United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
North Carolina Department of Environment and Natural Resources, North Carolina Agricultural Research Service, North Carolina Cooperative Extension Service, Surry Soil and Water Conservation District, and Surry County Board of Commissioners

Soil Survey of Surry County, North Carolina

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

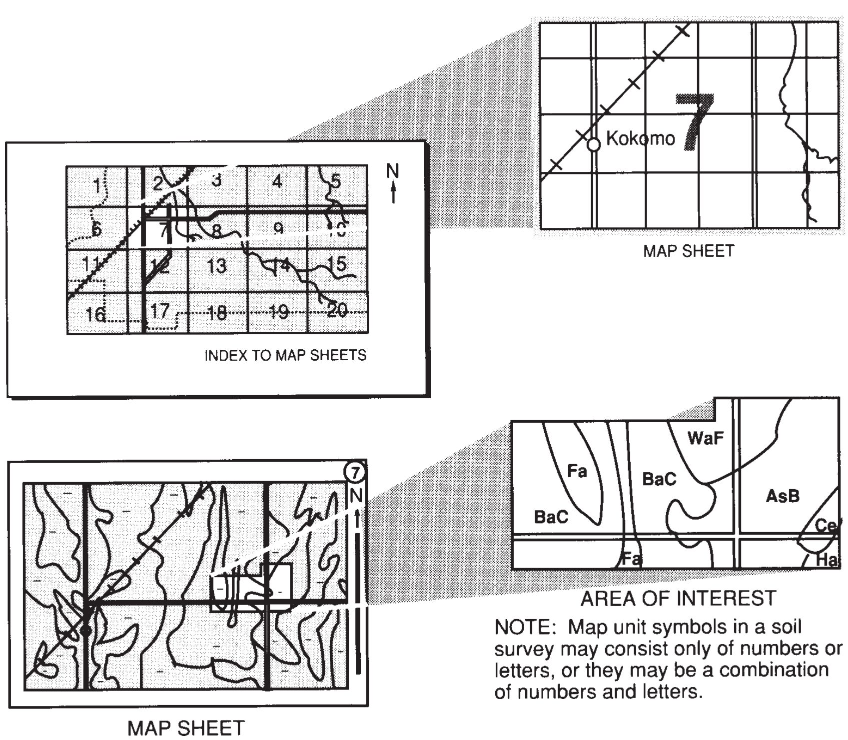
Detailed Soil Maps

The detailed soil maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

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

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



NOTE: Map unit symbols in a soil survey may consist only of numbers or letters, or they may be a combination of numbers and letters.

National Cooperative Soil Survey

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. This survey was made cooperatively by the Natural Resources Conservation Service and the North Carolina Department of Environment and Natural Resources, the North Carolina Agricultural Research Service, the North Carolina Cooperative Extension Service, the Surry Soil and Water Conservation District, and the Surry County Board of Commissioners. The survey is part of the technical assistance furnished to the Surry Soil and Water Conservation District. The Surry County Board of Commissioners provided financial assistance for the survey.

Major fieldwork for this soil survey was completed in 1997. Soil names and descriptions were approved in 1999. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1999. The most current official data are available on the Internet at http://websoilsurvey.nrcs.usda.gov.

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.

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Cover: Pilot Mountain, a metaquartzite resistant monadnock, in the fall. The soils in the foreground formed mainly in colluvium and are in an area of Braddock-Pilot Mountain complex, 8 to 15 percent slopes, rubbly.

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 2007

Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys 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 surveys 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 surveys 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.

Mary K. Combs
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Surry County, North Carolina

By Roger J. Leab, Natural Resources Conservation Service

Fieldwork by Roger J. Leab, David C. Clapp, and Roy L. Mathis. Jr., Natural Resources Conservation Service; Michael D. Harman, North Carolina Department of Environment and Natural Resources; and Edward O. Brewer, private contractor, Soil Conservation Service, retired

United States Department of Agriculture, Natural Resources Conservation Service,
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Surry County is in the northwestern Piedmont of North Carolina (fig. 1). It has a total of 345,261 acres, or 539 square miles. It is bounded on the north by Grayson, Carroll, and Patrick Counties of Virginia, on the east by Stokes and Forsyth Counties of North Carolina, on the south by Yadkin County, and on the west by Alleghany and Wilkes Counties.

Surry County is mostly rural and relies heavily on agriculture. In 1998, according to the U.S. Census estimate, the population of Surry County was about 67,052. Dobson, the county seat, is located near the center of the county. U.S. Highway 601 passes along the eastern side of Dobson, and Interstate Highway 77 passes just 3 miles to the west. Mount Airy, the largest town in the county, is located along U.S. Highways 52 and 601 in the northern part of the county. Other towns in the county are Westfield and Pilot Mountain in the eastern part of the county and Low Gap, Mountain Park, and Elkin in the western part.

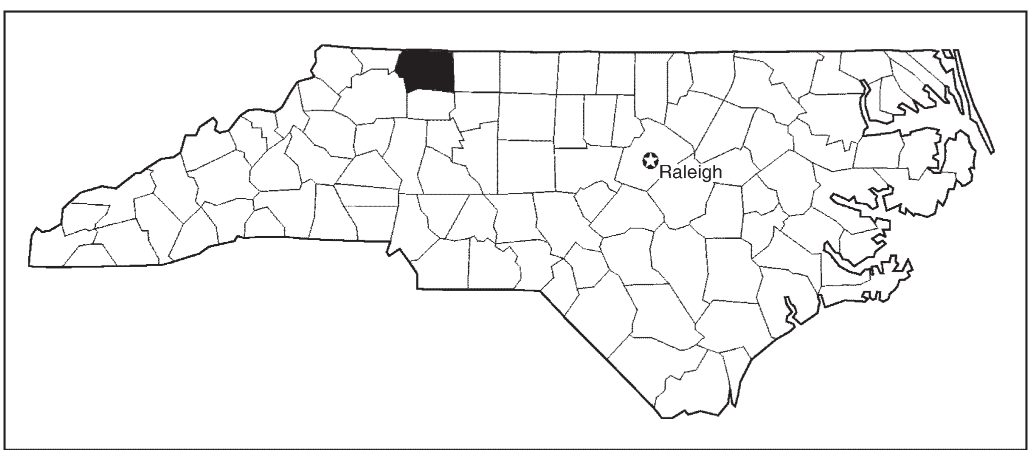

Figure 1.—Location of Surry County in North Carolina.

This soil survey updates the survey of Surry County published in 1937 (Davis and Goldston, 1937). It provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the County

This section provides general information about Surry County. It describes the settlement and economic development; physiography, relief, and drainage; water supply; and climate.

Settlement and Economic Development

The first Europeans in Surry County were hunters who arrived in the early 1700s. By 1740, others had started to settle in the county. The early settlers were mostly second generation Americans of English and Scotch-Irish descent. Many came down from Virginia to find land suitable for farming (Hollingsworth, 1935; Jackson, 1983). One of the first areas settled was called The Hollows. It is near the present town of Mount Airy. In about 1753, there was a migration of Germans into the area.

Farming was the main source of income for the early settlers. They grew wheat, corn, oats, and rye and ground them at grist mills. Apples and tobacco were also grown. By the late 1700s, forest products had become important to the Surry County economy. By the 1830s and 1840s, cotton was an important crop and the county had cotton mills. Today, tobacco is the main cash crop for farmers in Surry County (Hollingsworth, 1935; Jackson, 1983).

Physiography, Relief, and Drainage

The majority of Surry County lies in the Piedmont physiographic region, but the northwestern edge of the county lies along the Blue Ridge escarpment (fig. 2) where numerous small mountains and high ridges extend into the northern and western parts of the county. In the northeastern part of the county, several small mountains and high ridges, such as Slate Mountain and Chestnut Ridge, extend from Virginia into the county. Turner Mountain and Stotts Knob are isolated extensions that occur in the central part of the county. Pilot Mountain, a well-known landmark, lies in the southeastern part of the county. It is a monadnock whose pinnacle is about 1,400 feet above the surrounding landscape (USDI, Pinnacle topographic quadrangle, 1927).

Fishers Peak, along the Virginia state line, is the highest point in the county and has an elevation of 3,609 feet (USDI, Lambsburg topographic quadrangle, 1927). Fishers Peak lies atop the Blue Ridge escarpment, just north of the Low Gap community. The lowest point in the county, along the Forsyth County line where the Yadkin River leaves the county, has an elevation of about 740 feet (USDI, Pinnacle topographic quadrangle, 1927).

The Yadkin River forms the southern boundary of Surry County and separates the county from Yadkin County. The Mitchell River, one of North Carolina's most pristine streams, lies along the Blue Ridge escarpment in the western part of the county along the Alleghany County line. It flows southeast into the Yadkin River just east of the town of Elkin. The Fisher River lies along the Blue Ridge escarpment in the northwestern part of the county along the Virginia state line. It flows southeast and is joined by the Little Fisher River just north of the town of Dobson. From there it flows south into the Yadkin River. The Ararat River flows south out of Virginia and along the eastern edge of the town of Mount Airy. It continues southeast and flows into the Yadkin River just east of the community of Siloam.

There are many large and small creeks in the county. Most coalesce until they eventually flow into the Yadkin River. There are a few creeks in the northeastern part of

Figure 2.—Typcal landscape along the Blue Ridge escarpment in Surry County, North Carolina.

the county that flow to the east and into the Dan River, which is in adjoining Stokes County.

Water Supply

The water supply in most of the county is adequate and generally is supplied by individual wells. Some of the larger towns in the county get their water from surrounding rivers and creeks. The town of Mount Airy pumps water from Lovills Creek and Stewarts Creek. Dobson pumps water from the Fisher River, Pilot Mountain pumps water from Toms Creek, and Elkin pumps water from Elkin Creek.

Climate

Prepared by the Natural Resources Conservation Service, National Water and Climate Center, Portland Oregon.

Climate data are provided in the tables “Temperature and Precipitation,” “Freeze Dates in Spring and Fall,” and “Growing Season.” The data were recorded at the climate station in Mount Airy, North Carolina, in the period 1961 to 1990. Thunderstorm days, relative humidity, percent sunshine, and wind information are estimated from the First Order station in Greensboro, North Carolina.

