-100	35-100	15-95	25-45	9-25
36F:												
Newbern---------	0-5	Silt loam, channery silt loam	CL, CL-ML	A-4, A-6	0	0-5	65-95	55-90	50-90	40-80	21-41	6-19
	5-14	Silt loam, loam, channery silt loam, very channery loam	CL, CL-ML	A-2, A-4, A-6	0	0-5	50-100	30-95	25-95	20-85	20-38	6-19
	14-24	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
37C:												
Oriskany--------	0-6	Gravelly fine sandy loam	GC-GM, GM, SC	A-2, A-1	0	0-5	50-75	50-75	40-70	20-35	17-33	2-10
	6-14	Very cobbly fine sandy loam, gravelly fine sandy loam, extremely cobbly loam, gravelly sandy loam	SC, GC-GM, CL	A-1, A-4, A-6	0-5	20-55	55-100	50-100	50-100	20-55	20-38	6-19
	14-61	Extremely stony sandy clay loam, very stony sandy clay loam, very cobbly clay loam, very cobbly loam	SC, GC-GM, GC	A-1, A-2, A-7	20-50	10-20	50-80	45-80	30-75	15-50	20-44	6-25
37D:												
Oriskany--------	0-6	Gravelly fine sandy loam	GC-GM, GM, SC	A-2, A-1	0	0-5	50-75	50-75	40-70	20-35	17-33	2-10
	6-14	Very cobbly fine sandy loam, gravelly fine sandy loam, extremely cobbly loam, gravelly sandy loam	SC, GC-GM, CL	A-1, A-4, A-6	0-5	20-55	55-100	50-100	50-100	20-55	20-38	6-19
	14-61	Extremely stony sandy clay loam, very stony sandy clay loam, very cobbly clay loam, very cobbly loam	SC, GC-GM, GC	A-1, A-2, A-7	20-50	10-20	50-80	45-80	30-75	15-50	20-44	6-25

Table 15.—Engineering 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	
38C:												
Oriskany--------	0-6	Gravelly fine sandy loam	GC-GM, GM, SC	A-2, A-1	0	0-5	50-75	50-75	40-70	20-35	17-33	2-10
	6-14	Very cobbly fine sandy loam, gravelly fine sandy loam, extremely cobbly loam, gravelly sandy loam	SC, GC-GM, CL	A-1, A-4, A-6	0-5	20-55	55-100	50-100	50-100	20-55	20-38	6-19
	14-61	Extremely stony sandy clay loam, very stony sandy clay loam, very cobbly clay loam, very cobbly loam	SC, GC-GM, GC	A-1, A-2, A-7	20-50	10-20	50-80	45-80	30-75	15-50	20-44	6-25
38D:												
Oriskany--------	0-6	Gravelly fine sandy loam	GC-GM, GM, SC	A-2, A-1	0	0-5	50-75	50-75	40-70	20-35	17-33	2-10
	6-14	Very cobbly fine sandy loam, gravelly fine sandy loam, extremely cobbly loam, gravelly sandy loam	SC, GC-GM, CL	A-1, A-4, A-6	0-5	20-55	55-100	50-100	50-100	20-55	20-38	6-19
	14-61	Extremely stony sandy clay loam, very stony sandy clay loam, very cobbly clay loam, very cobbly loam	SC, GC-GM, GC	A-1, A-2, A-7	20-50	10-20	50-80	45-80	30-75	15-50	20-44	6-25

Table 15.—Engineering 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	
38E:												
Oriskany--------	0-6	Gravelly fine sandy loam	GC-GM, GM, SC	A-2, A-1	0	0-5	50-75	50-75	40-70	20-35	17-33	2-10
	6-14	Very cobbly fine sandy loam, gravelly fine sandy loam, extremely cobbly loam, gravelly sandy loam	SC, GC-GM, CL	A-1, A-4, A-6	0-5	20-55	55-100	50-100	50-100	20-55	20-38	6-19
	14-61	Extremely stony sandy clay loam, very stony sandy clay loam, very cobbly clay loam, very cobbly loam	SC, GC-GM, GC	A-1, A-2, A-7	20-50	10-20	50-80	45-80	30-75	15-50	20-44	6-25
39D:												
Paddyknob-------	0-4	Gravelly loam	CL-ML, GM, ML, SM	A-2, A-4	0-15	0-15	55-85	50-75	40-70	30-55	22-37	6-13
	4-26	Very gravelly sandy loam, very gravelly loam, gravelly loam, gravelly fine sandy loam	GM, SM	A-1, A-2, A-4	0-1	5-25	40-75	30-60	20-55	10-45	18-30	3-12
	26-36	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
39E:												
Paddyknob-------	0-4	Gravelly loam	CL-ML, GM, ML, SM	A-2, A-4	0-15	0-15	55-85	50-75	40-70	30-55	22-37	6-13
	4-26	Very gravelly sandy loam, very gravelly loam, gravelly loam, gravelly fine sandy loam	GM, SM	A-1, A-2, A-4	0-1	5-25	40-75	30-60	20-55	10-45	18-30	3-12
	26-36	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering 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	
39E:												
Rock outcrop.												
40D:												
Paddyknob-------	0-4	Gravelly loam	CL-ML, GM, ML, SM	A-2, A-4	0-15	0-15	55-85	50-75	40-70	30-55	22-37	6-13
	4-26	Very gravelly sandy loam, very gravelly loam, gravelly loam, gravelly fine sandy loam	GM, SM	A-1, A-2, A-4	0-1	5-25	40-75	30-60	20-55	10-45	18-30	3-12
	26-36	Bedrock			---	---	---	---	---	---	---	---
40E:												
Paddyknob-------	0-4	Gravelly loam	CL-ML, GM, ML, SM	A-2, A-4	0-15	0-15	55-85	50-75	40-70	30-55	22-37	6-13
	4-26	Very gravelly sandy loam, very gravelly loam, gravelly loam, gravelly fine sandy loam	GM, SM	A-1, A-2, A-4	0-1	5-25	40-75	30-60	20-55	10-45	18-30	3-12
	26-36	Bedrock			---	---	---	---	---	---	---	---
41A:												
Philo-----------	0-5	Fine sandy loam	SC, CL-ML, ML, SM	A-4	0	0-5	90-100	80-100	55-85	30-55	22-37	6-12
	5-44	Fine sandy loam, sandy loam, loam, silt loam	SC, CL-ML, ML, SM	A-4	0	0-25	95-100	80-100	55-100	25-90	16-31	2-12
	44-60	Very cobbly sandy loam, gravelly sandy loam, gravelly loam, silt loam	SC-SM, CL-ML, GM, ML, SM	A-2, A-4	0-5	0-30	60-100	50-95	30-95	15-85	16-31	2-12
42B:												
Pisgah----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	22-43	6-18
	8-50	Clay, silty clay	CH	A-7	0	0	95-100	90-100	80-95	80-90	48-67	28-44
	50-65	Clay, silty clay, silty clay loam	CH	A-7	0	0	95-100	90-100	80-95	60-90	39-67	21-44

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
42C:												
Pisgah----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	22-43	6-18
	8-50	Clay, silty clay	CH	A-7	0	0	95-100	90-100	80-95	80-90	48-67	28-44
	50-65	Clay, silty clay, silty clay loam	CH	A-7	0	0	95-100	90-100	80-95	60-90	39-67	21-44
43B:												
Pisgah----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	22-43	6-18
	8-50	Clay, silty clay	CH	A-7	0	0	95-100	90-100	80-95	80-90	48-67	28-44
	50-65	Clay, silty clay, silty clay loam	CH	A-7	0	0	95-100	90-100	80-95	60-90	39-67	21-44
43C:												
Pisgah----------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	22-43	6-18
	8-50	Clay, silty clay	CH	A-7	0	0	95-100	90-100	80-95	80-90	48-67	28-44
	50-65	Clay, silty clay, silty clay loam	CH	A-7	0	0	95-100	90-100	80-95	60-90	39-67	21-44
44.												
Pits, quarry												
45A:												
Pope------------	0-8	Fine sandy loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	85-100	80-100	55-85	30-55	18-35	2-10
	8-27	Gravelly sandy loam, sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-4	0	0	65-100	55-100	35-95	15-75	16-31	2-12
	27-64	Very gravelly loamy sand, gravelly sandy loam, sandy loam, loamy sand	GP-GC, GM, SC-SM, SM	A-1, A-2, A-4	0	0-15	40-100	30-100	15-70	5-40	16-33	2-13

Table 15.—Engineering 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	
46C:												
Poplimento------	0-6	Silt loam	CL	A-6	0	0-5	85-100	80-100	70-100	55-90	27-41	11-19
	6-45	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0-5	85-100	80-100	75-100	70-95	45-69	25-44
	45-62	Channery silty clay loam, channery silty clay, very channery silty clay loam, clay, silty clay loam	GC, SC, CH, CL	A-2, A-6, A-7	0	0-15	45-100	30-100	30-100	25-95	37-59	19-36
Westmoreland----	0-7	Silt loam	CL	A-4, A-6	0	0	85-95	80-95	75-95	55-90	27-47	9-21
	7-31	Silty clay loam, channery loam, channery silt loam	CL, GC	A-6, A-7	0	0-15	65-95	55-95	50-95	40-95	29-44	13-25
	31-47	Channery silt loam, channery silty clay loam, very channery loam, silty clay loam	GC, SC	A-2, A-6	0	0-20	35-95	30-90	25-90	20-85	27-44	12-25
	47-61	Very channery silt loam, channery silty clay loam, extremely channery silt loam, extremely channery loam	GC, SC	A-2	0	0-20	25-70	20-40	15-40	10-35	27-44	12-25

Table 15.—Engineering 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	
46D:												
Poplimento------	0-6	Silt loam	CL	A-6	0	0-5	85-100	80-100	70-100	55-90	27-41	11-19
	6-45	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0-5	85-100	80-100	75-100	70-95	45-69	25-44
	45-62	Channery silty clay loam, channery silty clay, very channery silty clay loam, clay, silty clay loam	GC, SC, CH, CL	A-2, A-6, A-7	0	0-15	45-100	30-100	30-100	25-95	37-59	19-36
Westmoreland----	0-7	Silt loam	CL	A-4, A-6	0	0	85-95	80-95	75-95	55-90	27-47	9-21
	7-31	Silty clay loam, channery loam, channery silt loam	CL, GC	A-6, A-7	0	0-15	65-95	55-95	50-95	40-95	29-44	13-25
	31-47	Channery silt loam, channery silty clay loam, very channery loam, silty clay loam	GC, SC	A-2, A-6	0	0-20	35-95	30-90	25-90	20-85	27-44	12-25
	47-61	Very channery silt loam, channery silty clay loam, extremely channery silt loam, extremely channery loam	GC, SC	A-2	0	0-20	25-70	20-40	15-40	10-35	27-44	12-25
47A:												
Purdy-----------	0-14	Silt loam	CL	A-6, A-7	0	0	95-100	90-100	80-100	65-100	31-55	12-25
	14-47	Silty clay, clay, clay loam, gravelly clay loam	CL, CH	A-7	0	0	80-100	70-100	65-100	50-95	44-60	25-36
	47-61	Gravelly clay loam, very gravelly clay loam, gravelly clay, silty clay	GC, CH, CL	A-7	0	0	45-100	35-100	30-100	20-95	44-60	25-36

Table 15.—Engineering 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	
48B:												
Timberville-----	0-12	Silt loam, loam, fine sandy loam, gravelly fine sandy loam	CL, CL-ML, ML, SC-SM, SM	A-4	0	0-3	60-100	50-100	35-100	20-90	19-41	3-17
	12-25	Silty clay loam, clay loam, silt loam, very gravelly loam	CL, GC, GC-GM	A-4, A-6	0	0-5	55-100	50-100	40-100	25-95	24-45	8-25
	25-35	Gravelly silty clay, very gravelly silty clay, very gravelly clay loam, silty clay	CH, CL, GC, SC	A-7	0	0-10	40-100	30-100	25-100	20-95	43-67	25-44
	35-61	Silty clay, clay, silty clay loam, very gravelly clay loam	CH, CL, GC, SC	A-7	0	0-10	40-100	30-100	25-100	20-95	43-67	25-44
49B:												
Tumbling--------	0-9	Loam	CL-ML, SC-SM	A-4	0-2	0-10	80-100	80-100	70-95	50-75	13-25	NP-4
	9-44	Clay loam, cobbly clay, cobbly clay loam, clay	ML, CL-ML, SM, SC-SM	A-7	0-2	0-30	60-100	50-100	45-100	35-95	31-42	7-12
	44-62	Clay loam, cobbly clay, cobbly clay loam, clay	ML, CL-ML, SM, SC-SM	A-7	0-2	0-45	60-100	50-100	45-100	35-95	31-45	7-13
49C:												
Tumbling--------	0-9	Loam	CL-ML, SC-SM	A-4	0-2	0-10	80-100	80-100	70-95	50-75	13-25	NP-4
	9-44	Clay loam, cobbly clay, cobbly clay loam, clay	ML, CL-ML, SM, SC-SM	A-7	0-2	0-30	60-100	50-100	45-100	35-95	31-42	7-12
	44-62	Clay loam, cobbly clay, cobbly clay loam, clay	ML, CL-ML, SM, SC-SM	A-7	0-2	0-45	60-100	50-100	45-100	35-95	31-45	7-13