In winter, the average temperature is 38.3 degrees F and the average daily minimum temperature is 27.0 degrees. The lowest temperature on record, which occurred at Mt. Airy on January 21, 1985, is -10 degrees. In summer, the average temperature is 74.2 degrees and the average daily maximum temperature is 86.3 degrees. The highest recorded temperature, which occurred on July 14, 1954, is 105 degrees.

Growing degree days are shown in the table “Temperature and Precipitation.” 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 (50 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 total annual precipitation is about 45.64 inches. Of this, 28.13 inches, or 62 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall was 9.45 inches at Mt. Airy on June 13, 1947. Thunderstorms occur on about 45 days each year, and most occur between May and August.

The average seasonal snowfall is about 11.0 inches. The greatest snow depth at any one time was 18 inches, recorded on December 17, 1930. On the average, 6 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 55 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 64 percent of the time possible in summer and 55 percent in winter. The prevailing wind is from the southwest in all months except September and October, when it is from the northeast. Average windspeed is highest, around 9 miles per hour, from February to April.

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, the extent of the soils in the survey areas, and the new placement of the mesic-thermic soil temperature line.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

1. Fairview

Gently sloping to steep, well drained soils that have a loamy surface layer and a clayey subsoil; on uplands (fig. 3)

Setting

Location in the survey area: Mostly in the southern half of the county and scattered areas across the northern half of the county
Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Slope: 2 to 45 percent

Composition

Percent of the survey area: 49
Fairview soils: 85 percent
Minor components: 15 percent

Soil Characteristics

Fairview
Surface layer: Brown and strong brown sandy clay loam
Subsoil: Upper part—red clay; lower part—red clay loam
Underlying material: Red loam saprolite
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 45 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic or igneous rock

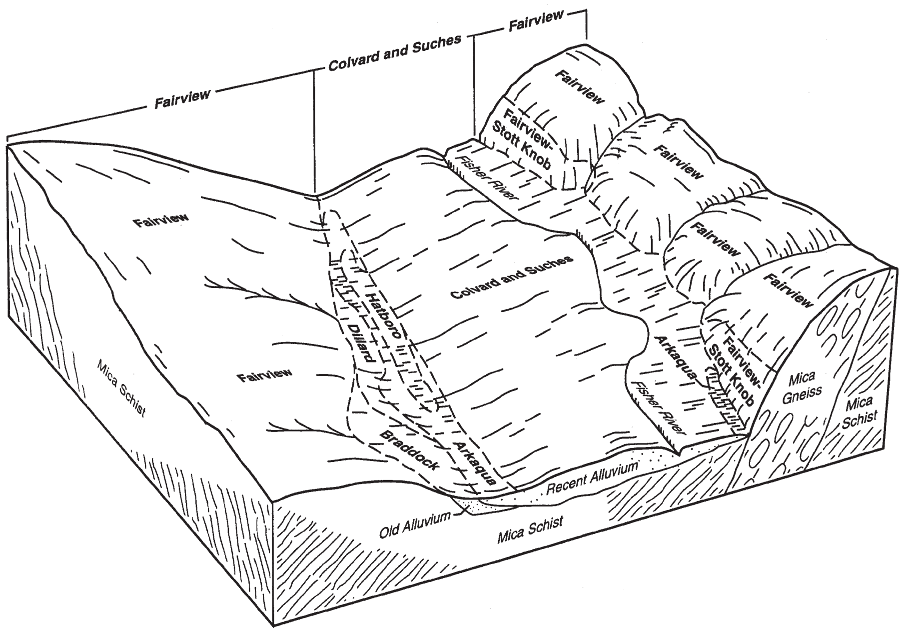

Figure 3.—Relationship of soils, landscape, and geology in the Fairview general soil map unit and the Colvard-Suches general soil map unit.

Minor components
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- The well drained Colvard soils on flood plains
- The well drained and moderately well drained Suches soils on flood plains
- Rhodhiss soils, which have a loamy subsoil
- Stott Knob soils, which have a loamy subsoil, have soft bedrock at a depth of 20 to 40 inches, and generally are in the steeper areas
- The somewhat poorly drained Arkaqua soils on flood plains
- Braddock soils, which have a clayey subsoil and are on footslopes, toeslopes, and stream terraces
- The moderately well drained Dillard soils, which generally have a loamy subsoil and are on footslopes, toeslopes, and stream terraces
- The poorly drained Hatboro soils on flood plains
- Toast soils, which have a brown, clayey subsoil

Use and Management

Major uses: Cropland, woodland, pasture, hayland, and urban land

Agriculture
Management concerns: Erodibility, soil fertility, and equipment use

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants

Urban development
Management concerns: Slow water movement, low strength, high clay content, frost action, and slope

Recreational development
Management concerns: Small stones and slope

2. Woolwine-Fairview

Gently sloping to steep, well drained soils that have a loamy surface layer and a clayey subsoil; on uplands (fig. 4)

Setting

Location in the survey area: Scattered areas throughout the county
Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Slope: 2 to 45 percent

Composition

Percent of the survey area: 30
Woolwine soils: 43 percent
Fairview soils: 36 percent
Minor components: 21 percent

Soil Characteristics

Woolwine
Surface layer: Strong brown gravelly loam
Subsoil: Upper part—yellowish red clay loam; next part—red clay; lower part—red gravelly clay
Bedrock layer: Soft mica schist
Depth class: Moderately deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 45 percent

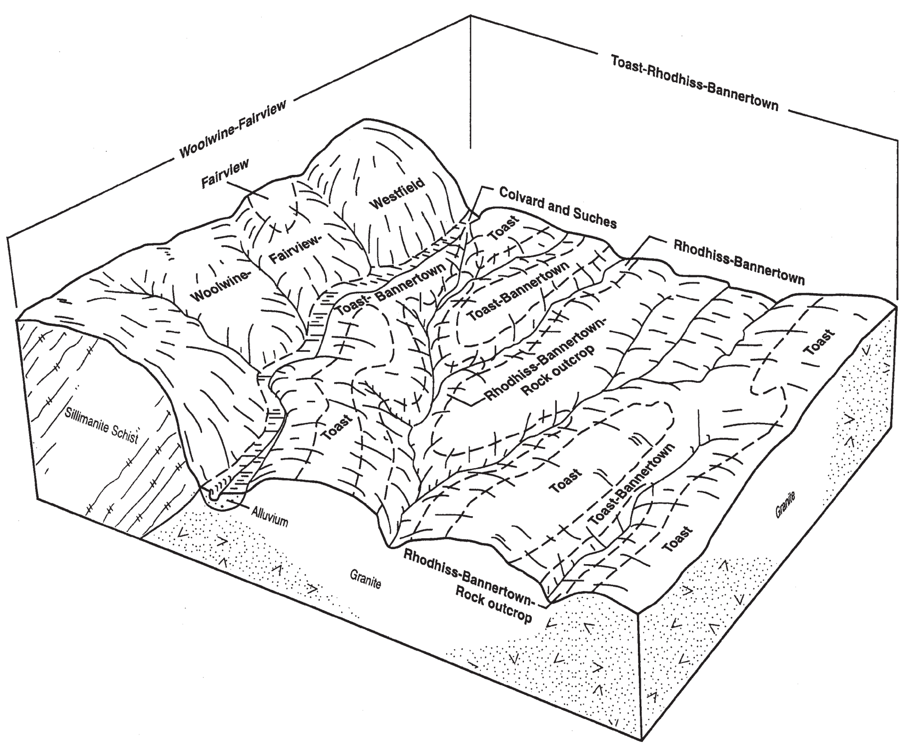

Figure 4.—Relationship of soils, landscape, and geology in the Woolwine-Fairview general soil map unit and the Toast-Rhodhiss-Bannertown general soil map unit.

Parent material: Residuum weathered from felsic and intermediate metamorphic rock, commonly mica schist

Fairview
Surface layer: Dark brown gravelly sandy clay loam
Subsurface layer: Strong brown sandy clay loam
Subsoil: Upper part—red clay; lower part—red clay loam
Underlying material: Red loam saprolite
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 45 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic rock, commonly mica schist

Minor components
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- The well drained Colvard soils on flood plains
- The well drained and moderately well drained Suches soils on flood plains
- Rhodhiss soils, which have a loamy subsoil
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- The somewhat poorly drained Arkaqua soils on flood plains
- Braddock soils, which have a clayey subsoil and are on footslopes, toeslopes, and stream terraces
- The moderately well drained Dillard soils, which generally have a loamy subsoil and are on footslopes, toeslopes, and stream terraces
- Devotion soils, which have a loamy subsoil, have soft bedrock at a depth of 20 to 40 inches, and generally are in the steeper areas
- Toast soils, which have a brown clayey subsoil
- The poorly drained Hatboro soils on flood plains

Use and Management

Major uses: Woodland, cropland, pasture, hayland, and urban land

Agriculture
Management concerns: Erodibility, soil fertility, stoniness, and equipment use

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants; Woolwine—windthrow hazard

Urban development
Management concerns: Slow water movement, low strength, high clay content, frost action, and slope; Woolwine—depth to bedrock

Recreational development
Management concerns: Small stones and slope

3. Fairview-Clifford

Gently sloping to steep, well drained soils that have a loamy surface layer and a clayey subsoil; on uplands (fig. 5)

Setting

Location in the survey area: Scattered areas throughout the south-central part of the county

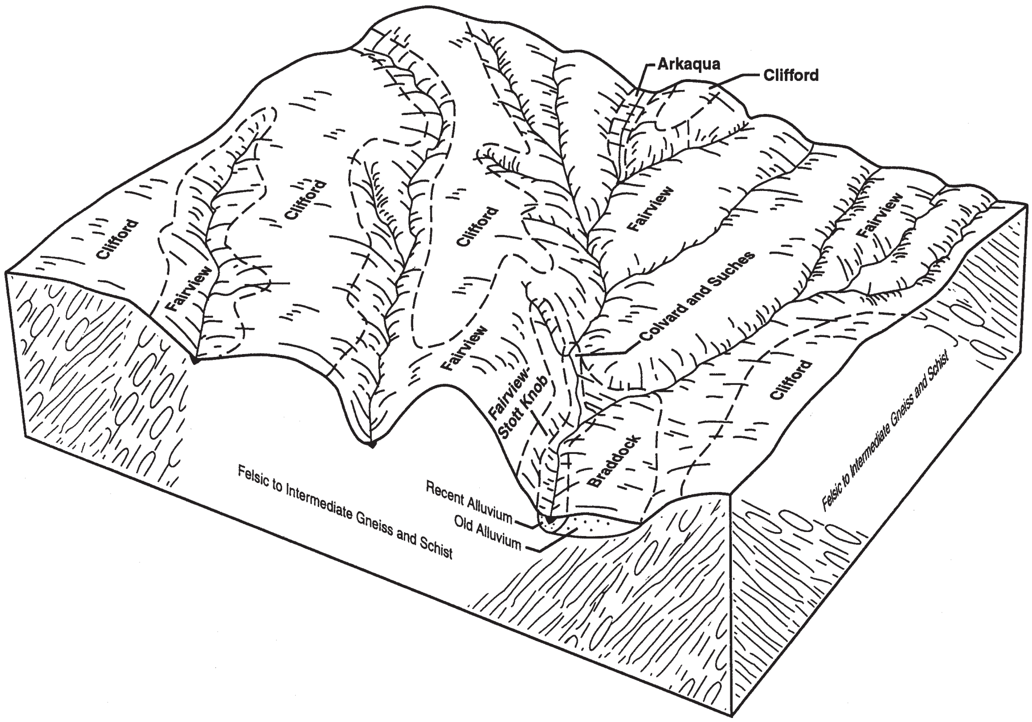

Figure 5.—Relationship of soils, landscape, and geology in the Fairview-Clifford general soil map unit.

Landscape: Piedmont uplands
Landform: Interfluves and ridges
Slope: 2 to 45 percent

Composition

Percent of the survey area: 6
Fairview soils: 48 percent
Clifford soils: 40 percent
Minor components: 12 percent

Soil Characteristics

Fairview
Surface layer: Brown and strong brown sandy clay loam
Subsoil: Upper part—red clay; lower part—red clay loam
Underlying material: Red loam saprolite
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 45 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic or igneous rock

Clifford
Surface layer: Yellowish red sandy clay loam
Subsoil: Red clay
Underlying material: Red clay loam saprolite
Depth class: Very deep

Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 8 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic or igneous rock

Minor components
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- The well drained Colvard soils on flood plains
- The well drained and moderately well drained Suches soils on flood plains
- Rhodhiss soils, which have a loamy subsoil
- Stott Knob soils, which have a loamy subsoil, have soft bedrock at a depth of 20 to 40 inches, and generally are in the steeper areas
- The somewhat poorly drained Arkaqua soils on flood plains
- Braddock soils, which have a clayey subsoil and are on footslopes, toeslopes, stream terraces, and in isolated pockets protected from erosion on the highest parts of interfluves
- The moderately well drained Dillard soils, which generally have a loamy subsoil and are on toeslopes and stream terraces
- Toast soils, which have a brown clayey subsoil
- The poorly drained Hatboro soils on flood plains

Use and Management

Major uses: Cropland, pasture, hayland, urban land, and woodland

Agriculture
Management concerns: Erodibility, soil fertility, and equipment use in the steeper areas

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants

Urban development
Management concerns: Slow water movement, low strength, high clay content, frost action, and slope

Recreational development
Management concerns: Slope

4. Stott Knob-Rhodhiss

Gently sloping to steep, well drained soils that have a loamy surface layer and a loamy subsoil; on uplands

Setting

Location in the survey area: Scattered areas throughout the northeastern and northwestern parts of the county
Landscape: Piedmont uplands
Landform: Ridges and high hills
Slope: 2 to 45 percent

Composition

Percent of the survey area: 4
Stott Knob soils: 42 percent

Rhodhiss soils: 36 percent
Minor components: 22 percent

Soil Characteristics

Stott Knob
Surface layer: Dark yellowish brown gravelly loam
Subsoil: Upper part—strong brown gravelly loam; next part—yellowish red gravelly loam; next part—yellowish red gravelly clay loam; next part—yellowish red gravelly loam; lower part—yellowish red very gravelly loam
Bedrock layer: Soft schist; hard schist below a depth of 40 inches
Depth class: Moderately deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 45 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic rock

Rhodhiss
Surface layer: Brown gravelly fine sandy loam
Subsoil: Upper part—strong brown gravelly loam; next part—yellowish red loam; next part—red clay loam; lower part—red loam
Underlying material: Upper part—yellowish red loam; lower part—reddish yellow fine sandy loam
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 45 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic rock

Minor components
- Woolwine soils, which have a red clayey subsoil and have soft bedrock at a depth of 20 to 40 inches
- Devotion soils, which have less clay in the subsoil and generally are in the steeper areas
- Fairview soils, which have a red clayey subsoil
- The well drained Colvard soils on flood plains
- The well drained and moderately well drained Suches soils on flood plains
- The somewhat poorly drained Arkaqua soils on flood plains
- Braddock soils, which have a clayey subsoil and are on footslopes, toeslopes, and stream terraces
- The moderately well drained Dillard soils on footslopes, toeslopes, and stream terraces
- Tate soils on stream terraces and colluvial fans
- The poorly drained Hatboro soils on flood plains

Use and Management

Major uses: Woodland, pasture, and cropland

Agriculture
Management concerns: Erodibility, soil fertility, and equipment use; Stott Knob—rooting depth

Woodland
Management concerns: Erodibility, equipment use, competition from undesirable plants, and seedling survival; Stott Knob—windthrow hazard

Urban development
Management concerns: Large stones, erodibility, soil fertility, frost action, and slope; Stott Knob—depth to bedrock

Recreational development
Management concerns: Small and large stones and slope

5. Toast-Rhodhiss-Bannertown

Gently sloping to very steep, well drained and somewhat excessively drained soils that have a loamy surface layer and a loamy or clayey subsoil; on uplands (fig. 4)

Setting

Location in the survey area: In the north-central part of the county in and around the town of Mount Airy and in the eastern part of the county near the Stokes County line, north of Westfield and Pilot Mountain
Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Slope: 2 to 60 percent

Composition

Percent of the survey area: 4
Toast soils: 40 percent
Rhodhiss soils: 21 percent
Bannertown soils: 11 percent
Minor components: 28 percent

Soil Characteristics

Toast
Surface layer: Brown coarse sandy loam
Subsoil: Upper part—yellowish brown clay; lower part—yellowish brown, brownish yellow, and light red sandy clay
Underlying material: Multicolored coarse sandy loam saprolite
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 15 percent
Parent material: Residuum weathered from granite and granite gneiss

Rhodhiss
Surface layer: Dark yellowish brown coarse sandy loam
Subsurface layer: Yellowish brown coarse sandy loam
Subsoil: Upper part—yellowish brown sandy clay loam; next part—brownish yellow sandy clay loam; lower part—reddish yellow coarse sandy loam
Underlying material: Brownish yellow coarse sandy loam saprolite
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 15 to 60 percent
Parent material: Residuum weathered from granite and granite gneiss

Bannertown
Surface layer: Dark brown gravelly coarse sandy loam

Subsoil: Upper part—brown gravelly coarse sandy loam; next part—yellowish brown gravelly coarse sandy loam; lower part—light yellowish brown gravelly coarse sandy loam
Underlying material: Light yellowish brown gravelly coarse sandy loam saprolite
Bedrock layer: Soft granite over hard granite before a depth of 40 inches
Depth class: Moderately deep
Agricultural drainage class: Somewhat excessively drained
Depth to seasonal high water table: More that 6.0 feet
Slope: 8 to 60 percent
Parent material: Residuum weathered from granite and granite gneiss

Minor components
- Urban land, which is in the city of Mount Airy
- Fairview soils, which have a red clayey subsoil and have bedrock at a depth of more than 60 inches
- Woolwine soils, which have a red clayey subsoil and have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have a red clayey subsoil and have soft bedrock at a depth of 40 to 60 inches
- The well drained Colvard soils on flood plains
- The moderately well drained Suches soils on flood plains
- The somewhat poorly drained Arkaqua soils on flood plains
- Braddock soils, which have a clayey subsoil and are on footslopes, toeslopes, and stream terraces
- The moderately well drained Dillard soils on footslopes, toeslopes, and stream terraces
- The poorly drained Hatboro soils on flood plains

Use and Management

Major uses: Urban land, cropland, pasture, hayland, and woodland

Agriculture
Management concerns: Erodibility, soil fertility, and equipment use; Bannertown—droughtiness and rooting depth

Woodland
Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants; Bannertown—windthrow hazard

Urban development
Management concerns: Areas of rock outcrop, slope, soil fertility, and erodibility; Toast—slow water movement, high clay content, and low strength; Bannertown—depth to bedrock and droughtiness

Recreational development
Management concerns: Areas of rock outcrop, small stones, and slope

6. Meadowfield-Stott Knob

Strongly sloping to steep, well drained soils that have a loamy surface layer and a loamy-skeletal or loamy subsoil; on uplands

Setting

Location in the survey area: Northeastern part of the county
Landscape: Piedmont uplands

Landform: Ridges and high hills
Slope: 8 to 45 percent

Composition

Percent of the survey area: 1
Meadowfield soils: 65 percent
Stott Knob soils: 23 percent
Minor components: 12 percent

Soil Characteristics

Meadowfield
Surface layer: Dark yellowish brown very gravelly loam
Subsoil: Upper part—strong brown very gravelly loam; lower part—yellowish red very gravelly clay loam
Underlying material: Multicolored extremely gravelly loam saprolite that has pockets of red very gravelly clay loam
Bedrock layer: Hard sillimanite schist
Depth class: Moderately deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 8 to 45 percent
Parent material: Residuum weathered from high grade metamorphic rock, such as sillimanite schist

Stott Knob
Surface layer: Dark yellowish brown gravelly loam
Subsoil: Upper part—strong brown gravelly loam; next part—yellowish red gravelly loam; next part—yellowish red gravelly clay loam; next part—yellowish red gravelly loam; lower part—yellowish red very gravelly loam
Bedrock layer: Soft mica schist; hard mica schist at depths of more than 40 inches
Depth class: Moderately deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 8 to 45 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic rock