Table 15.—Engineering 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	
50. Udorthents-Urban land												
51D:												
Wallen----------	0-4	Channery sandy loam	SC, SC-SM	A-2	0	0-10	50-90	50-75	30-55	15-30	20-35	4-13
	4-24	Very channery sandy loam, very cobbly loam, very cobbly fine sandy loam, extremely channery sandy loam	GC, GC-GM, SC-SM	A-1, A-2, A-4	0	15-45	35-70	25-60	15-55	10-45	18-32	4-13
	24-34	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
51E:												
Wallen----------	0-4	Channery sandy loam	SC, SC-SM	A-2	0	0-10	50-90	50-75	30-55	15-30	20-35	4-13
	4-24	Very channery sandy loam, very cobbly loam, very cobbly fine sandy loam, extremely channery sandy loam	GC, GC-GM, SC-SM	A-1, A-2, A-4	0	15-45	35-70	25-60	15-55	10-45	18-32	4-13
	24-34	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 15.—Engineering 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	Plas-ticity index
	In				Pct	Pct					Pct	
52C:												
Wallen----------	0-4	Channery sandy loam	SC, SC-SM	A-2	0	0-10	50-90	50-75	30-55	15-30	20-35	4-13
	4-24	Very channery sandy loam, very cobbly loam, very cobbly fine sandy loam, extremely channery sandy loam	GC, GC-GM, SC-SM	A-1, A-2, A-4	0	15-45	35-70	25-60	15-55	10-45	18-32	4-13
	24-34	Bedrock			---	---	---	---	---	---	---	---
52D:												
Wallen----------	0-4	Channery sandy loam	SC, SC-SM	A-2	0	0-10	50-90	50-75	30-55	15-30	20-35	4-13
	4-24	Very channery sandy loam, very cobbly loam, very cobbly fine sandy loam, extremely channery sandy loam	GC, GC-GM, SC-SM	A-1, A-2, A-4	0	15-45	35-70	25-60	15-55	10-45	18-32	4-13
	24-34	Bedrock			---	---	---	---	---	---	---	---
52E:												
Wallen----------	0-4	Channery sandy loam	SC, SC-SM	A-2	0	0-10	50-90	50-75	30-55	15-30	20-35	4-13
	4-24	Very channery sandy loam, very cobbly loam, very cobbly fine sandy loam, extremely channery sandy loam	GC, GC-GM, SC-SM	A-1, A-2, A-4	0	15-45	35-70	25-60	15-55	10-45	18-32	4-13
	24-34	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
53E:												
Westmoreland----	0-7	Silt loam	CL	A-4, A-6	0	0	85-95	80-95	75-95	55-90	27-47	9-21
	7-31	Silty clay loam, channery loam, channery silt loam	CL, GC	A-6, A-7	0	0-15	65-95	55-95	50-95	40-95	29-44	13-25
	31-47	Channery silt loam, channery silty clay loam, very channery loam, silty clay loam	GC, SC	A-2, A-6	0	0-20	35-95	30-90	25-90	20-85	27-44	12-25
	47-61	Very channery silt loam, channery silty clay loam, extremely channery silt loam, extremely channery loam	GC, SC	A-2	0	0-20	25-70	20-40	15-40	10-35	27-44	12-25
Poplimento------	0-6	Silt loam	CL	A-6	0	0-5	85-100	80-100	70-100	55-90	27-41	11-19
	6-45	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0-5	85-100	80-100	75-100	70-95	45-69	25-44
	45-62	Channery silty clay loam, channery silty clay, very channery silty clay loam, clay, silty clay loam	GC, SC, CH, CL	A-2, A-6, A-7	0	0-15	45-100	30-100	30-100	25-95	37-59	19-36

Table 15.—Engineering 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	
53E:												
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
53F:												
Westmoreland----	0-7	Silt loam	CL	A-4, A-6	0	0	85-95	80-95	75-95	55-90	27-47	9-21
	7-31	Silty clay loam, channery loam, channery silt loam	CL, GC	A-6, A-7	0	0-15	65-95	55-95	50-95	40-95	29-44	13-25
	31-47	Channery silt loam, channery silty clay loam, very channery loam, silty clay loam	GC, SC	A-2, A-6	0	0-20	35-95	30-90	25-90	20-85	27-44	12-25
	47-61	Very channery silt loam, channery silty clay loam, extremely channery silt loam, extremely channery loam	GC, SC	A-2	0	0-20	25-70	20-40	15-40	10-35	27-44	12-25

Table 15.—Engineering 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	
53F:												
Poplimento------	0-6	Silt loam	CL	A-6	0	0-5	85-100	80-100	70-100	55-90	27-41	11-19
	6-45	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0-5	85-100	80-100	75-100	70-95	45-69	25-44
	45-62	Channery silty clay loam, channery silty clay, very channery silty clay loam, clay, silty clay loam	GC, SC, CH, CL	A-2, A-6, A-7	0	0-15	45-100	30-100	30-100	25-95	37-59	19-36
Berks-----------	0-6	Channery silt loam	CL, GM, ML, SC, GC	A-2, A-4	0	0-20	55-85	50-75	45-75	32-70	16-28	2-8
	6-24	Extremely channery silty clay loam, extremely channery silt loam, very channery silt loam, very channery loam	GC, GM	A-1, A-2, A-4	0	0-30	30-55	25-45	20-45	15-40	16-36	2-13
	24-33	Extremely channery silt loam, very channery silt loam, very channery loam, extremely channery loam	GC-GM, GM	A-1, A-2	0	0-35	25-45	15-35	15-35	10-30	16-25	2-7
	33-43	Bedrock			---	---	---	---	---	---	---	---
54A:												
Wolfgap---------	0-11	Clay loam	CL, CL-ML	A-6, A-4	0	0	90-100	80-100	70-100	55-80	24-54	7-24
	11-58	Clay loam, sandy clay loam, gravelly sandy loam	CL, SC	A-6	0	0-5	60-100	50-100	30-100	15-80	29-45	12-21
	58-72	Very gravelly loamy sand, extremely gravelly fine sandy loam, extremely gravelly loam	GC, GC-GM	A-1, A-2	0	10-20	35-55	20-45	10-45	5-35	20-28	4-10

Table 15.—Engineering 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	
W. Water												

Table 16.—Physical Soil Properties

(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	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
1A:												
Allegheny------------	0-11	15-27	1.20-1.40	4.00-14.00	0.12-0.22	0.0-2.9	1.0-4.0	.28	.28	4	6	48
	11-32	18-35	1.20-1.50	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.15	.20			
	32-61	9-20	1.40-1.60	4.00-42.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.24			
1B:												
Allegheny------------	0-11	15-27	1.20-1.40	4.00-14.00	0.12-0.22	0.0-2.9	1.0-4.0	.28	.28	4	6	48
	11-32	18-35	1.20-1.50	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.15	.20			
	32-61	9-20	1.40-1.60	4.00-42.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.24			
2C:												
Alticrest------------	0-3	8-18	1.40-1.55	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	3-35	8-18	1.40-1.55	14.00-42.00	0.10-0.16	0.0-2.9	0.0-0.5	.32	.32			
	35-45	---	---	0.00-4.00	---	---	---	---	---			
2D:												
Alticrest------------	0-3	8-18	1.40-1.55	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	3-35	8-18	1.40-1.55	14.00-42.00	0.10-0.16	0.0-2.9	0.0-0.5	.32	.32			
	35-45	---	---	0.00-4.00	---	---	---	---	---			
2E:												
Alticrest------------	0-3	8-18	1.40-1.55	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	3-35	8-18	1.40-1.55	14.00-42.00	0.10-0.16	0.0-2.9	0.0-0.5	.32	.32			
	35-45	---	---	0.00-4.00	---	---	---	---	---			
3C:												
Berks----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
Weikert--------------	0-7	10-27	1.20-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.24	.43	2	6	38
	7-19	10-27	1.20-1.40	14.00-42.00	0.04-0.08	0.0-2.9	0.0-0.5	.10	.49			
	19-29	---	---	1.40-42.00	---	---	---	---	---			
3D:												
Berks----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
Weikert--------------	0-7	10-27	1.20-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.24	.43	2	6	38
	7-19	10-27	1.20-1.40	14.00-42.00	0.04-0.08	0.0-2.9	0.0-0.5	.10	.49			
	19-29	---	---	1.40-42.00	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
3E:												
Berks----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
Weikert--------------	0-7	10-27	1.20-1.40	14.00-42.00	0.08-0.14	0.0-2.9	0.5-2.0	.24	.43	2	6	38
	7-19	10-27	1.20-1.40	14.00-42.00	0.04-0.08	0.0-2.9	0.0-0.5	.10	.49			
	19-29	---	---	1.40-42.00	---	---	---	---	---			
4E:												
Berks----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
Gilpin---------------	0-6	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-2.5	.37	.37	3	6	48
	6-30	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.32	.43			
	30-35	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.0-0.5	.10	.49			
	35-45	---	---	1.40-42.00	---	---	---	---	---			
4F:												
Berks----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
Gilpin---------------	0-6	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-2.5	.37	.37	3	6	48
	6-30	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.32	.43			
	30-35	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.0-0.5	.10	.49			
	35-45	---	---	1.40-42.00	---	---	---	---	---			
5D:												
Bland----------------	0-4	15-35	1.20-1.50	4.00-14.00	0.16-0.20	3.0-5.9	0.5-2.5	.43	.43	2	6	48
	4-30	45-60	1.30-1.60	1.40-4.00	0.10-0.15	3.0-5.9	0.0-0.5	.28	.28			
	30-36	20-50	1.30-1.60	1.40-4.00	0.06-0.15	3.0-5.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												
5E:												
Bland----------------	0-4	15-35	1.20-1.50	4.00-14.00	0.16-0.20	3.0-5.9	0.5-2.5	.43	.43	2	6	48
	4-30	45-60	1.30-1.60	1.40-4.00	0.10-0.15	3.0-5.9	0.0-0.5	.28	.28			
	30-36	20-50	1.30-1.60	1.40-4.00	0.06-0.15	3.0-5.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
6B:												
Bland----------------	0-4	15-35	1.20-1.50	4.00-14.00	0.16-0.20	3.0-5.9	0.5-2.5	.43	.43	2	6	48
	4-30	45-60	1.30-1.60	1.40-4.00	0.10-0.15	3.0-5.9	0.0-0.5	.28	.28			
	30-36	20-50	1.30-1.60	1.40-4.00	0.06-0.15	3.0-5.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
6C:												
Bland----------------	0-4	15-35	1.20-1.50	4.00-14.00	0.16-0.20	3.0-5.9	0.5-2.5	.43	.43	2	6	48
	4-30	45-60	1.30-1.60	1.40-4.00	0.10-0.15	3.0-5.9	0.0-0.5	.28	.28			
	30-36	20-50	1.30-1.60	1.40-4.00	0.06-0.15	3.0-5.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
6D:												
Bland----------------	0-4	15-35	1.20-1.50	4.00-14.00	0.16-0.20	3.0-5.9	0.5-2.5	.43	.43	2	6	48
	4-30	45-60	1.30-1.60	1.40-4.00	0.10-0.15	3.0-5.9	0.0-0.5	.28	.28			
	30-36	20-50	1.30-1.60	1.40-4.00	0.06-0.15	3.0-5.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
7C:												
Botetourt------------	0-7	7-27	1.35-1.60	4.00-14.00	0.15-0.19	0.0-2.9	1.0-4.0	.24	.24	5	6	48
	7-37	18-35	1.45-1.70	4.00-14.00	0.08-0.19	0.0-2.9	0.5-3.0	.28	.28			
	37-62	12-35	1.45-1.70	4.00-14.00	0.07-0.18	0.0-2.9	0.5-2.0	.24	.37			
8D:												
Brushy---------------	0-10	10-20	1.20-1.40	4.00-14.00	0.08-0.12	0.0-2.9	0.5-2.5	.20	.37	2	5	48
	10-23	12-35	1.40-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.0-0.5	.17	.43			
	23-33	---	---	0.00-4.00	---	---	---	---	---			
8E:												
Brushy---------------	0-10	10-20	1.20-1.40	4.00-14.00	0.08-0.12	0.0-2.9	0.5-2.5	.20	.37	2	5	48
	10-23	12-35	1.40-1.60	4.00-14.00	0.08-0.12	0.0-2.9	0.0-0.5	.17	.43			
	23-33	---	---	0.00-4.00	---	---	---	---	---			
9D:												
Calvin---------------	0-8	10-25	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	8-25	10-25	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.15	.49			
	25-32	10-25	1.40-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.49			
	32-42	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
9E:												
Calvin---------------	0-8	10-25	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	8-25	10-25	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.15	.49			
	25-32	10-25	1.40-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.49			
	32-42	---	---	1.40-42.00	0.00-0.00	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
10D:												
Calvin---------------	0-8	10-25	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	8-25	10-25	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.15	.49			
	25-32	10-25	1.40-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.49			
	32-42	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
10E:												
Calvin---------------	0-8	10-25	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	8-25	10-25	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.15	.49			
	25-32	10-25	1.40-1.60	14.00-42.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.49			
	32-42	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
11C:												
Carbo----------------	0-12	20-40	1.20-1.40	4.00-14.00	0.16-0.19	3.0-5.9	0.5-2.5	.37	.37	2	6	48
	12-34	60-80	1.30-1.45	0.42-1.40	0.10-0.14	6.0-8.9	0.0-0.5	.17	.17			
	34-44	---	---	0.00-42.00	---	---	---	---	---			
11D:												
Carbo----------------	0-12	20-40	1.20-1.40	4.00-14.00	0.16-0.19	3.0-5.9	0.5-2.5	.37	.37	2	6	48
	12-34	60-80	1.30-1.45	0.42-1.40	0.10-0.14	6.0-8.9	0.0-0.5	.17	.17			
	34-44	---	---	0.00-42.00	---	---	---	---	---			
11E:												
Carbo----------------	0-12	20-40	1.20-1.40	4.00-14.00	0.16-0.19	3.0-5.9	0.5-2.5	.37	.37	2	6	48
	12-34	60-80	1.30-1.45	0.42-1.40	0.10-0.14	6.0-8.9	0.0-0.5	.17	.17			
	34-44	---	---	0.00-42.00	---	---	---	---	---			
11F:												
Carbo----------------	0-12	20-40	1.20-1.40	4.00-14.00	0.16-0.19	3.0-5.9	0.5-2.5	.37	.37	2	6	48
	12-34	60-80	1.30-1.45	0.42-1.40	0.10-0.14	6.0-8.9	0.0-0.5	.17	.17			
	34-44	---	---	0.00-42.00	---	---	---	---	---			
12D:												
Carbo----------------	0-12	20-40	1.20-1.40	4.00-14.00	0.16-0.19	3.0-5.9	0.5-2.5	.37	.37	2	6	48
	12-34	60-80	1.30-1.45	0.42-1.40	0.10-0.14	6.0-8.9	0.0-0.5	.17	.17			
	34-44	---	---	0.00-42.00	---	---	---	---	---			
Rock outcrop.												
12E:												
Carbo----------------	0-12	20-40	1.20-1.40	4.00-14.00	0.16-0.19	3.0-5.9	0.5-2.5	.37	.37	2	6	48
	12-34	60-80	1.30-1.45	0.42-1.40	0.10-0.14	6.0-8.9	0.0-0.5	.17	.17			
	34-44	---	---	0.00-42.00	---	---	---	---	---			
Rock outcrop.												