Minor components
- Woolwine soils, which have a clayey subsoil and have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have a clayey subsoil and have soft bedrock at a depth of 40 to 60 inches
- Hickoryknob soils, which have a loamy subsoil and have hard bedrock at a depth of 20 to 40 inches
- Rhodhiss soils, which have a loamy subsoil and have soft bedrock at a depth of 40 to 60 inches or have bedrock at a depth of more than 60 inches
- Soils that are like the Hickoryknob soils and have a loamy subsoil and have hard bedrock at a depth of less than 20 inches
- Rock outcrops

Use and Management

Major uses: Woodland, pasture, and hayland

Agriculture
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility; Meadowfield—droughtiness

Woodland

Management concerns: Erodibility, equipment use, windthrow hazard, seedling survival, and competition from undesirable plants

Urban development

Management concerns: Depth to bedrock, slope, erodibility, large stones, and soil fertility

Recreational development

Management concerns: Large and small stones and slope

7. Cowee-Evard

Strongly sloping to extremely steep, well drained soils that have a loamy surface layer and a loamy subsoil; on uplands (fig. 6)

Setting

Location in the survey area: Northwestern part of the county

Landscape: Blue Ridge mountains and Blue Ridge foothills

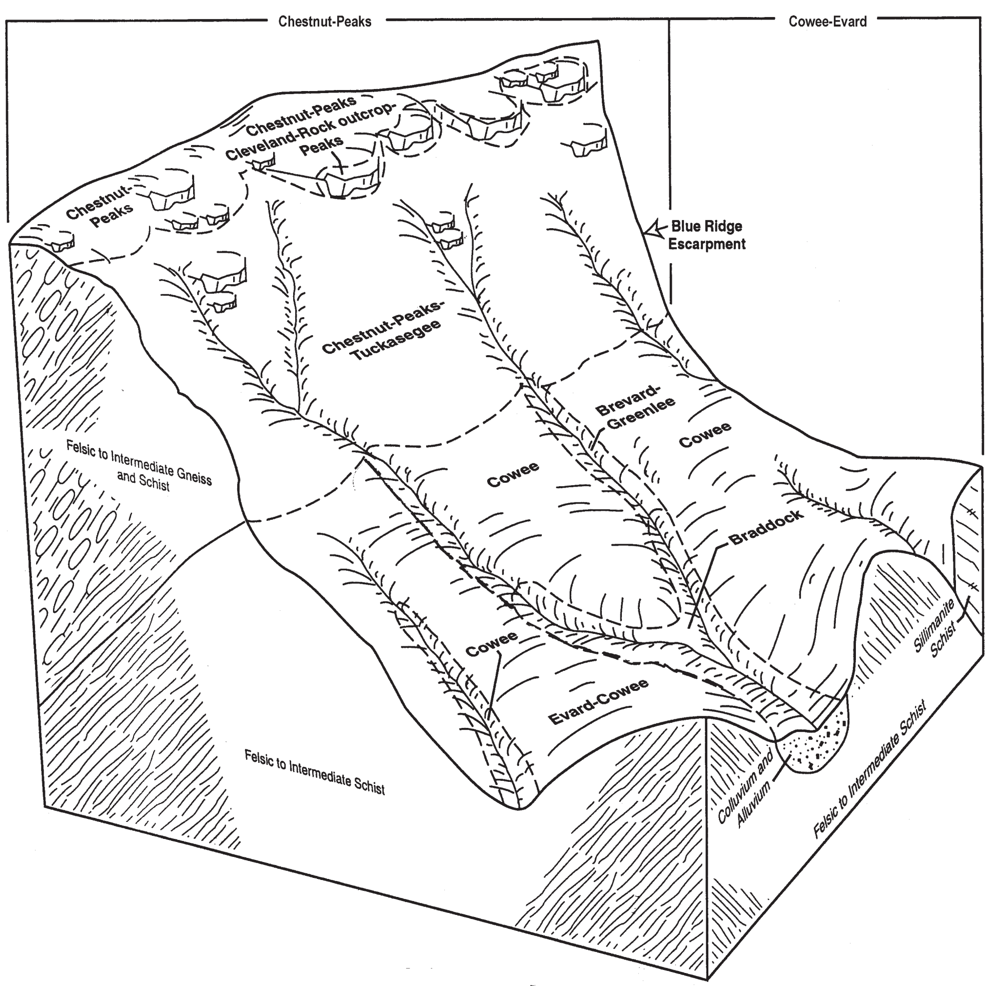

Figure 6.—Relationship of soils, landscape, and geology in the Cowee-Evard general soil map unit and the Chestnut-Peaks general soil map unit.

Landform: Ridges and escarpments
Slope: 8 to 90 percent

Composition

Percent of the survey area: 6
Cowee soils: 54 percent
Evard soils: 21 percent
Minor components: 25 percent

Soil Characteristics

Cowee
Surface layer: Dark brown gravelly loam
Subsoil: Upper part—brown loam; next part—strong brown sandy clay loam; lower part—yellowish red sandy clay loam
Underlying material: Brownish yellow gravelly fine sandy loam
Bedrock layer: Soft, felsic gneiss
Depth class: Moderately deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 8 to 90 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic rock

Evard
Surface layer: Dark yellowish brown gravelly fine sandy loam
Subsurface layer: Yellowish brown gravelly fine sandy loam
Subsoil: Upper part—yellowish red sandy clay loam; next part—red clay loam; lower part—yellowish red sandy clay loam
Underlying material: Upper part—strong brown fine sandy loam; next part—yellowish red gravelly fine sandy loam; lower part—yellowish brown gravelly loamy fine sand
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 8 to 90 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic rock

Minor components
- Soils that are like the Hayesville soils and have a red clayey subsoil and have bedrock at a depth of less than 60 inches
- Hayesville soils, which have a red clayey subsoil and have bedrock at a depth of more than 60 inches
- Edneytown soils, which have a brown loamy subsoil and have bedrock at a depth of more than 60 inches
- Chestnut soils, which have less clay in the subsoil and have soft bedrock at a depth of 20 to 40 inches
- The well drained Colvard soils on flood plains
- The well drained and moderately well drained Suches soils on flood plains
- The somewhat poorly drained Bandana soils on flood plains
- The somewhat poorly drained Arkaqua soils on flood plains
- Braddock soils, which have a clayey subsoil and are on footslopes, toeslopes, and stream terraces
- Tate soils on small colluvial fans, footslopes, toeslopes, and stream terraces
- Tuckasegee soils on small colluvial fans, footslopes, and toeslopes
- The moderately well drained Dillard soils on footslopes, toeslopes, and stream terraces

- Saluda soils, which have bedrock at a depth of less than 20 inches, especially on very steep and extremely steep slopes
- The poorly drained Hatboro soils on flood plains

Use and Management

Major uses: Woodland, pasture, and cropland

Woodland
Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants; Cowee—windthrow hazard

Agriculture
Management concerns: Erodibility, soil fertility, and equipment use; Cowee—rooting depth

Urban development
Management concerns: Large stones, erodibility, soil fertility, and slope; Cowee—depth to bedrock

Recreational development
Management concerns: Small and large stones and slope

8. Chestnut-Peaks

Strongly sloping to extremely steep, well drained and somewhat excessively drained soils that have a loamy surface layer and a loamy subsoil; on mountains (fig. 6)

Setting

Location in the survey area: Northwestern part of county along the Alleghany and Grayson County lines and on Pilot Mountain in the eastern part of the county
Landscape: Blue Ridge mountains and Pilot Mountain
Landform: Mountaintops and mountain flanks
Slope: 8 to 90 percent

Composition

Percent of the survey area: 3 percent
Chestnut soils: 37 percent
Peaks soils: 21 percent
Minor components: 42 percent

Soil Characteristics

Chestnut
Surface layer: Very dark grayish brown gravelly fine sandy loam
Subsoil: Upper part—dark yellowish brown gravelly fine sandy loam; lower part—light olive brown gravelly fine sandy loam
Underlying material: Light olive brown gravelly fine sandy loam saprolite
Bedrock layer: Soft felsic schist; hard felsic schist below 40 inches
Depth class: Moderately deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 8 to 90 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic rock

Peaks
Surface layer: Very dark brown very gravelly fine sandy loam
Subsurface layer: Dark brown very gravelly fine sandy loam

Subsoil: Upper part—dark yellowish brown gravelly fine sandy loam; lower part—dark yellowish brown very gravelly fine sandy loam
Underlying material: Dark yellowish brown extremely gravelly fine sandy loam
Bedrock layer: Hard felsic gneiss
Depth class: Moderately deep
Agricultural drainage class: Somewhat excessively drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 8 to 90 percent
Parent material: Residuum weathered from felsic and intermediate metamorphic rock

Minor components
- Tuckasegee soils, which are on small colluvial fans, footslopes, and toeslopes
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches
- Edneyville soils, which have a brown loamy subsoil and have bedrock at a depth of more than 60 inches
- Edneytown soils, which have a brown loamy subsoil that has a better structure in the subsoil than the major soils and have bedrock at a depth of more than 60 inches
- Rock outcrops
- Cowee soils, which have a red loamy subsoil, have soft bedrock at a depth of 20 to 40 inches, and occur at lower elevations than the major soils
- Sauratown soils, which have slightly more clay in the subsoil than the major soils, have hard bedrock at a depth of 20 to 40 inches, and generally occur on Pilot Mountain
- Cliffield soils, which have a better structure in the subsoil than the major soils
- Tate soils on small colluvial fans and stream terraces
- Colvard soils on small flood plains
- Evard soils, which have a red loamy subsoil, have bedrock at a depth of more than 60 inches, and occur at lower elevations than the major soils

Use and Management

Major uses: Woodland and recreation

Agriculture
Management concerns: Erodibility, droughtiness, equipment use, and soil fertility

Woodland
Management concerns: Erodibility, equipment use, seedling survival, windthrow hazard, and competition from undesirable plants

Urban development
Management concerns: Slope, depth to bedrock, erodibility, seepage, poor filtering capacity, large stones, and soil fertility

Recreational development
Management concerns: Slope and small and large stones

9. Braddock-Brevard-Greenlee

Nearly level to very steep, well drained soils that have a loamy surface layer and a loamy or clayey subsoil

Setting

Location in the survey area: Scattered areas at the base of the Blue Ridge escarpment in the northwestern part of the county and on Pilot Mountain in the eastern part of the county
Landscape: Blue Ridge mountains and Pilot Mountain

Landform: Colluvial and alluvial fans and high stream terraces
Slope: 2 to 60 percent

Composition

Percent of the survey area: 1
Braddock soils: 52 percent
Brevard soils: 18 percent
Greenlee soils: 13 percent
Minor components: 17 percent

Soil Characteristics

Braddock
Surface layer: Very dark grayish brown extremely cobbly fine sandy loam
Subsurface layer: Reddish brown very cobbly fine sandy loam
Subsoil: Upper part—yellowish red sandy clay loam; next part—red cobbly clay; next part—red gravelly clay; next part—red cobbly clay loam; lower part—red cobbly loam
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 2 to 45 percent
Parent material: Colluvium and old alluvium

Brevard
Surface layer: Dark brown gravelly fine sandy loam
Subsurface layer: Brown gravelly fine sandy loam
Subsoil: Upper part—strong brown gravelly sandy clay loam; next part—yellowish red and red gravelly sandy clay loam; lower part—yellowish red gravelly sandy clay loam
Underlying material: Yellowish red very gravelly fine sandy loam
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 8 to 60 percent
Parent material: Colluvium and old alluvium

Greenlee
Surface layer: Dark gray extremely bouldery fine sandy loam
Subsurface layer: Brown extremely stony fine sandy loam
Subsoil: Upper part—yellowish brown very stony fine sandy loam; lower part—yellowish brown extremely stony fine sandy loam
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: More than 6.0 feet
Slope: 8 to 60 percent
Parent material: Colluvium and old alluvium

Minor components
- Pilot Mountain soils, which have a loamy subsoil that has more than 35 percent rounded and subrounded rock fragments and generally occurs on the footslopes of Pilot Mountain
- Tate soils, which have a brown loamy subsoil
- Tuckasegee soils, which have a thick, dark surface layer
- Colvard soils, which have a loamy subsurface layer and are on narrow flood plains
- The somewhat poorly drained Bandana soils, which have a loamy subsurface layer over gravelly and cobbly layers and are on narrow flood plains

- The somewhat poorly drained Arkaqua soils on narrow flood plains
- Cowee soils, which have a red loamy subsoil, have soft bedrock at a depth of 20 to 40 inches, and are on steep backslopes and resistant knobs
- Fairview soils, which have a red clayey subsoil and are on steep backslopes and resistant knobs
- The poorly drained Hatboro soils on narrow flood plains

Use and Management

Major uses: Woodland, cropland, and pasture

Agriculture
Management concerns: Erodibility, equipment use, and soil fertility; Greenlee—tilth

Woodland
Management concerns: Erodibility, equipment use, competition from undesirable plants, and seedling survival

Urban development
Management concerns: Erodibility, large stones, rock fragment content, soil fertility, and slope; Braddock—low strength, slow water movement, and high clay content

Recreational development
Management concerns: Slope and large and small stones

10. Colvard-Suches

Nearly level, well drained soils that have a loamy surface layer and a loamy subsoil; on flood plains (fig. 3)

Setting

Location in the survey area: Scattered areas, mostly in the northern part of the county and along the Yadkin River in the southern part of the county
Landscape: Piedmont and Blue Ridge foothills
Landform: Flood plains
Slope: 0 to 3 percent

Composition

Percent of the survey area: 4
Colvard soils: 46 percent
Suches soils: 36 percent
Minor components: 18 percent

Soil Characteristics

Colvard
Surface layer: Dark yellowish brown fine sandy loam
Underlying material: Upper part—strong brown fine sandy loam; next part—brown fine sandy loam; lower part—brown gravelly loamy fine sand
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: 4.0 to 6.0 feet
Slope: 0 to 3 percent
Parent material: Recent alluvium

Suches
Surface layer: Brown loam

Subsurface layer: Brown loam that has pockets of strong brown clay loam subsoil material
Subsoil: Upper part—strong brown clay loam; next part—brown and strong brown loam; lower part—dark yellowish brown loam
Underlying material: Dark yellowish brown loam
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: 2.5 to 4.0 feet
Slope: 0 to 3 percent
Parent material: Recent alluvium

Minor components
- The somewhat poorly drained Arkaqua soils on flood plains
- The well drained Braddock soils, which have a clayey subsoil and are on toeslopes and stream terraces
- The moderately well drained Dillard soils, which generally have a loamy subsoil and are on stream terraces and toeslopes
- The well drained Tate soils on stream terraces and toeslopes
- The somewhat poorly drained Bandana soils on flood plains
- The poorly drained Hatboro soils in depressions and backswamps on flood plains
- The very poorly drained Nikwasi soils in depressions on flood plains

Use and Management

Major uses: Cropland, pasture, and woodland

Agriculture
Management concerns: Flooding

Woodland
Management concerns: Competition from undesirable plants

Urban development
Management concerns: Flooding

Recreational development
Management concerns: Flooding

11. Braddock-Colvard-Suches-Dillard

Nearly level to moderately steep, well drained and moderately well drained soils that have a loamy surface layer and a clayey or loamy subsoil; on lowlands

Setting

Location in the survey area: Scattered areas, mostly in the northern parts of the county
Landscape: Piedmont and Blue Ridge foothills
Landform: Stream terraces and flood plains
Slope: 0 to 25 percent

Composition

Percent of the survey area: 2 percent
Braddock soils: 40 percent
Colvard soils: 14 percent
Suches soils: 10 percent
Dillard soils: 10 percent
Minor components: 26 percent

Soil Characteristics

Braddock
Surface layer: Brown fine sandy loam
Subsoil: Upper part—yellowish red clay; next part—red clay; lower part—yellowish red clay loam
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to high water table: More than 6.0 feet
Slope: 2 to 25 percent
Parent material: Colluvium and old alluvium

Colvard
Surface layer: Dark yellowish brown fine sandy loam
Subsoil: Upper part—strong brown fine sandy loam; next part—brown fine sandy loam; lower part—brown gravelly loamy fine sand
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: 4.0 to 6.0 feet
Slope: 0 to 3 percent
Parent material: Recent alluvium

Suches
Surface layer: Brown loam
Subsurface layer: Brown loam that has pockets of strong brown clay loam subsoil material
Subsoil: Upper part—strong brown clay loam; next part—brown and strong brown loam; lower part—dark yellowish brown loam
Underlying material: Dark yellowish brown loam
Depth class: Very deep
Agricultural drainage class: Well drained
Depth to seasonal high water table: 2.5 to 4.0 feet
Slope: 0 to 3 percent
Parent material: Recent alluvium

Dillard
Surface layer: Yellowish brown fine sandy loam
Subsoil: Upper part—brownish yellow sandy clay loam; next part—light olive brown sandy clay loam; next part—light olive brown clay; lower part—light brownish gray clay loam
Underlying material: Light gray clay loam
Depth class: Very deep
Agricultural drainage class: Moderately well drained
Depth to seasonal high water table: 2.0 to 3.0 feet
Slope: 2 to 8 percent
Parent material: Colluvium and old alluvium

Minor components
- The somewhat poorly drained Arkaqua soils on flood plains
- Tate soils on stream terraces
- The somewhat poorly drained Bandana soils on flood plains
- Fairview soils, which have a clayey subsoil and are on steep backslopes and resistant knobs
- Stott Knob soils, which have a loamy subsoil and are on steep backslopes and resistant knobs
- The poorly drained Hatboro soils in back swamps and small depressions on flood plains

Use and Management

Major uses: Cropland, pasture, and woodland

Agriculture

Management concerns: Braddock—erodibility, equipment use, and soil fertility; Colvard and Suches—flooding and soil fertility; Dillard—erodibility, flooding, wetness, and soil fertility

Woodland

Management concerns: Competition from undesirable plants; Braddock and Dillard—equipment use; Braddock—erodibility

Urban development

Management concerns: Colvard, Suches, and Dillard—flooding; Braddock and Dillard—slow water movement; Braddock—low strength, erodibility, high clay content, and slope; Dillard—wetness

Recreational development

Management concerns: Colvard, Suches, and Dillard—flooding; Braddock and Dillard—slope; Braddock—large and small stones; Dillard—wetness

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Fairview cobbly sandy clay loam, 2 to 8 percent slopes, moderately eroded, stony, is a phase of the Fairview series.

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded, is an undifferentiated group in this survey area.

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

The areas shown on the detailed soil maps may include soil phases that are too small to delineate at the scale selected for publication. Examples of these phases include areas that have slopes greater than or less than the slope range indicated in the map unit name, areas that have rock fragment content in the surface layer that is greater than or less than the range described for the map unit component, and rock fragment sizes that are greater than or less than those described in the map unit.

Also, map units may have areas that are more severely eroded or less severely eroded than indicated in the map unit name. Unless otherwise indicated, these similar components, dissimilar components of minor extent, and included phases of series generally are scattered throughout the map unit.

Detailed information about soil series that are named as minor components but are not further described in this soil survey report can be found by visiting the website for “Official Series Descriptions (OSD)” at http://soils.usda.gov.

The table “Acreage and Proportionate Extent of the Soils” 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.

ArA—Arkaqua loam, 0 to 2 percent slopes, frequently flooded

Setting

Landscape: Piedmont and Blue Ridge foothill valleys
Landform: Flood plains
Geomorphic component: Talfs, dips, and rises
Shape and size of areas: Long and narrow bands; 5 to 50 acres

Composition

Arkaqua and similar soils: About 73 percent
Dissimilar soils: About 27 percent

Typical Profile

Surface layer:
0 to 10 inches—brown loam

Subsoil:
10 to 16 inches—light olive brown clay loam
16 to 25 inches—olive clay loam
25 to 34 inches—gray sandy clay loam
34 to 45 inches—gray fine sandy loam that has lenses of sandy clay loam

Underlying material:
45 to 54 inches—brownish yellow fine sandy loam
54 to 79 inches—dark grayish brown loam that has lenses of fine sandy loam and sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Somewhat poorly drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: 1.0 to 2.0 feet
Flooding: Frequent
Shrink-swell potential: Low
Slope class: Nearly level
Index surface runoff: Very low
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Iotla soils, which have less clay in the subsoil than the Arkaqua soil
- Soils that are similar to the Arkaqua soil but have a thinner subsoil

Dissimilar:
- The well drained and moderately well drained Suches soils in the slightly higher areas
- The poorly drained Hatboro soils in small depressions
- French soils, which have a very gravelly layer at a depth of less than 40 inches
- The well drained Colvard soils in the slightly higher areas
- Biltmore soils, which are sandier and better drained than the Arkaqua soil and occur on natural levees adjacent to streams and on small, narrow ridges
- Soils that are like the Iotla soil, except they have a sandy subsoil
- The poorly drained Kinkora soils, which are clayey soils in small depressions

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Well suited if drained and protected from flooding or if not frequently flooded during the growing season
Management concerns: Flooding and wetness
Management measures and considerations:
- Harvesting row crops as soon as possible can reduce the risk of damage from flooding.