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	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
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
13E:												
Carbo----------------	0-12	20-40	1.20-1.40	4.00-14.00	0.16-0.19	3.0-5.9	0.5-2.5	.37	.37	2	6	48
	12-34	60-80	1.30-1.45	0.42-1.40	0.10-0.14	6.0-8.9	0.0-0.5	.17	.17			
	34-44	---	---	0.00-42.00	---	---	---	---	---			
Rock outcrop.												
14C:												
Cedarcreek-----------	0-4	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.15	.37	5	8	0
	4-72	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.10	.37			
Alticrest------------	0-3	8-18	1.40-1.55	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	3-35	8-18	1.40-1.55	14.00-42.00	0.10-0.16	0.0-2.9	0.0-0.5	.32	.32			
	35-45	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												
14E:												
Cedarcreek-----------	0-4	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.15	.37	5	8	0
	4-72	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.10	.37			
Alticrest------------	0-3	8-18	1.40-1.55	14.00-42.00	0.12-0.18	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	3-35	8-18	1.40-1.55	14.00-42.00	0.10-0.16	0.0-2.9	0.0-0.5	.32	.32			
	35-45	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												
15C:												
Cedarcreek-----------	0-4	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.15	.37	5	8	0
	4-72	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.10	.37			
Rock outcrop.												
15D:												
Cedarcreek-----------	0-4	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.15	.37	5	8	0
	4-72	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.10	.37			
Rock outcrop.												
15E:												
Cedarcreek-----------	0-4	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.15	.37	5	8	0
	4-72	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.10	.37			
Rock outcrop.												

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
16D:												
Chiswell-------------	0-2	10-27	1.20-1.40	4.00-14.00	0.20-0.24	0.0-2.9	0.5-2.0	.32	.43	2	5	56
	2-17	10-35	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.0-0.5	.17	.43			
	17-20	---	---	1.40-42.00	---	---	---	---	---			
	20-30	---	---	1.40-42.00	---	---	---	---	---			
Litz-----------------	0-11	10-27	1.20-1.50	4.00-14.00	0.13-0.16	0.0-2.9	0.5-2.0	.24	.32	3	6	38
	11-26	10-35	1.20-1.50	4.00-14.00	0.10-0.16	0.0-2.9	0.0-0.5	.15	.37			
	26-36	---	---	1.40-42.00	---	---	---	---	---			
16E:												
Chiswell-------------	0-2	10-27	1.20-1.40	4.00-14.00	0.20-0.24	0.0-2.9	0.5-2.0	.32	.43	2	5	56
	2-17	10-35	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.0-0.5	.17	.43			
	17-20	---	---	1.40-42.00	---	---	---	---	---			
	20-30	---	---	1.40-42.00	---	---	---	---	---			
Litz-----------------	0-11	10-27	1.20-1.50	4.00-14.00	0.13-0.16	0.0-2.9	0.5-2.0	.24	.32	3	6	38
	11-26	10-35	1.20-1.50	4.00-14.00	0.10-0.16	0.0-2.9	0.0-0.5	.15	.37			
	26-36	---	---	1.40-42.00	---	---	---	---	---			
16F:												
Chiswell-------------	0-2	10-27	1.20-1.40	4.00-14.00	0.20-0.24	0.0-2.9	0.5-2.0	.32	.43	2	5	56
	2-17	10-35	1.20-1.60	4.00-14.00	0.04-0.10	0.0-2.9	0.0-0.5	.17	.43			
	17-20	---	---	1.40-42.00	---	---	---	---	---			
	20-30	---	---	1.40-42.00	---	---	---	---	---			
Litz-----------------	0-11	10-27	1.20-1.50	4.00-14.00	0.13-0.16	0.0-2.9	0.5-2.0	.24	.32	3	6	38
	11-26	10-35	1.20-1.50	4.00-14.00	0.10-0.16	0.0-2.9	0.0-0.5	.15	.37			
	26-36	---	---	1.40-42.00	---	---	---	---	---			
17B:												
Coursey--------------	0-13	18-27	1.35-1.60	4.00-14.00	0.14-0.23	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	13-65	18-35	1.50-1.70	4.00-14.00	0.07-0.15	0.0-2.9	0.5-3.0	.20	.20			
18B:												
Craigsville----------	0-7	5-15	1.20-1.40	14.00-141.00	0.06-0.12	0.0-2.9	1.0-5.0	.10	.17	3	3	48
	7-35	5-15	1.30-1.60	14.00-141.00	0.06-0.15	0.0-2.9	0.5-1.0	.10	.28			
	35-61	5-10	1.35-1.55	42.00-141.00	0.04-0.09	0.0-2.9	0.5-1.0	.10	.17			
19D:												
Drypond--------------	0-3	5-25	1.25-1.40	42.00-141.00	0.08-0.10	0.0-2.9	0.5-2.0	.10	.20	1	3	48
	3-11	5-25	1.20-1.40	42.00-141.00	0.04-0.08	0.0-2.9	0.0-0.5	.10	.32			
	11-16	5-20	1.20-1.40	42.00-141.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.32			
	16-26	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
19E:												
Drypond	0-3	5-25	1.25-1.40	42.00-141.00	0.08-0.10	0.0-2.9	0.5-2.0	.10	.20	1	3	48
	3-11	5-25	1.20-1.40	42.00-141.00	0.04-0.08	0.0-2.9	0.0-0.5	.10	.32			
	11-16	5-20	1.20-1.40	42.00-141.00	0.03-0.08	0.0-2.9	0.0-0.5	.10	.32			
	16-26	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												
20B:												
Frederick	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
20C:												
Frederick	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
20D:												
Frederick	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
20E:												
Frederick	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
20F:												
Frederick	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
21B:												
Frederick	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.17	.32	4	6	38
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
21C:												
Frederick------------	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.17	.32	4	6	38
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
21D:												
Frederick------------	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.17	.32	4	6	38
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
21E:												
Frederick------------	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.17	.32	4	6	38
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
21F:												
Frederick------------	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.17	.32	4	6	38
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
22B:												
Frederick------------	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
22C:												
Frederick------------	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
22D:												
Frederick------------	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			
22E:												
Frederick------------	0-8	7-27	1.25-1.50	14.00-42.00	0.17-0.22	0.0-2.9	0.5-2.5	.32	.32	5	6	48
	8-14	35-60	1.20-1.50	4.00-14.00	0.06-0.15	3.0-5.9	0.0-0.5	.24	.32			
	14-50	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.15	.15			
	50-62	40-75	1.20-1.40	4.00-14.00	0.06-0.14	3.0-5.9	0.0-0.5	.17	.24			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	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
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
23C:												
Gilpin----------------	0-6	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-2.5	.37	.37	3	6	48
	6-30	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.32	.43			
	30-35	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.0-0.5	.10	.49			
	35-45	---	---	1.40-42.00	---	---	---	---	---			
Berks-----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
23D:												
Gilpin----------------	0-6	15-27	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.5-2.5	.37	.37	3	6	48
	6-30	18-35	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.0-0.5	.32	.43			
	30-35	15-35	1.20-1.50	4.00-14.00	0.08-0.12	0.0-2.9	0.0-0.5	.10	.49			
	35-45	---	---	1.40-42.00	---	---	---	---	---			
Berks-----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
24C:												
Grimsley--------------	0-10	10-20	1.35-1.45	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.24	.28	4	5	56
	10-60	20-35	1.40-1.50	14.00-42.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
24D:												
Grimsley--------------	0-10	10-20	1.35-1.45	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.24	.28	4	5	56
	10-60	20-35	1.40-1.50	14.00-42.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
24E:												
Grimsley--------------	0-10	10-20	1.35-1.45	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.24	.28	4	5	56
	10-60	20-35	1.40-1.50	14.00-42.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
25D:												
Grimsley--------------	0-10	10-20	1.35-1.45	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.24	.28	4	5	56
	10-60	20-35	1.40-1.50	14.00-42.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
Cedarcreek------------	0-4	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.15	.37	5	8	0
	4-72	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.10	.37			
Berks-----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
								Kw	Kf	T		
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
25E:												
Grimsley-------------	0-10	10-20	1.35-1.45	14.00-42.00	0.07-0.12	0.0-2.9	0.5-3.0	.24	.28	4	5	56
	10-60	20-35	1.40-1.50	14.00-42.00	0.05-0.11	0.0-2.9	0.0-0.5	.10	.32			
Cedarcreek-----------	0-4	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.15	.37	5	8	0
	4-72	18-27	1.35-1.65	4.00-42.00	0.07-0.16	0.0-2.9	0.0-0.5	.10	.37			
Berks----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
26B:												
Groseclose-----------	0-11	7-27	1.25-1.55	14.00-42.00	0.11-0.20	0.0-2.9	0.5-2.5	.43	.43	5	5	56
	11-61	35-60	1.35-1.60	0.42-1.40	0.10-0.17	6.0-8.9	0.0-0.5	.24	.24			
26C:												
Groseclose-----------	0-11	7-27	1.25-1.55	14.00-42.00	0.11-0.20	0.0-2.9	0.5-2.5	.43	.43	5	5	56
	11-61	35-60	1.35-1.60	0.42-1.40	0.10-0.17	6.0-8.9	0.0-0.5	.24	.24			
26D:												
Groseclose-----------	0-11	7-27	1.25-1.55	14.00-42.00	0.11-0.20	0.0-2.9	0.5-2.5	.43	.43	5	5	56
	11-61	35-60	1.35-1.60	0.42-1.40	0.10-0.17	6.0-8.9	0.0-0.5	.24	.24			
26E:												
Groseclose-----------	0-11	7-27	1.25-1.55	14.00-42.00	0.11-0.20	0.0-2.9	0.5-2.5	.43	.43	5	5	56
	11-61	35-60	1.35-1.60	0.42-1.40	0.10-0.17	6.0-8.9	0.0-0.5	.24	.24			
27B:												
Guernsey-------------	0-10	13-27	1.30-1.50	4.00-14.00	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-21	22-38	1.35-1.55	1.40-14.00	0.15-0.21	3.0-5.9	0.3-1.0	.37	.43			
	21-56	35-60	1.40-1.60	0.42-4.00	0.10-0.15	6.0-8.9	0.1-0.5	.37	.37			
	56-61	35-60	1.40-1.60	0.42-4.00	0.06-0.10	6.0-8.9	0.1-0.3	.24	.28			
27C:												
Guernsey-------------	0-10	13-27	1.30-1.50	4.00-14.00	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-21	22-38	1.35-1.55	1.40-14.00	0.15-0.21	3.0-5.9	0.3-1.0	.37	.43			
	21-56	35-60	1.40-1.60	0.42-4.00	0.10-0.15	6.0-8.9	0.1-0.5	.37	.37			
	56-61	35-60	1.40-1.60	0.42-4.00	0.06-0.10	6.0-8.9	0.1-0.3	.24	.28			
28C:												
Lily-----------------	0-4	5-20	1.20-1.40	14.00-42.00	0.09-0.16	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	4-30	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.1-0.5	.37	.37			
	30-36	5-35	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
28D:												
Lily-----------------	0-4	5-20	1.20-1.40	14.00-42.00	0.09-0.16	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	4-30	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.1-0.5	.37	.37			
	30-36	5-35	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
28E:												
Lily-----------------	0-4	5-20	1.20-1.40	14.00-42.00	0.09-0.16	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	4-30	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.1-0.5	.37	.37			
	30-36	5-35	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
28F:												
Lily-----------------	0-4	5-20	1.20-1.40	14.00-42.00	0.09-0.16	0.0-2.9	0.5-2.0	.28	.28	2	3	86
	4-30	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.1-0.5	.37	.37			
	30-36	5-35	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
29D:												
Lily-----------------	0-4	5-20	1.20-1.40	14.00-42.00	0.09-0.16	0.0-2.9	0.5-2.0	.28	.28	2	8	0
	4-30	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.1-0.5	.37	.37			
	30-36	5-35	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
29E:												
Lily-----------------	0-4	5-20	1.20-1.40	14.00-42.00	0.09-0.16	0.0-2.9	0.5-2.0	.28	.28	2	8	0
	4-30	18-35	1.25-1.35	14.00-42.00	0.12-0.18	0.0-2.9	0.1-0.5	.37	.37			
	30-36	5-35	1.25-1.35	14.00-42.00	0.08-0.17	0.0-2.9	0.0-0.5	.17	.37			
	36-46	---	---	0.00-4.00	---	---	---	---	---			
30C:												
Madsheep-------------	0-5	10-25	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	1.0-3.0	.24	.37	2	5	48
	5-25	10-25	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.15	.49			
	25-35	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
30D:												
Madsheep-------------	0-5	10-25	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	1.0-3.0	.24	.37	2	5	48
	5-25	10-25	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.15	.49			
	25-35	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
31E:												
Madsheep-------------	0-5	10-25	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	1.0-3.0	.24	.37	2	5	48
	5-25	10-25	1.40-1.60	14.00-42.00	0.08-0.16	0.0-2.9	0.0-0.5	.15	.49			
	25-35	---	---	1.40-42.00	0.00-0.00	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
32A:												
Melvin	0-10	12-17	1.20-1.60	4.00-14.00	0.18-0.23	0.0-2.9	1.0-5.0	.43	.43	5	5	56
	10-50	12-35	1.30-1.60	4.00-14.00	0.18-0.23	0.0-2.9	0.5-2.0	.43	.43			
	50-62	7-40	1.40-1.70	4.00-14.00	0.16-0.23	0.0-2.9	0.2-1.0	.15	.24			
33.												
Mine Tipples, Dumps, and Tailings												
34B:												
Murrill	0-10	10-20	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-3.0	.37	.37	5	5	56
	10-44	18-35	1.40-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.32	.32			
	44-61	25-55	1.40-1.70	1.40-14.00	0.08-0.12	3.0-5.9	0.0-0.5	.15	.24			
34C:												
Murrill	0-10	10-20	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-3.0	.37	.37	5	5	56
	10-44	18-35	1.40-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.32	.32			
	44-61	25-55	1.40-1.70	1.40-14.00	0.08-0.12	3.0-5.9	0.0-0.5	.15	.24			
34D:												
Murrill	0-10	10-20	1.20-1.50	4.00-14.00	0.12-0.16	0.0-2.9	0.5-3.0	.37	.37	5	5	56
	10-44	18-35	1.40-1.70	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.32	.32			
	44-61	25-55	1.40-1.70	1.40-14.00	0.08-0.12	3.0-5.9	0.0-0.5	.15	.24			
35A:												
Newark	0-5	7-27	1.20-1.40	4.00-14.00	0.15-0.23	0.0-2.9	1.0-4.0	.43	.43	5	5	56
	5-30	18-35	1.20-1.45	4.00-14.00	0.18-0.23	0.0-2.9	0.0-0.5	.43	.43			
	30-61	12-40	1.30-1.50	4.00-14.00	0.15-0.22	0.0-2.9	0.0-0.5	.43	.43			
Lindside	0-9	15-27	1.20-1.40	4.00-14.00	0.20-0.26	0.0-2.9	1.0-4.0	.37	.37	5	6	48
	9-51	18-35	1.20-1.40	4.00-14.00	0.17-0.22	0.0-2.9	0.2-1.0	.43	.43			
	51-61	15-35	1.20-1.40	4.00-14.00	0.12-0.18	0.0-2.9	0.2-1.0	.43	.43			
36F:												
Newbern	0-5	10-27	1.20-1.50	4.00-14.00	0.07-0.20	0.0-2.9	0.5-2.0	.32	.43	1	5	56
	5-14	10-27	1.30-1.60	4.00-14.00	0.07-0.20	0.0-2.9	0.0-0.5	.43	.55			
	14-24	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												
37C:												
Oriskany	0-6	5-15	1.20-1.40	14.00-42.00	0.08-0.12	0.0-2.9	0.5-3.0	.15	.24	5	3	56
	6-14	10-27	1.30-1.65	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.5	.10	.24			
	14-61	10-35	1.30-1.65	14.00-42.00	0.06-0.15	0.0-2.9	0.0-0.5	.10	.20			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	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
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
37D:												
Oriskany	0-6	5-15	1.20-1.40	14.00-42.00	0.08-0.12	0.0-2.9	0.5-3.0	.15	.24	5	3	56
	6-14	10-27	1.30-1.65	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.5	.10	.24			
	14-61	10-35	1.30-1.65	14.00-42.00	0.06-0.15	0.0-2.9	0.0-0.5	.10	.20			
38C:												
Oriskany	0-6	5-15	1.20-1.40	14.00-42.00	0.08-0.12	0.0-2.9	0.5-3.0	.15	.24	5	3	56
	6-14	10-27	1.30-1.65	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.5	.10	.24			
	14-61	10-35	1.30-1.65	14.00-42.00	0.06-0.15	0.0-2.9	0.0-0.5	.10	.20			
38D:												
Oriskany	0-6	5-15	1.20-1.40	14.00-42.00	0.08-0.12	0.0-2.9	0.5-3.0	.15	.24	5	3	56
	6-14	10-27	1.30-1.65	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.5	.10	.24			
	14-61	10-35	1.30-1.65	14.00-42.00	0.06-0.15	0.0-2.9	0.0-0.5	.10	.20			
38E:												
Oriskany	0-6	5-15	1.20-1.40	14.00-42.00	0.08-0.12	0.0-2.9	0.5-3.0	.15	.24	5	3	56
	6-14	10-27	1.30-1.65	14.00-42.00	0.06-0.19	0.0-2.9	0.0-0.5	.10	.24			
	14-61	10-35	1.30-1.65	14.00-42.00	0.06-0.15	0.0-2.9	0.0-0.5	.10	.20			
39D:												
Paddyknob	0-4	10-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	1.0-3.0	.24	.37	2	5	48
	4-26	7-18	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	0.0-0.5	.10	.32			
	26-36	---	---	0.00-4.00	0.00-0.00	---	---	---	---			
Rock outcrop.												
39E:												
Paddyknob	0-4	10-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	1.0-3.0	.24	.37	2	5	48
	4-26	7-18	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	0.0-0.5	.10	.32			
	26-36	---	---	0.00-4.00	0.00-0.00	---	---	---	---			
Rock outcrop.												
40D:												
Paddyknob	0-4	10-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	1.0-3.0	.24	.37	2	5	48
	4-26	7-18	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	0.0-0.5	.10	.32			
	26-36	---	---	0.00-4.00	0.00-0.00	---	---	---	---			
40E:												
Paddyknob	0-4	10-20	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	1.0-3.0	.24	.37	2	5	48
	4-26	7-18	1.20-1.50	42.00-141.00	0.08-0.12	0.0-2.9	0.0-0.5	.10	.32			
	26-36	---	---	0.00-4.00	0.00-0.00	---	---	---	---			
41A:												
Philo	0-5	10-18	1.20-1.40	14.00-42.00	0.10-0.14	0.0-2.9	1.0-4.0	.24	.24	5	3	86
	5-44	5-18	1.20-1.40	4.00-14.00	0.10-0.20	0.0-2.9	0.2-1.0	.32	.32			
	44-60	5-18	1.20-1.40	14.00-42.00	0.06-0.10	0.0-2.9	0.2-1.0	.10	.28			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
42B:												
Pisgah---------------	0-8	10-27	1.00-1.20	4.00-14.00	0.16-0.19	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	8-50	40-60	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.24	.24			
	50-65	30-60	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.24	.24			
42C:												
Pisgah---------------	0-8	10-27	1.00-1.20	4.00-14.00	0.16-0.19	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	8-50	40-60	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.24	.24			
	50-65	30-60	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.24	.24			
43B:												
Pisgah---------------	0-8	10-27	1.00-1.20	4.00-14.00	0.16-0.19	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	8-50	40-60	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.24	.24			
	50-65	30-60	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.24	.24			
43C:												
Pisgah---------------	0-8	10-27	1.00-1.20	4.00-14.00	0.16-0.19	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	8-50	40-60	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.24	.24			
	50-65	30-60	1.20-1.50	4.00-14.00	0.10-0.15	3.0-5.9	0.0-0.5	.24	.24			
44.												
Pits, quarry												
45A:												
Pope-----------------	0-8	5-15	1.20-1.40	14.00-42.00	0.10-0.16	0.0-2.9	1.0-4.0	.24	.24	5	3	86
	8-27	5-18	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.2-1.0	.17	.24			
	27-64	5-20	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.2-1.0	.10	.15			
46C:												
Poplimento-----------	0-6	17-27	1.20-1.35	4.00-14.00	0.15-0.22	0.0-2.9	0.5-2.0	.37	.37	4	6	48
	6-45	35-60	1.30-1.60	1.40-4.00	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
	45-62	27-50	1.25-1.50	1.40-4.00	0.05-0.12	3.0-5.9	0.0-0.5	.20	.32			
Westmoreland---------	0-7	15-30	1.20-1.40	4.00-14.00	0.16-0.20	0.0-2.9	1.0-4.0	.28	.32	3	6	48
	7-31	20-35	1.20-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.37	.43			
	31-47	18-35	1.20-1.50	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.20	.43			
	47-61	18-35	1.20-1.50	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.43			
46D:												
Poplimento-----------	0-6	17-27	1.20-1.35	4.00-14.00	0.15-0.22	0.0-2.9	0.5-2.0	.37	.37	4	6	48
	6-45	35-60	1.30-1.60	1.40-4.00	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
	45-62	27-50	1.25-1.50	1.40-4.00	0.05-0.12	3.0-5.9	0.0-0.5	.20	.32			
Westmoreland---------	0-7	15-30	1.20-1.40	4.00-14.00	0.16-0.20	0.0-2.9	1.0-4.0	.28	.32	3	6	48
	7-31	20-35	1.20-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.37	.43			
	31-47	18-35	1.20-1.50	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.20	.43			
	47-61	18-35	1.20-1.50	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.43			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	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
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
47A:												
Purdy----------------	0-14	18-35	1.30-1.50	0.42-1.40	0.18-0.24	3.0-5.9	1.0-5.0	.37	.37	5	6	48
	14-47	35-50	1.30-1.60	0.01-1.40	0.12-0.18	3.0-5.9	0.2-1.0	.37	.37			
	47-61	35-50	1.30-1.60	0.01-1.40	0.10-0.16	3.0-5.9	0.2-1.0	.15	.32			
48B:												
Timberland-----------	0-12	6-25	1.30-1.50	14.00-42.00	0.11-0.20	0.0-2.9	1.0-3.0	.37	.37	5	5	56
	12-25	13-35	1.30-1.50	4.00-14.00	0.11-0.19	0.0-2.9	0.5-1.0	.28	.37			
	25-35	35-60	1.40-1.55	4.00-14.00	0.10-0.18	3.0-5.9	0.0-0.5	.15	.24			
	35-61	35-60	1.40-1.55	4.00-14.00	0.10-0.18	3.0-5.9	0.0-0.5	.24	.24			
49B:												
Tumbling-------------	0-9	10-27	1.20-1.45	4.00-42.00	0.14-0.18	0.0-2.9	0.5-2.0	.28	.28	5	5	56
	9-44	35-50	1.20-1.40	4.00-14.00	0.08-0.12	0.0-2.9	0.0-0.5	.24	.24			
	44-62	35-55	1.20-1.45	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.24	.24			
49C:												
Tumbling-------------	0-9	10-27	1.20-1.45	4.00-42.00	0.14-0.18	0.0-2.9	0.5-2.0	.28	.28	5	5	56
	9-44	35-50	1.20-1.40	4.00-14.00	0.08-0.12	0.0-2.9	0.0-0.5	.24	.24			
	44-62	35-55	1.20-1.45	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.24	.24			
50.												
Udorthents-Urban land												
51D:												
Wallen---------------	0-4	8-20	1.40-1.55	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.15	.24	2	3	56
	4-24	8-20	1.40-1.55	14.00-42.00	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
	24-34	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												
51E:												
Wallen---------------	0-4	8-20	1.40-1.55	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.15	.24	2	3	56
	4-24	8-20	1.40-1.55	14.00-42.00	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
	24-34	---	---	0.00-4.00	---	---	---	---	---			
Rock outcrop.												
52C:												
Wallen---------------	0-4	8-20	1.40-1.55	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.15	.24	2	3	56
	4-24	8-20	1.40-1.55	14.00-42.00	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
	24-34	---	---	0.00-4.00	---	---	---	---	---			
52D:												
Wallen---------------	0-4	8-20	1.40-1.55	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.15	.24	2	3	56
	4-24	8-20	1.40-1.55	14.00-42.00	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
	24-34	---	---	0.00-4.00	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Saturated hydraulic conductivity	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
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
52E:												
Wallen----------------	0-4	8-20	1.40-1.55	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.15	.24	2	3	56
	4-24	8-20	1.40-1.55	14.00-42.00	0.05-0.10	0.0-2.9	0.0-0.5	.10	.32			
	24-34	---	---	0.00-4.00	---	---	---	---	---			
53E:												
Westmoreland---------	0-7	15-30	1.20-1.40	4.00-14.00	0.16-0.20	0.0-2.9	1.0-4.0	.28	.32	3	6	48
	7-31	20-35	1.20-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.37	.43			
	31-47	18-35	1.20-1.50	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.20	.43			
	47-61	18-35	1.20-1.50	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.43			
Poplimento-----------	0-6	17-27	1.20-1.35	4.00-14.00	0.15-0.22	0.0-2.9	0.5-2.0	.37	.37	4	6	48
	6-45	35-60	1.30-1.60	1.40-4.00	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
	45-62	27-50	1.25-1.50	1.40-4.00	0.05-0.12	3.0-5.9	0.0-0.5	.20	.32			
Berks----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
53F:												
Westmoreland---------	0-7	15-30	1.20-1.40	4.00-14.00	0.16-0.20	0.0-2.9	1.0-4.0	.28	.32	3	6	48
	7-31	20-35	1.20-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.37	.43			
	31-47	18-35	1.20-1.50	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.20	.43			
	47-61	18-35	1.20-1.50	4.00-14.00	0.06-0.10	0.0-2.9	0.0-0.5	.10	.43			
Poplimento-----------	0-6	17-27	1.20-1.35	4.00-14.00	0.15-0.22	0.0-2.9	0.5-2.0	.37	.37	4	6	48
	6-45	35-60	1.30-1.60	1.40-4.00	0.10-0.14	6.0-8.9	0.0-0.5	.28	.28			
	45-62	27-50	1.25-1.50	1.40-4.00	0.05-0.12	3.0-5.9	0.0-0.5	.20	.32			
Berks----------------	0-6	10-23	1.20-1.50	4.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.28	.43	3	5	48
	6-24	10-32	1.20-1.60	4.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.43			
	24-33	10-20	1.20-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.0-0.5	.10	.55			
	33-43	---	---	1.40-42.00	0.00-0.00	---	---	---	---			
54A:												
Wolfgap--------------	0-11	12-35	1.35-1.60	4.00-14.00	0.12-0.18	0.0-2.9	1.0-5.0	.20	.20	5	5	56
	11-58	18-30	1.45-1.70	4.00-14.00	0.08-0.16	0.0-2.9	1.0-3.0	.20	.20			
	58-72	8-15	1.50-1.70	14.00-42.00	0.04-0.08	0.0-2.9	0.5-1.0	.10	.32			
W.												
Water												