- Installing and maintaining an artificial drainage system reduce wetness and improve the productivity of the soil.
- The Hatboro and Kinkora components are hydric soils and are wetlands in their natural state; wetlands are restricted by law for certain uses, including cropland.

Pasture and hayland
Suitability: Well suited if protected from flooding or if not frequently flooded during the growing season
Management concerns: Flooding, wetness, soil fertility, and competition from undesirable plants
Management measures and considerations:
- Although most flooding occurs during the winter, livestock production and hay crops may be damaged any time of the year.
- Artificial drainage may be needed to maximize productivity.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.
- Using herbicides and implementing a well planned schedule of clipping maximize weed control.

Woodland
Management concerns: Equipment use
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods reduces rutting and compaction that occur when the soil is saturated.
- Harvesting timber during the summer reduces the risk of damage from flooding.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit has severe limitations that affect septic tank absorption fields. The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BaC—Bandana-Tate-Nikwasi complex, 0 to 15 percent slopes, frequently flooded

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothill valleys
Landform: Bandana and Nikwasi—flood plains; Tate—fans and stream terraces
Geomorphic component: Bandana—talfs, dips, and rises; Tate—mountain bases, base slopes, treads, and risers; Nikwasi—dips
Shape and size of areas: Long and narrow bands; 5 to 70 acres

Composition

Bandana and similar soils: About 39 percent
Tate and similar soils: About 19 percent
Nikwasi and similar soils: About 11 percent
Dissimilar soils: About 31 percent

Typical Profile

Bandana

Surface layer:
0 to 4 inches—very dark grayish brown fine sandy loam

Subsoil:
4 to 15 inches—brown fine sandy loam that has strong brown mottles, dark grayish brown iron depletions, and faint brown pore fillings
15 to 19 inches—strong brown fine sandy loam that has dark grayish brown iron depletions and yellowish brown masses of oxidized iron
19 to 26 inches—dark grayish brown fine sandy loam that has yellowish red masses of oxidized iron

Buried surface layer:
26 to 30 inches—black loamy fine sand that has very dark gray mottles

Underlying material:
30 to 49 inches—dark yellowish brown very gravelly sand
49 to 79 inches—dark yellowish brown extremely gravelly sand

Tate

Surface layer:
0 to 5 inches—dark grayish brown fine sandy loam

Subsoil:
5 to 14 inches—yellowish brown sandy clay loam
14 to 33 inches—brownish yellow sandy clay loam
33 to 41 inches—light yellowish brown sandy clay loam that has brownish yellow mottles
41 to 47 inches—light yellowish brown fine sandy loam that has brownish yellow mottles

Underlying material:
47 to 52 inches—brownish yellow very gravelly sandy loam
52 to 79 inches—pale brown, brownish yellow, and very pale brown gravelly loamy fine sand

Nikwasi

Surface layer:
0 to 6 inches—very dark gray loam

Subsurface layer:
6 to 20 inches—very dark grayish brown loam
20 to 28 inches—dark brown loam
28 to 31 inches—very dark gray loamy fine sand

Underlying material:
31 to 37 inches—dark grayish brown loamy fine sand
37 to 79 inches—dark grayish brown very gravelly loamy fine sand

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Bandana—somewhat poorly drained; Tate—well drained; Nikwasi—very poorly drained
Saturated hydraulic conductivity class: Bandana and Nikwasi—high in the upper part and high or very high in the lower part; Tate—moderately high
Available water capacity: Bandana and Nikwasi—low or moderate; Tate—moderate or high

Depth to seasonal high water table: Bandana—1.0 to 2.0 feet; Tate—more than 6.0 feet; Nikwasi—0 to 1.0 foot
Flooding: Bandana and Nikwasi—frequent; Tate—none
Ponding: Bandana and Tate—none; Nikwasi—frequent
Shrink-swell potential: Low
Slope class: Bandana and Nikwasi—nearly level; Tate—gently sloping to moderately steep
Index surface runoff: Bandana—very low; Tate—low or medium as the slope increases; Nikwasi—negligible
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Iotla soils, which are similar to the Bandana soil but lack a gravel layer within 40 inches of the surface
- Biltmore soils, which have sandier textures than the Bandana soil
- Arkaqua soils, which have slightly more clay than the Bandana soil
- Brevard soils, which have a redder subsoil than the Tate soil
- Braddock soils, which have more clay in the subsoil than the Tate soil
- Soils that are similar to the Tate soil but have gray iron depletions in the lower part of the subsoil or in the underlying material
- Hatboro soils, which have slightly better drainage and more clay in the subsoil than the Nikwasi soil
- Toxaway soils, which have thicker loamy horizons and less gravel than the Nikwasi soil

Dissimilar:
- The moderately well drained Dillard soils on toeslopes and terraces
- Reddies soils, which have a very gravelly layer within 20 inches of the surface and occur on flood plains
- Ostin soils, which have sandy textures, have more than 35 percent rock fragments below the surface layer, and occur on flood plains
- The well drained Colvard soils on flood plains
- The well drained and moderately well drained Suches soils on flood plains

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Bandana—poorly suited; Tate—moderately suited; Nikwasi—unsuited
Management concerns: Bandana—flooding; Tate—erodibility; Nikwasi—flooding, wetness, and ponding
Management measures and considerations:
- Nikwasi soils are hydric soils and are wetlands in their natural state; wetlands are restricted by law for certain uses, including cropland.
- This map unit is severely limited for crop production because of the extreme variability of the map unit. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Bandana—moderately suited to pasture and poorly suited to hayland; Tate—well suited to pasture and moderately suited to hayland; Nikwasi—poorly suited to pasture and hayland
Management concerns: Bandana—flooding; Tate—equipment use; Nikwasi—wetness, flooding, and ponding

Management measures and considerations:
- Although most flooding occurs during the winter, livestock production and hay crops may be damaged any time of the year in areas of the Bandana and Nikwasi soils.
- Well maintained drainageways and ditches help to remove excess water.
- The slope may limit equipment use in the steeper areas of the Tate soil when hay is harvested.

Woodland
Management concerns: Bandana—wetness; Tate—erodibility; Nikwasi—wetness and seedling survival
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods reduces rutting and compaction that occur when the soil is saturated.
- Harvesting timber during the summer reduces the risk of damage from flooding.
- Establishing permanent plant cover on roads and landings following logging operations reduces the hazard of erosion and helps to control siltation of streams.
- Bedding the Nikwasi soil prior to planting helps to establish seedlings and increases the seedling survival rate.

Urban development
Suitability: Bandana and Nikwasi—unsuited; Tate—moderately suited
Management concerns: Bandana—flooding, wetness, poor filtering capacity, and seeps and springs; Tate—slope and seepage; Nikwasi—flooding, wetness, seepage, ponding, and seeps and springs
Management measures and considerations:
- Locating and installing septic tank absorption fields in the nonflooded Tate soil may improve system performance.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BbB—Braddock fine sandy loam, 2 to 8 percent slopes

Setting

Landscape: Piedmont, Blue Ridge foothills, and Blue Ridge mountain valleys
Landform: Stream terraces, fans, and fan remnants
Geomorphic component: Treads, base slopes, and mountain bases
Shape and size of areas: Long and narrow, fan-shaped, or irregular; 5 to 90 acres

Composition

Braddock and similar soils: About 99 percent
Dissimilar soils: About 1 percent

Typical Profile

Surface layer:
0 to 9 inches—brown fine sandy loam

Subsoil:
9 to 19 inches—yellowish red clay
19 to 34 inches—red clay
34 to 56 inches—red clay that has yellowish red mottles
56 to 79 inches—yellowish red clay loam that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained

Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 6.0 feet
Flooding: None
Shrink-swell potential: Moderate
Erosion class: Slight
Slope class: Gently sloping
Index surface runoff: Low or medium as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Wintergreen soils, which have a thicker subsoil than the Braddock soil
- Brevard soils, which have a loamy subsoil
- Unison soils, which have a yellower subsoil than the Braddock soil

Dissimilar:
- The moderately well drained Dillard soils in concave areas and seeps

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Well suited (fig. 7)
Management concerns: Erodibility and soil fertility
Management measures and considerations:
- Resource management systems that include diversions, stripcropping, contour

Figure 7.—Flue-cured tobacco and corn in an area of Braddock fine sandy loam, 2 to 8 percent slopes. A grassed waterway separates the tobacco from the corn.

tillage, no-till farming, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Management concerns: Erodibility and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Moderately suited
Management concerns: Low strength, slow water movement, and high clay content
Management measures and considerations:
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BbC—Braddock fine sandy loam, 8 to 15 percent slopes

Setting

Landscape: Piedmont, Blue Ridge foothills, and Blue Ridge mountain valleys
Landform: Stream terraces, fans, and fan remnants
Geomorphic component: Treads, risers, base slopes, and mountain bases
Shape and size of areas: Long and narrow or irregular; 5 to 30 acres

Composition

Braddock and similar soils: About 97 percent
Dissimilar soils: About 3 percent

Typical Profile

Surface layer:
0 to 9 inches—brown fine sandy loam

Subsoil:
9 to 19 inches—yellowish red clay
19 to 34 inches—red clay
34 to 56 inches—red clay that has yellowish red mottles
56 to 79 inches—yellowish red clay loam that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 6.0 feet
Flooding: None
Shrink-swell potential: Moderate
Erosion class: None or slight
Slope class: Strongly sloping
Index surface runoff: Medium
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Wintergreen soils, which have a thicker subsoil than the Braddock soil
- Unison soils, which have a yellower subsoil than the Braddock soil
- Tate soils, which have a yellow, loamy subsoil and are in the lower areas
- Brevard soils, which have a loamy subsoil
- Clifford and Fairview soils, which are on resistant knolls