Table 17.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
1A:				
Allegheny	0-11	7.5-18	5.6-14	4.5-6.0
	11-32	6.3-13	4.7-10	4.5-6.0
	32-61	3.1-8.1	2.4-6.1	4.5-6.0
1B:				
Allegheny	0-11	7.5-18	5.6-14	4.5-6.0
	11-32	6.3-13	4.7-10	4.5-6.0
	32-61	3.1-8.1	2.4-6.1	4.5-6.0
2C:				
Alticrest	0-3	3.1-9.0	2.3-6.8	4.5-5.5
	3-35	2.0-5.6	1.5-4.2	4.5-5.5
	35-45	---	---	---
2D:				
Alticrest	0-3	3.1-9.0	2.3-6.8	4.5-5.5
	3-35	2.0-5.6	1.5-4.2	4.5-5.5
	35-45	---	---	---
2E:				
Alticrest	0-3	3.1-9.0	2.3-6.8	4.5-5.5
	3-35	2.0-5.6	1.5-4.2	4.5-5.5
	35-45	---	---	---
3C:				
Berks	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
Weikert	0-7	3.6-11	2.7-8.4	4.5-5.5
	7-19	2.5-7.9	1.9-5.9	3.5-5.5
	19-29	---	---	---
3D:				
Berks	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
Weikert	0-7	3.6-11	2.7-8.4	4.5-5.5
	7-19	2.5-7.9	1.9-5.9	3.5-5.5
	19-29	---	---	---
3E:				
Berks	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
Weikert	0-7	3.6-11	2.7-8.4	4.5-5.5
	7-19	2.5-7.9	1.9-5.9	3.5-5.5
	19-29	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
4E:				
Berks----------------	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
Gilpin---------------	0-6	6.4-18	4.8-14	3.5-5.5
	6-30	6.3-13	4.7-10	3.5-5.5
	30-35	5.2-13	3.9-10	3.5-5.5
	35-45	---	---	---
4F:				
Berks----------------	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
Gilpin---------------	0-6	6.4-18	4.8-14	3.5-5.5
	6-30	6.3-13	4.7-10	3.5-5.5
	30-35	5.2-13	3.9-10	3.5-5.5
	35-45	---	---	---
5D:				
Bland----------------	0-4	7.5-19	5.6-14	5.1-7.3
	4-30	16-22	12-17	5.1-7.3
	30-36	7.0-19	5.2-14	5.1-7.3
	36-46	---	---	---
Rock outcrop.				
5E:				
Bland----------------	0-4	7.5-19	5.6-14	5.1-7.3
	4-30	16-22	12-17	5.1-7.3
	30-36	7.0-19	5.2-14	5.1-7.3
	36-46	---	---	---
Rock outcrop.				
6B:				
Bland----------------	0-4	7.5-19	5.6-14	5.1-7.3
	4-30	16-22	12-17	5.1-7.3
	30-36	7.0-19	5.2-14	5.1-7.3
	36-46	---	---	---
6C:				
Bland----------------	0-4	7.5-19	5.6-14	5.1-7.3
	4-30	16-22	12-17	5.1-7.3
	30-36	7.0-19	5.2-14	5.1-7.3
	36-46	---	---	---
6D:				
Bland----------------	0-4	7.5-19	5.6-14	5.1-7.3
	4-30	16-22	12-17	5.1-7.3
	30-36	7.0-19	5.2-14	5.1-7.3
	36-46	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
7C:				
Botetourt------------	0-7	3.0-16	2.0-12	5.1-6.5
	7-37	6.0-16	6.0-12	5.1-6.5
	37-62	4.0-13	3.0-10	5.1-6.5
8D:				
Brushy---------------	0-10	5.8-14	4.3-10	3.5-6.0
	10-23	4.2-13	3.2-10	3.5-6.0
	23-33	---	---	---
8E:				
Brushy---------------	0-10	5.8-14	4.3-10	3.5-6.0
	10-23	4.2-13	3.2-10	3.5-6.0
	23-33	---	---	---
9D:				
Calvin---------------	0-8	5.8-16	4.3-12	4.5-5.5
	8-25	3.5-9.9	2.6-7.4	4.5-5.5
	25-32	3.5-9.9	2.6-7.4	4.5-5.5
	32-42	---	---	---
9E:				
Calvin---------------	0-8	5.8-16	4.3-12	4.5-5.5
	8-25	3.5-9.9	2.6-7.4	4.5-5.5
	25-32	3.5-9.9	2.6-7.4	4.5-5.5
	32-42	---	---	---
10D:				
Calvin---------------	0-8	5.8-16	4.3-12	4.5-5.5
	8-25	3.5-9.9	2.6-7.4	4.5-5.5
	25-32	3.5-9.9	2.6-7.4	4.5-5.5
	32-42	---	---	---
10E:				
Calvin---------------	0-8	5.8-16	4.3-12	4.5-5.5
	8-25	3.5-9.9	2.6-7.4	4.5-5.5
	25-32	3.5-9.9	2.6-7.4	4.5-5.5
	32-42	---	---	---
11C:				
Carbo----------------	0-12	8.1-20	6.1-15	4.5-7.3
	12-34	21-29	16-22	5.6-7.8
	34-44	---	---	---
11D:				
Carbo----------------	0-12	8.1-20	6.1-15	4.5-7.3
	12-34	21-29	16-22	5.6-7.8
	34-44	---	---	---
11E:				
Carbo----------------	0-12	8.1-20	6.1-15	4.5-7.3
	12-34	21-29	16-22	5.6-7.8
	34-44	---	---	---
11F:				
Carbo----------------	0-12	8.1-20	6.1-15	4.5-7.3
	12-34	21-29	16-22	5.6-7.8
	34-44	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
12D:				
Carbo----------------	0-12	8.1-20	6.1-15	4.5-7.3
	12-34	21-29	16-22	5.6-7.8
	34-44	---	---	---
Rock outcrop.				
12E:				
Carbo----------------	0-12	8.1-20	6.1-15	4.5-7.3
	12-34	21-29	16-22	5.6-7.8
	34-44	---	---	---
Rock outcrop.				
13E:				
Carbo----------------	0-12	8.1-20	6.1-15	4.5-7.3
	12-34	21-29	16-22	5.6-7.8
	34-44	---	---	---
Rock outcrop.				
14C:				
Cedarcreek-----------	0-4	6.3-11	4.7-7.9	3.5-5.5
	4-72	6.3-11	4.7-7.9	3.5-5.5
Alticrest------------	0-3	3.1-9.0	2.3-6.8	4.5-5.5
	3-35	2.0-5.6	1.5-4.2	4.5-5.5
	35-45	---	---	---
Rock outcrop.				
14E:				
Cedarcreek-----------	0-4	6.3-11	4.7-7.9	3.5-5.5
	4-72	6.3-11	4.7-7.9	3.5-5.5
Alticrest------------	0-3	3.1-9.0	2.3-6.8	4.5-5.5
	3-35	2.0-5.6	1.5-4.2	4.5-5.5
	35-45	---	---	---
Rock outcrop.				
15C:				
Cedarcreek-----------	0-4	6.3-11	4.7-7.9	3.5-5.5
	4-72	6.3-11	4.7-7.9	3.5-5.5
Rock outcrop.				
15D:				
Cedarcreek-----------	0-4	6.3-11	4.7-7.9	3.5-5.5
	4-72	6.3-11	4.7-7.9	3.5-5.5
Rock outcrop.				
15E:				
Cedarcreek-----------	0-4	6.3-11	4.7-7.9	3.5-5.5
	4-72	6.3-11	4.7-7.9	3.5-5.5
Rock outcrop.				

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
16D:				
Chiswell-------------	0-2	4.6-14	3.5-10	3.5-6.0
	2-17	3.5-13	2.6-10	3.5-6.0
	17-20	---	---	---
	20-30	---	---	---
Litz-----------------	0-11	4.6-14	3.5-10	4.5-5.5
	11-26	3.5-13	2.6-10	4.5-5.5
	26-36	---	---	---
16E:				
Chiswell-------------	0-2	4.6-14	3.5-10	3.5-6.0
	2-17	3.5-13	2.6-10	3.5-6.0
	17-20	---	---	---
	20-30	---	---	---
Litz-----------------	0-11	4.6-14	3.5-10	4.5-5.5
	11-26	3.5-13	2.6-10	4.5-5.5
	26-36	---	---	---
16F:				
Chiswell-------------	0-2	4.6-14	3.5-10	3.5-6.0
	2-17	3.5-13	2.6-10	3.5-6.0
	17-20	---	---	---
	20-30	---	---	---
Litz-----------------	0-11	4.6-14	3.5-10	4.5-5.5
	11-26	3.5-13	2.6-10	4.5-5.5
	26-36	---	---	---
17B:				
Coursey--------------	0-13	8.6-16	6.4-12	3.5-5.5
	13-65	7.4-19	5.6-14	3.5-5.5
18B:				
Craigsville----------	0-7	4.0-16	3.0-12	4.5-5.5
	7-35	2.9-7.5	2.2-5.6	4.5-5.5
	35-61	2.9-5.8	2.2-4.3	4.5-5.5
19D:				
Drypond--------------	0-3	2.4-11	1.8-8.1	3.5-5.0
	3-11	1.2-7.4	0.9-5.5	3.5-5.0
	11-16	1.2-6.1	0.9-4.6	3.5-5.0
	16-26	---	---	---
Rock outcrop.				
19E:				
Drypond--------------	0-3	2.4-11	1.8-8.1	3.5-5.0
	3-11	1.2-7.4	0.9-5.5	3.5-5.0
	11-16	1.2-6.1	0.9-4.6	3.5-5.0
	16-26	---	---	---
Rock outcrop.				
20B:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
20C:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
20D:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
20E:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
20F:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
21B:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
21C:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
21D:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
21E:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
21F:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
22B:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
22C:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
22D:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
22E:				
Frederick------------	0-8	3.0-12	2.2-9.3	4.5-6.0
	8-14	8.8-16	6.6-12	4.5-6.0
	14-50	10-20	7.5-15	4.5-6.0
	50-62	10-20	7.5-15	4.5-6.0
23C:				
Gilpin---------------	0-6	6.4-18	4.8-14	3.5-5.5
	6-30	6.3-13	4.7-10	3.5-5.5
	30-35	5.2-13	3.9-10	3.5-5.5
	35-45	---	---	---
Berks----------------	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
23D:				
Gilpin---------------	0-6	6.4-18	4.8-14	3.5-5.5
	6-30	6.3-13	4.7-10	3.5-5.5
	30-35	5.2-13	3.9-10	3.5-5.5
	35-45	---	---	---
Berks----------------	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
24C:				
Grimsley-------------	0-10	4.6-12	3.5-8.6	4.5-5.5
	10-60	7.0-13	5.2-10	4.5-5.5
24D:				
Grimsley-------------	0-10	4.6-12	3.5-8.6	4.5-5.5
	10-60	7.0-13	5.2-10	4.5-5.5
24E:				
Grimsley-------------	0-10	4.6-12	3.5-8.6	4.5-5.5
	10-60	7.0-13	5.2-10	4.5-5.5
25D:				
Grimsley-------------	0-10	4.6-12	3.5-8.6	4.5-5.5
	10-60	7.0-13	5.2-10	4.5-5.5
Cedarcreek-----------	0-4	6.3-11	4.7-7.9	3.5-5.5
	4-72	6.3-11	4.7-7.9	3.5-5.5

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
25D:				
Berks	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
25E:				
Grimsley	0-10	4.6-12	3.5-8.6	4.5-5.5
	10-60	7.0-13	5.2-10	4.5-5.5
Cedarcreek	0-4	6.3-11	4.7-7.9	3.5-5.5
	4-72	6.3-11	4.7-7.9	3.5-5.5
Berks	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
26B:				
Groseclose	0-11	4.7-14	3.5-10	3.5-5.5
	11-61	12-22	9.2-17	3.5-5.5
26C:				
Groseclose	0-11	4.7-14	3.5-10	3.5-5.5
	11-61	12-22	9.2-17	3.5-5.5
26D:				
Groseclose	0-11	4.7-14	3.5-10	3.5-5.5
	11-61	12-22	9.2-17	3.5-5.5
26E:				
Groseclose	0-11	4.7-14	3.5-10	3.5-5.5
	11-61	12-22	9.2-17	3.5-5.5
27B:				
Guernsey	0-10	6.8-16	5.1-12	4.5-7.3
	10-21	8.4-16	6.3-12	4.5-6.0
	21-56	12-22	9.4-17	4.5-7.8
	56-61	12-22	9.4-16	5.1-8.4
27C:				
Guernsey	0-10	6.8-16	5.1-12	4.5-7.3
	10-21	8.4-16	6.3-12	4.5-6.0
	21-56	12-22	9.4-17	4.5-7.8
	56-61	12-22	9.4-16	5.1-8.4
28C:				
Lily	0-4	2.4-14	1.8-10	3.5-5.5
	4-30	4.7-9.9	3.5-7.4	3.5-5.5
	30-36	5.2-9.9	3.9-7.4	3.5-5.5
	36-46	---	---	---
28D:				
Lily	0-4	2.4-14	1.8-10	3.5-5.5
	4-30	4.7-9.9	3.5-7.4	3.5-5.5
	30-36	5.2-9.9	3.9-7.4	3.5-5.5
	36-46	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
28E:				
Lily	0-4	2.4-14	1.8-10	3.5-5.5
	4-30	4.7-9.9	3.5-7.4	3.5-5.5
	30-36	5.2-9.9	3.9-7.4	3.5-5.5
	36-46	---	---	---
28F:				
Lily	0-4	2.4-14	1.8-10	3.5-5.5
	4-30	4.7-9.9	3.5-7.4	3.5-5.5
	30-36	5.2-9.9	3.9-7.4	3.5-5.5
	36-46	---	---	---
29D:				
Lily	0-4	2.4-14	1.8-10	3.5-5.5
	4-30	4.7-9.9	3.5-7.4	3.5-5.5
	30-36	5.2-9.9	3.9-7.4	3.5-5.5
	36-46	---	---	---
29E:				
Lily	0-4	2.4-14	1.8-10	3.5-5.5
	4-30	4.7-9.9	3.5-7.4	3.5-5.5
	30-36	5.2-9.9	3.9-7.4	3.5-5.5
	36-46	---	---	---
30C:				
Madsheep	0-5	4.8-13	3.6-9.8	4.5-5.5
	5-25	2.5-7.4	1.9-5.5	4.5-5.5
	25-35	---	---	---
30D:				
Madsheep	0-5	4.8-13	3.6-9.8	4.5-5.5
	5-25	2.5-7.4	1.9-5.5	4.5-5.5
	25-35	---	---	---
31E:				
Madsheep	0-5	4.8-13	3.6-9.8	4.5-5.5
	5-25	2.5-7.4	1.9-5.5	4.5-5.5
	25-35	---	---	---
32A:				
Melvin	0-10	5.3-13	4.0-9.5	5.6-7.8
	10-50	5.3-17	4.0-13	5.6-7.8
	50-62	2.9-16	2.2-12	5.6-7.8
33.				
Mine Tipples, Dumps, and Tailings				
34B:				
Murrill	0-10	5.8-16	4.3-12	4.5-6.0
	10-44	6.3-13	4.7-10	4.5-6.0
	44-61	9.4-20	7.1-15	4.5-6.0
34C:				
Murrill	0-10	5.8-16	4.3-12	4.5-6.0
	10-44	6.3-13	4.7-10	4.5-6.0
	44-61	9.4-20	7.1-15	4.5-6.0

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
34D:				
Murrill	0-10	5.8-16	4.3-12	4.5-6.0
	10-44	6.3-13	4.7-10	4.5-6.0
	44-61	9.4-20	7.1-15	4.5-6.0
35A:				
Newark	0-5	4.7-18	3.5-14	5.6-7.8
	5-30	6.3-13	4.7-10	5.6-7.8
	30-61	4.2-15	3.2-11	5.6-7.8
Lindside	0-9	9.8-18	7.3-14	5.1-7.8
	9-51	6.3-13	4.7-10	5.1-7.8
	51-61	5.2-13	3.9-10	5.6-7.8
36F:				
Newbern	0-5	5.8-14	4.3-10	5.6-7.3
	5-14	3.5-11	2.6-7.9	6.1-7.3
	14-24	---	---	---
Rock outcrop.				
37C:				
Oriskany	0-6	2.9-9.8	2.2-7.3	4.5-5.5
	6-14	3.5-13	2.6-10	4.5-5.5
	14-61	3.5-13	2.6-10	4.5-5.5
37D:				
Oriskany	0-6	2.9-9.8	2.2-7.3	4.5-5.5
	6-14	3.5-13	2.6-10	4.5-5.5
	14-61	3.5-13	2.6-10	4.5-5.5
38C:				
Oriskany	0-6	2.9-9.8	2.2-7.3	4.5-5.5
	6-14	3.5-13	2.6-10	4.5-5.5
	14-61	3.5-13	2.6-10	4.5-5.5
38D:				
Oriskany	0-6	2.9-9.8	2.2-7.3	4.5-5.5
	6-14	3.5-13	2.6-10	4.5-5.5
	14-61	3.5-13	2.6-10	4.5-5.5
38E:				
Oriskany	0-6	2.9-9.8	2.2-7.3	4.5-5.5
	6-14	3.5-13	2.6-10	4.5-5.5
	14-61	3.5-13	2.6-10	4.5-5.5
39D:				
Paddyknob	0-4	7.0-16	5.2-12	3.5-5.0
	4-26	6.2-16	4.7-12	3.5-5.0
	26-36	---	---	---
Rock outcrop.				
39E:				
Paddyknob	0-4	7.0-16	5.2-12	3.5-5.0
	4-26	6.2-16	4.7-12	3.5-5.0
	26-36	---	---	---
Rock outcrop.				

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
40D:				
Paddyknob------------	0-4	7.0-16	5.2-12	3.5-5.0
	4-26	6.2-16	4.7-12	3.5-5.0
	26-36	---	---	---
40E:				
Paddyknob------------	0-4	7.0-16	5.2-12	3.5-5.0
	4-26	6.2-16	4.7-12	3.5-5.0
	26-36	---	---	---
41A:				
Philo----------------	0-5	8.0-15	6.0-12	4.5-6.0
	5-44	3.5-7.4	2.6-5.6	4.5-6.0
	44-60	1.8-7.4	1.3-5.6	4.5-6.0
42B:				
Pisgah---------------	0-8	6.0-16	4.0-12	5.1-6.5
	8-50	14-22	11-17	5.1-6.5
	50-65	11-22	8.0-17	5.1-6.5
42C:				
Pisgah---------------	0-8	6.0-16	4.0-12	5.1-6.5
	8-50	14-22	11-17	5.1-6.5
	50-65	11-22	8.0-17	5.1-6.5
43B:				
Pisgah---------------	0-8	6.0-16	4.0-12	5.1-6.5
	8-50	14-22	11-17	5.1-6.5
	50-65	11-22	8.0-17	5.1-6.5
43C:				
Pisgah---------------	0-8	6.0-16	4.0-12	5.1-6.5
	8-50	14-22	11-17	5.1-6.5
	50-65	11-22	8.0-17	5.1-6.5
44.				
Pits, quarry				
45A:				
Pope-----------------	0-8	4.0-14	3.0-11	3.5-5.5
	8-27	1.8-7.4	1.3-5.6	3.5-5.5
	27-64	1.8-8.1	1.3-6.1	3.5-5.5
46C:				
Poplimento-----------	0-6	7.1-14	5.3-10	4.5-6.5
	6-45	12-22	9.2-17	4.5-6.5
	45-62	0.4-19	7.0-14	4.5-6.5
Westmoreland---------	0-7	7.5-20	5.6-10	4.5-6.0
	7-31	7.0-13	5.2-10	4.5-6.0
	31-47	6.3-13	4.7-10	5.1-6.0
	47-61	6.3-13	4.7-10	5.1-6.0
46D:				
Poplimento-----------	0-6	7.1-14	5.3-10	4.5-6.5
	6-45	12-22	9.2-17	4.5-6.5
	45-62	0.4-19	7.0-14	4.5-6.5

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
46D:				
Westmoreland---------	0-7	7.5-20	5.6-10	4.5-6.0
	7-31	7.0-13	5.2-10	4.5-6.0
	31-47	6.3-13	4.7-10	5.1-6.0
	47-61	6.3-13	4.7-10	5.1-6.0
47A:				
Purdy----------------	0-14	11-21	8.1-16	5.1-6.5
	14-47	12-19	9.2-14	5.1-6.5
	47-61	12-19	9.2-14	5.1-6.5
48B:				
Timberville----------	0-12	4.3-16	3.3-12	3.5-6.5
	12-25	5.7-14	4.3-11	3.5-6.5
	25-35	12-22	9.2-17	3.5-6.5
	35-61	12-22	9.2-17	3.5-6.5
49B:				
Tumbling-------------	0-9	2.1-7.2	1.6-5.4	4.5-5.5
	9-44	3.5-6.1	2.6-4.6	4.5-5.5
	44-62	3.5-6.6	2.6-5.5	4.5-5.5
49C:				
Tumbling-------------	0-9	2.1-7.2	1.6-5.4	4.5-5.5
	9-44	3.5-6.1	2.6-4.6	4.5-5.5
	44-62	3.5-6.6	2.6-5.5	4.5-5.5
50.				
Udorthents-Urban land				
51D:				
Wallen---------------	0-4	5.0-12	3.8-8.6	4.5-6.0
	4-24	2.8-8.1	2.1-6.1	4.5-6.0
	24-34	---	---	---
Rock outcrop.				
51E:				
Wallen---------------	0-4	5.0-12	3.8-8.6	4.5-6.0
	4-24	2.8-8.1	2.1-6.1	4.5-6.0
	24-34	---	---	---
Rock outcrop.				
52C:				
Wallen---------------	0-4	5.0-12	3.8-8.6	4.5-6.0
	4-24	2.8-8.1	2.1-6.1	4.5-6.0
	24-34	---	---	---
52D:				
Wallen---------------	0-4	5.0-12	3.8-8.6	4.5-6.0
	4-24	2.8-8.1	2.1-6.1	4.5-6.0
	24-34	---	---	---
52E:				
Wallen---------------	0-4	5.0-12	3.8-8.6	4.5-6.0
	4-24	2.8-8.1	2.1-6.1	4.5-6.0
	24-34	---	---	---