Dissimilar:
- The moderately well drained Dillard soils in concave areas and seeps

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Moderately suited
Management concerns: Erodibility and soil fertility
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Low strength, slow water movement, high clay content, and slope
Management measures and considerations:
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BbD—Braddock fine sandy loam, 15 to 25 percent slopes

Setting

Landscape: Piedmont, Blue Ridge foothills, and Blue Ridge mountain valleys
Landform: Stream terraces, fans, and fan remnants
Geomorphic component: Risers, base slopes, and mountain bases
Shape and size of areas: Long and narrow or irregular; 5 to 20 acres

Composition

Braddock and similar soils: About 97 percent
Dissimilar soils: About 3 percent

Typical Profile

Surface layer:
0 to 9 inches—brown fine sandy loam

Subsoil:
9 to 19 inches—yellowish red clay
19 to 34 inches—red clay
34 to 56 inches—red clay that has yellowish red mottles
56 to 79 inches—yellowish red clay loam that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 6.0 feet
Flooding: None
Shrink-swell potential: Moderate
Erosion class: None or slight
Slope class: Moderately steep
Index surface runoff: Medium or high as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Wintergreen soils, which have a thicker subsoil than the Braddock soil
- Rhodhiss soils, which have a loamy subsoil and are on resistant knolls
- Fairview soils, which are on resistant knolls
- Unison soils, which have a brown and yellow subsoil

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches and are on resistant knobs
- Stott Knob soils, which have a loamy subsoil, have soft bedrock at a depth of 20 to 40 inches, and are on resistant knobs

Land Use

Dominant uses: Pasture, hayland, cropland, and woodland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- This map unit is difficult to manage for cultivated crops because the slope limits the use of equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Low strength, erodibility, slow water movement, high clay content, and slope
Management measures and considerations:
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.

- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BcB—Braddock cobbly fine sandy loam, 2 to 8 percent slopes

Setting

Landscape: Piedmont, Blue Ridge foothills, and Blue Ridge mountain valleys
Landform: Stream terraces, fans, and fan remnants
Geomorphic component: Treads, base slopes, and mountain bases
Shape and size of areas: Long and narrow, fan-shaped, or irregular; 5 to 90 acres

Composition

Braddock and similar soils: About 100 percent

Typical Profile

Surface layer:
0 to 9 inches—brown cobbly fine sandy loam

Subsoil:
9 to 19 inches—yellowish red clay
19 to 34 inches—red clay
34 to 56 inches—red clay that has yellowish red mottles
56 to 79 inches—yellowish red clay loam that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 6.0 feet
Flooding: None
Shrink-swell potential: Moderate
Erosion class: Slight
Slope class: Gently sloping
Index surface runoff: Low or medium as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Wintergreen soils, which have a thicker subsoil than the Braddock soil
- Brevard soils, which have a loamy subsoil

Land Use

Dominant uses: Pasture, hayland, cropland, and woodland

Cropland
Suitability: Moderately suited

Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Resource management systems that include diversions, stripcropping, contour tillage, no-till farming, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited to pasture (fig. 8) and moderately suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.

Figure 8.—Fescue pasture in an area of Braddock cobbly fine sandy loam, 2 to 8 percent slopes. The Blue Ridge Escarpment is in the background.

- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Moderately suited
Management concerns: Large stones, low strength, slow water movement, and high clay content
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BdC—Braddock cobbly fine sandy loam, 8 to 15 percent slopes, stony

Setting

Landscape: Piedmont, Blue Ridge foothills, and Blue Ridge mountain valleys
Landform: Stream terraces, fans, and fan remnants
Geomorphic component: Treads, risers, base slopes, and mountain bases
Shape and size of areas: Long and narrow, fan-shaped, or irregular; 5 to 30 acres

Composition

Braddock and similar soils: About 93 percent
Dissimilar soils: About 7 percent

Typical Profile

Surface layer:
0 to 9 inches—brown cobbly fine sandy loam

Subsoil:
9 to 19 inches—yellowish red clay
19 to 34 inches—red clay
34 to 56 inches—red clay that has yellowish red mottles
56 to 79 inches—yellowish red clay loam that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 6.0 feet
Flooding: None
Shrink-swell potential: Moderate
Erosion class: Slight
Slope class: Strongly sloping
Index surface runoff: Medium
Stoniness: Stony
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Wintergreen soils, which have a thicker subsoil than the Braddock soil
- Brevard soils, which have a loamy subsoil

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches and are on resistant knobs and nose slopes
- Pilot Mountain soils, which have a loamy subsoil that contains more than 35 percent rock fragments

Land Use

Dominant uses: Pasture, hayland, cropland, and woodland

Cropland
Suitability: Moderately suited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Moderately suited
Management concerns: Large stones, low strength, slow water movement, high clay content, and slope
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.

- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BdD—Braddock cobbly fine sandy loam, 15 to 25 percent slopes, stony

Setting

Landscape: Piedmont, Blue Ridge foothills, and Blue Ridge mountain valleys
Landform: Stream terraces, fans, and fan remnants
Geomorphic component: Risers, base slopes, and mountain bases
Shape and size of areas: Long and narrow or irregular; 5 to 20 acres

Composition

Braddock and similar soils: About 93 percent
Dissimilar soils: About 7 percent

Typical Profile

Surface layer:
0 to 9 inches—brown cobbly fine sandy loam

Subsoil:
9 to 19 inches—yellowish red clay
19 to 34 inches—red clay
34 to 56 inches—red clay that has yellowish red mottles
56 to 79 inches—yellowish red clay loam that has strong brown mottles

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: More than 6.0 feet
Flooding: None
Shrink-swell potential: Moderate
Erosion class: Slight
Slope class: Moderately steep
Index surface runoff: Medium or high as the slope increases
Stoniness: Stony
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Wintergreen soils, which have a thicker subsoil than the Braddock soil
- Brevard soils, which have a loamy subsoil

Dissimilar:
- Pilot Mountain soils, which have a loamy subsoil that contains more than 35 percent rock fragments

- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches and are on resistant knobs and nose slopes

Land Use

Dominant uses: Pasture, hayland, woodland, and cropland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is severely limited for crop production because of the steepness of the slope and the amount of stones and cobbles on the surface. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Large stones, erodibility, low strength, slow water movement, high clay content, and slope
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.

- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BpC—Braddock-Pilot Mountain complex, 8 to 15 percent slopes, rubbly

Setting

Landscape: Pilot Mountain (fig. 9) and Blue Ridge mountain valleys
Landform: Fans
Geomorphic component: Mountain bases
Shape and size of areas: Fan-shaped or irregular; 5 to 100 acres

Composition

Braddock and similar soils: About 73 percent
Pilot Mountain and similar soils: About 25 percent
Dissimilar soils: About 2 percent

Typical Profile

Braddock
Surface layer:
0 to 4 inches—very dark grayish brown extremely cobbly fine sandy loam
4 to 7 inches—reddish brown very cobbly fine sandy loam

Subsoil:
7 to 13 inches—yellowish red sandy clay loam

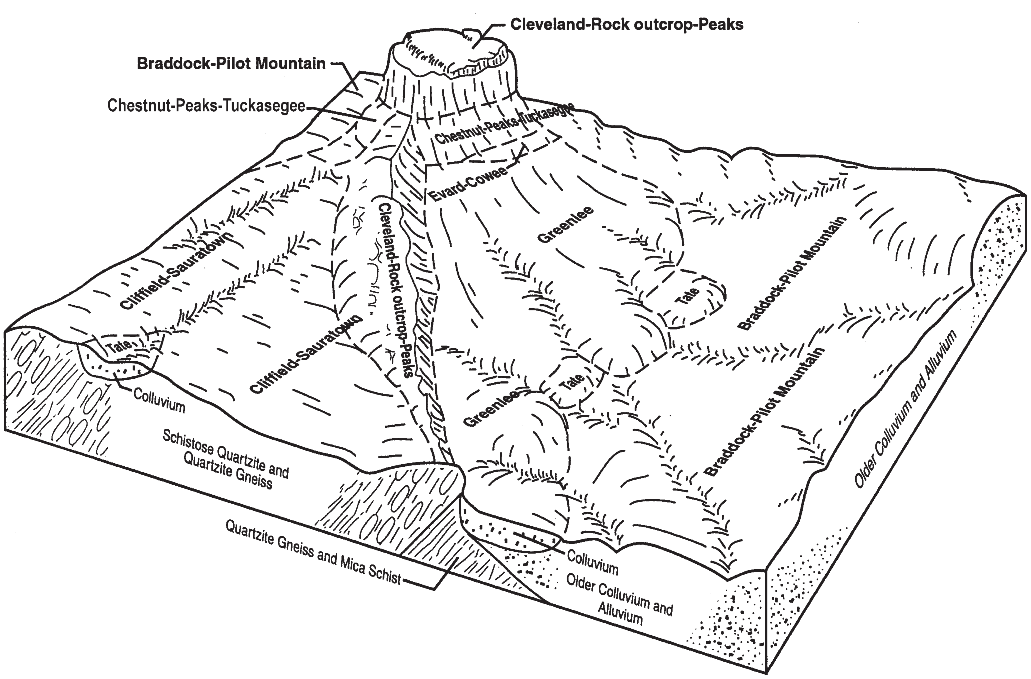

Figure 9.—Relationship of soils, landscape, and geology of Pilot Mountain.

13 to 36 inches—red cobbly clay
36 to 57 inches—red gravelly clay
57 to 63 inches—red cobbly clay loam
63 to 79 inches—red cobbly loam

Pilot Mountain
Surface layer:
0 to 2 inches—partially decomposed organic matter and hardwood litter
2 to 4 inches—dark brown extremely cobbly fine sandy loam
4 to 12 inches—dark yellowish brown very cobbly fine sandy loam

Subsoil:
12 to 16 inches—strong brown very cobbly fine sandy loam
16 to 22 inches—yellowish red very cobbly sandy clay loam that has reddish yellow mottles
22 to 30 inches—red very cobbly clay that has brownish yellow mottles
30 to 44 inches—red extremely cobbly fine sandy loam that has dark red and yellowish brown mottles

Underlying material:
44 to 79 inches—red and yellowish brown extremely stony fine sandy loam that has pockets of red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Moderate
Erosion class: None or slight
Slope class: Strongly sloping
Index surface runoff: Medium
Stoniness: Rubbly
Depth to bedrock: More than 60 inches to hard bedrock

Note: Braddock soils in this map unit have more rock fragments on the surface than is typical for the series.