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
53E:				
Westmoreland---------	0-7	7.5-20	5.6-10	4.5-6.0
	7-31	7.0-13	5.2-10	4.5-6.0
	31-47	6.3-13	4.7-10	5.1-6.0
	47-61	6.3-13	4.7-10	5.1-6.0
Poplimento-----------	0-6	7.1-14	5.3-10	4.5-6.5
	6-45	12-22	9.2-17	4.5-6.5
	45-62	0.4-19	7.0-14	4.5-6.5
Berks----------------	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
53F:				
Westmoreland---------	0-7	7.5-20	5.6-10	4.5-6.0
	7-31	7.0-13	5.2-10	4.5-6.0
	31-47	6.3-13	4.7-10	5.1-6.0
	47-61	6.3-13	4.7-10	5.1-6.0
Poplimento-----------	0-6	7.1-14	5.3-10	4.5-6.5
	6-45	12-22	9.2-17	4.5-6.5
	45-62	0.4-19	7.0-14	4.5-6.5
Berks----------------	0-6	3.6-10	2.7-7.7	4.5-5.5
	6-24	2.5-9.1	1.9-9.2	3.5-5.5
	24-33	2.5-6.1	1.9-4.6	3.5-5.5
	33-43	---	---	---
54A:				
Wolfgap--------------	0-11	5.2-16	3.9-12	6.1-8.4
	11-58	6.8-14	5.1-11	6.1-8.4
	58-72	3.1-6.0	2.3-4.5	6.1-8.4
W.				
Water				

Table 18.—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	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
1A:										
Allegheny	B	Low	Jan-Dec	---	---	---	---	None	---	None
1B:										
Allegheny	B	Medium	Jan-Dec	---	---	---	---	None	---	None
2C:										
Alticrest	B	High	Jan-Dec	---	---	---	---	None	---	None
2D:										
Alticrest	B	Very high	Jan-Dec	---	---	---	---	None	---	None
2E:										
Alticrest	B	Very high	Jan-Dec	---	---	---	---	None	---	None
3C:										
Berks	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Weikert	D	Medium	Jan-Dec	---	---	---	---	None	---	None
3D:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
Weikert	D	High	Jan-Dec	---	---	---	---	None	---	None
3E:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
Weikert	D	High	Jan-Dec	---	---	---	---	None	---	None
4E:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
Gilpin	C	High	Jan-Dec	---	---	---	---	None	---	None
4F:										
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
Gilpin	C	High	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
5D:										
Bland	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
5E:										
Bland	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
6B:										
Bland	C	High	Jan-Dec	---	---	---	---	None	---	None
6C:										
Bland	C	High	Jan-Dec	---	---	---	---	None	---	None
6D:										
Bland	C	Very high	Jan-Dec	---	---	---	---	None	---	None
7C:										
Botetourt	C	Medium	Jan-May	1.5-2.5	>6.0	---	---	None	---	None
			June-Oct	---	---	---	---	None	---	None
			Nov-Dec	1.5-2.5	>6.0	---	---	None	---	None
8D:										
Brushy	B	Very high	Jan-Dec	---	---	---	---	None	---	None
8E:										
Brushy	B	Very high	Jan-Dec	---	---	---	---	None	---	None
9D:										
Calvin	C	High	Jan-Dec	---	---	---	---	None	---	None
9E:										
Calvin	C	High	Jan-Dec	---	---	---	---	None	---	None
10D:										
Calvin	C	High	Jan-Dec	---	---	---	---	None	---	None
10E:										
Calvin	C	High	Jan-Dec	---	---	---	---	None	---	None
11C:										
Carbo	C	High	Jan-Dec	---	---	---	---	None	---	None
11D:										
Carbo	C	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
11E:										
Carbo	C	Very high	Jan-Dec	---	---	---	---	None	---	None
11F:										
Carbo	C	Very high	Jan-Dec	---	---	---	---	None	---	None
12D:										
Carbo	C	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
12E:										
Carbo	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
13E:										
Carbo	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
14C:										
Cedarcreek	C	Low	Jan-Dec	---	---	---	---	None	---	None
Alticrest	B	High	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
14E:										
Cedarcreek	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Alticrest	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
15C:										
Cedarcreek	C	Low	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
15D:										
Cedarcreek	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
15E:										
Cedarcreek	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
16D:										
Chiswell	D	High	Jan-Dec	---	---	---	---	None	---	None
Litz	C	High	Jan-Dec	---	---	---	---	None	---	None
16E:										
Chiswell	D	High	Jan-Dec	---	---	---	---	None	---	None
Litz	C	High	Jan-Dec	---	---	---	---	None	---	None
16F:										
Chiswell	D	High	Jan-Dec	---	---	---	---	None	---	None
Litz	C	High	Jan-Dec	---	---	---	---	None	---	None
17B:										
Coursey	C	Medium	Jan-May	2.0-3.0	>6.0	---	---	None	---	None
			June-Oct	---	---	---	---	None	---	None
			Nov-Dec	2.0-3.0	>6.0	---	---	None	---	None
18B:										
Craigsville	B	Very low	Jan-May	---	---	---	---	None	Very brief	Frequent
			June-Oct	---	---	---	---	None	---	None
			Nov-Dec	---	---	---	---	None	Very brief	Frequent
19D:										
Drypond	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
19E:										
Drypond	D	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
20B:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None
20C:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
20D:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
20E:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
20F:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
21B:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None
21C:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None
21D:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
21E:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
21F:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
22B:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None
22C:										
Frederick	B	Medium	Jan-Dec	---	---	---	---	None	---	None
22D:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
22E:										
Frederick	B	High	Jan-Dec	---	---	---	---	None	---	None
23C:										
Gilpin	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Berks	C	Medium	Jan-Dec	---	---	---	---	None	---	None
23D:										
Gilpin	C	High	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
24C:										
Grimsley	B	Low	Jan-Dec	---	---	---	---	None	---	None
24D:										
Grimsley	B	Medium	Jan-Dec	---	---	---	---	None	---	None
24E:										
Grimsley	B	Medium	Jan-Dec	---	---	---	---	None	---	None
25D:										
Grimsley	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Cedarcreek	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
25E:										
Grimsley	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Cedarcreek	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
26B:										
Groseclose	C	High	Jan-Dec	---	---	---	---	None	---	None
26C:										
Groseclose	C	High	Jan-Dec	---	---	---	---	None	---	None
26D:										
Groseclose	C	Very high	Jan-Dec	---	---	---	---	None	---	None
26E:										
Groseclose	C	Very high	Jan-Dec	---	---	---	---	None	---	None
27B:										
Guernsey	C	Medium	Jan-April	1.5-3.0	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
27C:										
Guernsey	C	Medium	Jan-April	1.5-3.0	>6.0	---	---	None	---	None
			May-Dec	---	---	---	---	None	---	None
28C:										
Lily	B	High	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
28D:										
Lily	B	Very high	Jan-Dec	---	---	---	---	None	---	None
28E:										
Lily	B	Very high	Jan-Dec	---	---	---	---	None	---	None
28F:										
Lily	B	Very high	Jan-Dec	---	---	---	---	None	---	None
29D:										
Lily	B	Very high	Jan-Dec	---	---	---	---	None	---	None
29E:										
Lily	B	Very high	Jan-Dec	---	---	---	---	None	---	None
30C:										
Madsheep	C	Medium	Jan-Dec	---	---	---	---	None	---	None
30D:										
Madsheep	C	High	Jan-Dec	---	---	---	---	None	---	None
31E:										
Madsheep	C	High	Jan-Dec	---	---	---	---	None	---	None
32A:										
Melvin	D	Negligible	Jan-May	0.0-1.0	>6.0	0.0-1.0	Brief	Frequent	Brief	Frequent
			June	0.0-1.0	>6.0	0.0-1.0	Brief	Frequent	---	None
			July-Oct	1.0-6.6	>6.0	0.0-0.5	Brief	Frequent	---	None
			November	0.0-1.0	>6.0	0.0-1.0	Brief	Frequent	---	None
			December	0.0-1.0	>6.0	0.0-1.0	Brief	Frequent	Brief	Frequent
33:										
Mine Tipples.										
Mine Dumps	---	Medium	Jan-Dec	---	---	---	---	None	---	None
Mine Tailings.										
34B:										
Murrill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
34C:										
Murrill	B	Medium	Jan-Dec	---	---	---	---	None	---	None
34D:										
Murrill	B	High	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
35A:										
Newark	C	Very high	Jan-April	0.5-1.5	>6.0	---	---	None	Brief	Occasional
			May	0.5-1.5	>6.0	---	---	None	---	None
			June-Nov	---	---	---	---	None	---	None
			December	0.5-1.5	>6.0	---	---	None	Brief	Occasional
Lindside	C	Low	Jan-April	1.5-3.0	>6.0	---	---	None	Brief	Occasional
			May-Nov	---	---	---	---	None	---	None
			December	1.5-3.0	>6.0	---	---	None	Brief	Occasional
36F:										
Newbern	C	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
37C:										
Oriskany	B	Low	Jan-Dec	---	---	---	---	None	---	None
37D:										
Oriskany	B	Medium	Jan-Dec	---	---	---	---	None	---	None
38C:										
Oriskany	B	Low	Jan-Dec	---	---	---	---	None	---	None
38D:										
Oriskany	B	Medium	Jan-Dec	---	---	---	---	None	---	None
38E:										
Oriskany	B	Medium	Jan-Dec	---	---	---	---	None	---	None
39D:										
Paddyknob	A	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
39E:										
Paddyknob	A	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
40D:										
Paddyknob	A	Very high	Jan-Dec	---	---	---	---	None	---	None
40E:										
Paddyknob	A	Very high	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
41A:										
Philo	B	Low	Jan-May	1.5-3.0	>6.0	---	---	None	Very brief	Frequent
			June-Nov	---	---	---	---	None	---	None
			December	1.5-3.0	>6.0	---	---	None	Very brief	Frequent
42B:										
Pisgah	C	Medium	Jan-Dec	---	---	---	---	None	---	None
42C:										
Pisgah	C	Medium	Jan-Dec	---	---	---	---	None	---	None
43B:										
Pisgah	C	Medium	Jan-Dec	---	---	---	---	None	---	None
43C:										
Pisgah	C	Medium	Jan-Dec	---	---	---	---	None	---	None
44.										
Pits, quarry										
45A:										
Pope	B	Very low	Jan-Dec	---	---	---	---	None	Very brief	Rare
46C:										
Poplimento	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Westmoreland	B	Medium	Jan-Dec	---	---	---	---	None	---	None
46D:										
Poplimento	C	High	Jan-Dec	---	---	---	---	None	---	None
Westmoreland	B	High	Jan-Dec	---	---	---	---	None	---	None
47A:										
Purdy	D	Negligible	Jan-June	0.0	>6.0	0.0-1.0	Brief	Rare	---	None
			July-Oct	0.0-1.0	>6.0	0.0-0.5	Brief	Rare	---	None
			Nov-Dec	0.0	>6.0	0.0-1.0	Brief	Rare	---	None
48B:										
Timberville	B	Low	Jan-Dec	---	---	---	---	None	Very brief	Frequent
49B:										
Tumbling	B	Medium	Jan-Dec	---	---	---	---	None	---	None
49C:										
Tumbling	B	Medium	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
50:										
Udorthents	---	High	Jan-Dec	---	---	---	---	None	---	None
Urban land	---	Very high	Jan-Dec	---	---	---	---	None	---	None
51D:										
Wallen	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
51E:										
Wallen	B	Very high	Jan-Dec	---	---	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
52C:										
Wallen	B	High	Jan-Dec	---	---	---	---	None	---	None
52D:										
Wallen	B	Very high	Jan-Dec	---	---	---	---	None	---	None
52E:										
Wallen	B	Very high	Jan-Dec	---	---	---	---	None	---	None
53E:										
Westmoreland	B	High	Jan-Dec	---	---	---	---	None	---	None
Poplimento	C	High	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
53F:										
Westmoreland	B	High	Jan-Dec	---	---	---	---	None	---	None
Poplimento	C	High	Jan-Dec	---	---	---	---	None	---	None
Berks	C	High	Jan-Dec	---	---	---	---	None	---	None
54A:										
Wolfgap	B	Low	Jan-April	---	---	---	---	None	Brief	Occasional
			May-Nov	---	---	---	---	None	---	None
			December	---	---	---	---	None	Brief	Occasional
W.										
Water										

Table 19.—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: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In				
1A:						
Allegheny	---	---	---	Moderate	Low	High
1B:						
Allegheny	---	---	---	Moderate	Low	High
2C:						
Alticrest	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
2D:						
Alticrest	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
2E:						
Alticrest	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
3C:						
Berks	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
Weikert	Bedrock (lithic)	14-20	Strongly cemented	Moderate	Moderate	Moderate
3D:						
Berks	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
Weikert	Bedrock (lithic)	14-20	Strongly cemented	Moderate	Moderate	Moderate
3E:						
Berks	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
Weikert	Bedrock (lithic)	14-20	Strongly cemented	Moderate	Moderate	Moderate
4E:						
Berks	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
Gilpin	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Low	High
4F:						
Berks	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
Gilpin	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Low	High
5D:						
Bland	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
5E:						
Bland	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
6B:						
Bland	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate
6C:						
Bland	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
6D:						
Bland	Bedrock (lithic)	20-40	Indurated	Moderate	High	Moderate
7C:						
Botetourt	---	---	---	High	Moderate	High
8D:						
Brushy	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
8E:						
Brushy	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
9D:						
Calvin	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	Moderate
9E:						
Calvin	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	Moderate
10D:						
Calvin	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	Moderate
10E:						
Calvin	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Low	Moderate
11C:						
Carbo	Bedrock (lithic)	20-40	Indurated	Moderate	High	Low
11D:						
Carbo	Bedrock (lithic)	20-40	Indurated	Moderate	High	Low
11E:						
Carbo	Bedrock (lithic)	20-40	Indurated	Moderate	High	Low
11F:						
Carbo	Bedrock (lithic)	20-40	Indurated	Moderate	High	Low
12D:						
Carbo	Bedrock (lithic)	20-40	Indurated	Moderate	High	Low
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
12E:						
Carbo	Bedrock (lithic)	20-40	Indurated	Moderate	High	Low
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
13E:						
Carbo	Bedrock (lithic)	20-40	Indurated	Moderate	High	Low
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
14C:						
Cedarcreek	---	---	---	Moderate	Moderate	High
Alticrest	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
14E:						
Cedarcreek	---	---	---	Moderate	Moderate	High
Alticrest	Bedrock (lithic)	20-40	Indurated	Moderate	Low	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
15C:						
Cedarcreek	---	---	---	Moderate	Moderate	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
15D:						
Cedarcreek	---	---	---	Moderate	Moderate	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
15E:						
Cedarcreek	---	---	---	Moderate	Moderate	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
16D:						
Chiswell	Bedrock (paralithic)	10-20	Moderately cemented	Moderate	Moderate	Moderate
	Bedrock (lithic)	10-30	Very strongly cemented			
Litz	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Moderate	High
16E:						
Chiswell	Bedrock (paralithic)	10-20	Moderately cemented	Moderate	Moderate	Moderate
	Bedrock (lithic)	10-30	Very strongly cemented			
Litz	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Moderate	High
16F:						
Chiswell	Bedrock (paralithic)	10-20	Moderately cemented	Moderate	Moderate	Moderate
	Bedrock (lithic)	10-30	Very strongly cemented			
Litz	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Moderate	High
17B:						
Coursey	---	---	---	High	Moderate	High
18B:						
Craigsville	---	---	---	Moderate	Low	Moderate
19D:						
Drypond	Bedrock (lithic)	10-20	Indurated	Low	Low	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
19E:						
Drypond	Bedrock (lithic)	10-20	Indurated	Low	Low	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
20B:						
Frederick----------	---	---	---	Moderate	Moderate	High
20C:						
Frederick----------	---	---	---	Moderate	Moderate	High
20D:						
Frederick----------	---	---	---	Moderate	Moderate	High
20E:						
Frederick----------	---	---	---	Moderate	Moderate	High
20F:						
Frederick----------	---	---	---	Moderate	Moderate	High
21B:						
Frederick----------	---	---	---	Moderate	Moderate	High
21C:						
Frederick----------	---	---	---	Moderate	Moderate	High
21D:						
Frederick----------	---	---	---	Moderate	Moderate	High
21E:						
Frederick----------	---	---	---	Moderate	Moderate	High
21F:						
Frederick----------	---	---	---	Moderate	Moderate	High
22B:						
Frederick----------	---	---	---	Moderate	Moderate	High
22C:						
Frederick----------	---	---	---	Moderate	Moderate	High
22D:						
Frederick----------	---	---	---	Moderate	Moderate	High
22E:						
Frederick----------	---	---	---	Moderate	Moderate	High
23C:						
Gilpin-------------	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Low	High
Berks--------------	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
23D:						
Gilpin-------------	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Low	High
Berks--------------	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
24C:						
Grimsley-----------	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
24D:						
Grimsley-----------	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
24E:						
Grimsley-----------	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
25D:						
Grimsley	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
Cedarcreek	---	---	---	Moderate	Moderate	High
Berks	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
25E:						
Grimsley	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
Cedarcreek	---	---	---	Moderate	Moderate	High
Berks	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
26B:						
Groseclose	---	---	---	Moderate	High	High
26C:						
Groseclose	---	---	---	Moderate	High	High
26D:						
Groseclose	---	---	---	Moderate	High	High
26E:						
Groseclose	---	---	---	Moderate	High	High
27B:						
Guernsey	Bedrock (paralithic)	50-80	Strongly cemented	High	High	Moderate
27C:						
Guernsey	Bedrock (paralithic)	50-80	Strongly cemented	High	High	Moderate
28C:						
Lily	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Moderate	High
28D:						
Lily	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Moderate	High
28E:						
Lily	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Moderate	High
28F:						
Lily	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Moderate	High
29D:						
Lily	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Moderate	High
29E:						
Lily	Bedrock (lithic)	20-40	Very strongly cemented	Moderate	Moderate	High
30C:						
Madsheep	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Low	Moderate

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
30D:						
Madsheep	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Low	Moderate
31E:						
Madsheep	Bedrock (lithic)	20-40	Strongly cemented	Moderate	Low	Moderate
32A:						
Melvin	---	---	---	High	High	Low
33.						
Mine Tipples, Dumps, and Tailings						
34B:						
Murrill	---	---	---	Moderate	Moderate	High
34C:						
Murrill	---	---	---	Moderate	Moderate	High
34D:						
Murrill	---	---	---	Moderate	Moderate	High
35A:						
Newark	---	---	---	High	High	Low
Lindside	---	---	---	High	Moderate	Low
36F:						
Newbern	Bedrock (lithic)	10-20	Indurated	Moderate	Low	Low
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
37C:						
Oriskany	---	---	---	Moderate	Moderate	High
37D:						
Oriskany	---	---	---	Moderate	Moderate	High
38C:						
Oriskany	---	---	---	Moderate	Moderate	High
38D:						
Oriskany	---	---	---	Moderate	Moderate	High
38E:						
Oriskany	---	---	---	Moderate	Moderate	High
39D:						
Paddyknob	Bedrock (lithic)	20-40	Indurated	Low	Low	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
39E:						
Paddyknob	Bedrock (lithic)	20-40	Indurated	Low	Low	High
Rock outcrop	Bedrock (lithic)	0-0	Indurated	None	---	---
40D:						
Paddyknob	Bedrock (lithic)	20-40	Indurated	Low	Low	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
40E:						
Paddyknob----------	Bedrock (lithic)	20-40	Indurated	Low	Low	High
41A:						
Philo--------------	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
42B:						
Pisgah-------------	---	---	---	High	High	Moderate
42C:						
Pisgah-------------	---	---	---	High	High	Moderate
43B:						
Pisgah-------------	---	---	---	High	High	Moderate
43C:						
Pisgah-------------	---	---	---	High	High	Moderate
44:						
Pits, quarry-------	Bedrock (lithic)	0-0	---	---	---	---
45A:						
Pope---------------	---	---	---	Moderate	Low	High
46C:						
Poplimento---------	---	---	---	Moderate	High	Moderate
Westmoreland-------	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
46D:						
Poplimento---------	---	---	---	Moderate	High	Moderate
Westmoreland-------	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
47A:						
Purdy--------------	---	---	---	High	High	High
48B:						
Timberville--------	---	---	---	Moderate	Low	High
49B:						
Tumbling-----------	---	---	---	Moderate	Moderate	Moderate
49C:						
Tumbling-----------	---	---	---	Moderate	Moderate	Moderate
50.						
Udorthents-Urban						
51D:						
Wallen-------------	Bedrock (lithic)	20-40	Indurated	Low	Low	High
Rock outcrop-------	Bedrock (lithic)	0-0	Indurated	None	---	---
51E:						
Wallen-------------	Bedrock (lithic)	20-40	Indurated	Low	Low	High
Rock outcrop-------	Bedrock (lithic)	0-0	Indurated	None	---	---

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
52C:						
Wallen-------------	Bedrock (lithic)	20-40	Indurated	Low	Low	High
52D:						
Wallen-------------	Bedrock (lithic)	20-40	Indurated	Low	Low	High
52E:						
Wallen-------------	Bedrock (lithic)	20-40	Indurated	Low	Low	High
53E:						
Westmoreland-------	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
Poplimento---------	---	---	---	Moderate	High	Moderate
Berks--------------	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
53F:						
Westmoreland-------	Bedrock (lithic)	40-80	Strongly cemented	Moderate	Low	High
Poplimento---------	---	---	---	Moderate	High	Moderate
Berks--------------	Bedrock (lithic)	20-40	Strongly cemented	Low	Low	High
54A:						
Wolfgap------------	---	---	---	Moderate	Low	Moderate
W.						
Water						

Table 20.—Taxonomic 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
Allegheny	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Alticrest	Coarse-loamy, siliceous, semiactive, mesic Typic Dystrudepts
Berks	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Bland	Fine, mixed, semiactive, mesic Typic Hapludalfs
Botetourt	Fine-loamy, siliceous, semiactive, mesic Ultic Hapludalfs
Brushy	Loamy-skeletal, siliceous, semiactive, mesic Typic Hapludults
Calvin	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Carbo	Very fine, mixed, active, mesic Typic Hapludalfs
Cedarcreek	Loamy-skeletal, mixed, active, acid, mesic Typic Udorthents
Chiswell	Loamy-skeletal, mixed, active, mesic, shallow Typic Dystrudepts
Coursey	Fine-loamy, siliceous, semiactive, mesic Aquic Hapludults
Craigsville	Loamy-skeletal, mixed, superactive, mesic Fluventic Dystrudepts
Drypond	Loamy-skeletal, siliceous, active, mesic Lithic Dystrudepts
Frederick	Fine, mixed, semiactive, mesic Typic Paleudults
Gilpin	Fine-loamy, mixed, active, mesic Typic Hapludults
Grimsley	Loamy-skeletal, siliceous, semiactive, mesic Typic Hapludults
Groseclose	Fine, mixed, semiactive, mesic Typic Hapludults
Guernsey	Fine, mixed, superactive, mesic Aquic Hapludalfs
Lily	Fine-loamy, siliceous, semiactive, mesic Typic Hapludults
Lindside	Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts
Litz	Loamy-skeletal, mixed, active, mesic Ruptic-Ultic Dystrudepts
Madsheep	Loamy-skeletal, siliceous, active, frigid Typic Dystrudepts
Melvin	Fine-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
*Murrill	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Newark	Fine-silty, mixed, active, nonacid, mesic Fluventic Endoaquepts
Newbern	Loamy, mixed, active, mesic Lithic Eutrudepts
Oriskany	Loamy-skeletal, siliceous, semiactive, mesic Typic Hapludults
Paddyknob	Loamy-skeletal, siliceous, superactive, frigid Typic Dystrudepts
Philo	Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts
Pisgah	Fine, mixed, semiactive, mesic Ultic Hapludalfs
Pope	Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts
Poplimento	Fine, mixed, subactive, mesic Ultic Hapludalfs
Purdy	Fine, mixed, active, mesic Typic Endoaquults
Timberville	Fine, mixed, active, mesic Typic Hapludults
Tumbling	Fine, kaolinitic, mesic Typic Paleudults
Udorthents	Udorthents
Wallen	Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts
Weikert	Loamy-skeletal, mixed, active, mesic Lithic Dystrudepts
Westmoreland	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Wolfgap	Fine-loamy, siliceous, active, mesic Fluventic Hapludolls

Table 21.—Relationship of Geology to Soils

("Geologic epoch" is the geologic age of the unconsolidated deposit or the bedrock formation. Under "Surficial deposits or geology," the abbreviations for the dominant lithology are: ls=limestone, sh=shale, ss=sandstone, and ch=chert)

Geologic system	Geologic epoch	Surficial deposits or geology	Soil series
Quaternary	Holocene	Mine spoil	Cedarcreek
		Alluvium ss, sh	Craigsville Philo Pope
		ls, sh	Newark Melvin Lindside
		ls	Timberville
		ss, sh, ls	Wolfgap
	Late Pleistocene	Alluvium ss, sh, ls	Allegheny Botetourt Coursey Purdy
		Colluvium ss, sh	Grimsley Oriskany Murrill
		sh, ls	Guernsey
	Early Pleistocene	Colluvium ss	Tumbling
Pennsylvanian		Kanawha Formation ss, sh	Lily Gilpin Berks
		New River Formation ss, sh	Alticrest Berks Gilpin Lily
		Pocahontas Formation sh, ss	Berks Gilpin Lily Wallen
Mississippian		Blueston Formation sh, ss	Berks Lily Calvin
		Hinton Formation ss, sh	Calvin Lily Wallen
		Greenbrier Limestone ls	Carbo Frederick Newbern
		Price Formation sh, ss	Berks Weikert Lily Wallen

Table 21.—Relationship of Geology to Soils—Continued

Geologic system	Geologic epoch	Surficial deposits or geology	Soil series
Devonian		Chemung Formation ss, sh	Lily Wallen Drypond
		Brallier Shale sh	Berks Weikert
		Millboro Shale sh	Berks Weikert
		Onondaga Formation ls, ch	Frederick Brushy
Silurian		Clinch Sandstone ss	Wallen Lily Paddyknob
Ordovician		Juniata Formation sh, ss	Calvin Madsheep
		Martinsburg Formation sh, ls	Westmoreland Poplimento Berks Carbo
		Moccasin Formation ls, sh	Bland
		Holston Limestone ls	Pigsah Carbo
		Lenoir Limestone ls	Newbern
		Lowville Limestone ls	Carbo
		Beekmantown Formation ls	Frederick Carbo
Cambrian		Copper Ridge Formation ls	Frederick Carbo
		Nolichucky Formation sh	Chiswell Litz
		Honaker Formation ls	Frederick Carbo
		Rome Formation sh, ls	Chiswell Litz Groseclose Carbo

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