Minor Components

Similar:
- Wintergreen soils, which have a thicker subsoil than the Braddock soil
- Unison soils, which have a yellower subsoil than the Braddock soil
- Tate soils, which have a yellower, less clayey subsoil than the Braddock soil
- Soils that are similar to the Pilot Mountain soil but have a clayey subsoil

Dissimilar:
- Soils that are similar to the Pilot Mountain soil but are moderately well drained

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility

Management measures and considerations:
- This map unit is severely limited for crop production because of the large amount of rocks on the surface. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited to pasture and hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is severely limited for the production of pasture and hay crops because of the large amount of rocks on the surface. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Equipment use, competition from undesirable plants, and seedling survival
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Taking care to avoid rocks when planting seedlings will increase survival rates.

Urban development
Suitability: Poorly suited
Management concerns: Large stones; Braddock—low strength, slow water movement, and high clay content
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BpD—Braddock-Pilot Mountain complex, 15 to 45 percent slopes, rubbly

Setting

Landscape: Pilot Mountain
Landform: Fans
Geomorphic component: Mountain bases
Shape and size of areas: Fan-shaped or irregular; 5 to 225 acres

Composition

Braddock and similar soils: About 86 percent
Pilot Mountain and similar soils: About 12 percent
Dissimilar soils: About 2 percent

Typical Profile

Braddock
Surface layer:
0 to 4 inches—very dark grayish brown extremely cobbly fine sandy loam
4 to 7 inches—reddish brown very cobbly fine sandy loam

Subsoil:
7 to 13 inches—yellowish red sandy clay loam
13 to 36 inches—red cobbly clay
36 to 57 inches—red gravelly clay
57 to 63 inches—red cobbly clay loam
63 to 79 inches—red cobbly loam

Pilot Mountain
Surface layer:
0 to 2 inches—partially decomposed organic matter and hardwood litter
2 to 4 inches—dark brown extremely cobbly fine sandy loam
4 to 12 inches—dark yellowish brown very cobbly fine sandy loam

Subsoil:
12 to 16 inches—strong brown very cobbly fine sandy loam
16 to 22 inches—yellowish red very cobbly sandy clay loam that has reddish yellow mottles
22 to 30 inches—red very cobbly clay that has brownish yellow mottles
30 to 44 inches—red extremely cobbly fine sandy loam that has dark red and yellowish brown mottles

Underlying material:
44 to 79 inches—red and yellowish brown extremely stony fine sandy loam that has pockets of red sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Moderate
Erosion class: None or slight
Slope class: Moderately steep or steep
Index surface runoff: Medium or high as the slope increases
Stoniness: Rubbly
Depth to bedrock: More than 60 inches to hard bedrock

Note: Braddock soils in this map unit have more rock fragments on the surface than is typical for the series.

Minor Components

Similar:
- Wintergreen soils, which have a thicker subsoil than the Braddock soil
- Unison soils, which have a yellower subsoil than the Braddock soil
- Tate soils, which have less clay in the subsoil and are yellower than the Braddock soil
- Soils that are similar to the Pilot Mountain soil but have a clayey subsoil

Dissimilar:
- Soils that are similar to the Pilot Mountain soil but are moderately well drained

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited

Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited to pasture and hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is severely limited for the production of pasture and hay crops because of the large amount of rocks on the surface. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Erodibility, equipment use, competition from undesirable plants, and seedling survival
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Taking care to avoid rocks when planting seedlings will increase survival rates.

Urban development
Suitability: Poorly suited
Management concerns: Large stones, erodibility, and slope; Braddock—low strength, slow water movement, and high clay content
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls in areas of the Braddock soil.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BrD—Brevard-Greenlee complex, 8 to 25 percent slopes, very bouldery

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothill valleys
Landform: Fans

Geomorphic component: Mountain bases and base slopes
Shape and size of areas: Elongated or irregular; 5 to 100 acres

Composition

Brevard and similar soils: About 73 percent
Greenlee and similar soils: About 26 percent
Dissimilar soils: About 1 percent

Typical Profile

Brevard
Surface layer:
0 to 4 inches—dark brown gravelly fine sandy loam
4 to 8 inches—brown gravelly fine sandy loam

Subsoil:
8 to 12 inches—strong brown gravelly sandy clay loam
12 to 17 inches—yellowish red gravelly sandy clay loam
17 to 33 inches—red gravelly sandy clay loam
33 to 48 inches—yellowish red gravelly sandy clay loam

Underlying material:
48 to 79 inches—yellowish red very gravelly fine sandy loam

Greenlee
Surface layer:
0 to 5 inches—dark gray extremely bouldery fine sandy loam
5 to 12 inches—brown extremely stony fine sandy loam

Subsoil:
12 to 34 inches—yellowish brown very stony fine sandy loam
34 to 79 inches—yellowish brown extremely stony fine sandy loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Brevard—moderately high; Greenlee—high
Available water capacity: Brevard—moderate or high; Greenlee—very low or low
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping or moderately steep
Index surface runoff: Brevard—medium; Greenlee—low
Stoniness: Brevard—very bouldery; Greenlee—extremely bouldery
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Soils like the Brevard soil that have a dark surface layer that is more than 7 inches thick
- Tate soils, which have a yellower subsoil than the Brevard soil
- Braddock soils, which have more clay in the subsoil than the Brevard soil
- Cullasaja soils, which have a dark surface layer that is more than 7 inches thick and are similar to the Greenlee soil
- Pilot Mountain soils, which generally have a more clayey subsoil than the Greenlee soil

Dissimilar:
- Soils that are like the Pilot Mountain soil, except they have a clayey subsoil
- Soils that are similar to the Brevard soil but have soft bedrock at a depth of 40 to 60 inches
- Soils that are similar to the Greenlee soil but have soft bedrock at a depth of 40 to 60 inches

Land Use

Dominant uses: Woodland

Cropland
Suitability: Brevard—poorly suited; Greenlee—unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Greenlee—tilth
Management measures and considerations:
- This map unit is difficult to manage for crop production because of the small size of individual areas; only the Brevard soil on the flatter slopes is tillable.
- Removing the larger stones and limiting the use of equipment to the larger, open areas help to improve the workability of these soils.

Pasture and hayland
Suitability: Brevard—moderately suited to pasture and poorly suited to hayland; Greenlee—poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing the larger stones or limiting the use of equipment to the larger, open areas may be needed.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use, erodibility, competition from undesirable plants, and seedling survival
Management measures and considerations:
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Taking care to avoid rocks when planting seedlings will increase survival rates in areas of the Greenlee soil.

Urban development
Suitability: Poorly suited
Management concerns: Erodibility, large stones, rock fragment content, soil fertility, and slope
Management measures and considerations:
- Installing distribution lines on the contour improves performance of septic tank absorption fields.

- Large stones and boulders may be encountered during excavation and should be removed.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

BrE—Brevard-Greenlee complex, 25 to 60 percent slopes, very bouldery

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothill valleys
Landform: Fans and fan remnants
Geomorphic component: Mountain bases and base slopes
Shape and size of areas: Elongated or irregular; 5 to 100 acres

Composition

Brevard and similar soils: About 66 percent
Greenlee and similar soils: About 30 percent
Dissimilar soils: About 4 percent

Typical Profile

Brevard
Surface layer:
0 to 4 inches—dark brown gravelly fine sandy loam
4 to 8 inches—brown gravelly fine sandy loam

Subsoil:
8 to 12 inches—strong brown gravelly sandy clay loam
12 to 17 inches—yellowish red gravelly sandy clay loam
17 to 33 inches—red gravelly sandy clay loam
33 to 48 inches—yellowish red gravelly sandy clay loam

Underlying material:
48 to 79 inches—yellowish red very gravelly fine sandy loam

Greenlee
Surface layer:
0 to 5 inches—dark gray extremely bouldery fine sandy loam
5 to 12 inches—brown extremely stony fine sandy loam

Subsoil:
12 to 34 inches—yellowish brown very stony fine sandy loam
34 to 79 inches—yellowish brown extremely stony fine sandy loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Brevard—moderately high; Greenlee—high
Available water capacity: Brevard—moderate or high; Greenlee—very low or low
Depth to seasonal high water table: More than 6.0 feet

Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep or very steep
Index surface runoff: Brevard—high; Greenlee—medium
Stoniness: Brevard—very bouldery; Greenlee—extremely bouldery
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Soils that are similar to the Brevard soil but have a dark surface layer that is more than 7 inches thick
- Tate soils, which have a yellower subsoil than the Brevard soil
- Evard soils, which formed in residuum on knobs and footslopes and are similar to the Brevard soil
- Cullasaja soils, which have a dark surface layer that is more than 7 inches thick and are similar to the Greenlee soil
- Pilot Mountain soils, which generally have a more clayey subsoil than the Greenlee soil

Dissimilar:
- Cowee soils, which have soft bedrock at a depth of 20 to 40 inches, formed in residuum, and are on knolls, nose slopes, and side slopes
- Sauratown soils, which have a yellow subsoil, are on knolls, nose slopes, and side slopes, and have hard bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Slope and equipment use
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Brevard—poorly suited to pasture and unsuited to hayland; Greenlee—unsuited to pasture and hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is severely limited for the production of pasture and hay crops because of the steepness of the slope and the large amount of rocks on the surface. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Equipment use, erodibility, competition from undesirable plants, and seedling survival
Management measures and considerations:
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.

- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Taking care to avoid rocks when planting seedlings will increase survival rates in areas of the Greenlee soil.

Urban development
Suitability: Poorly suited
Management concerns: Erodibility, large stones, rock fragment content, soil fertility, and slope
Management measures and considerations:
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Large stones and boulders may be encountered during excavation and should be removed.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CeD—Chestnut-Peaks complex, 8 to 25 percent slopes, very rocky

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops, mountain flanks, crests, head slopes, nose slopes, and side slopes
Shape and size of areas: Long and narrow or irregular; 5 to 80 acres

Composition

Chestnut and similar soils: About 67 percent
Peaks and similar soils: About 12 percent
Dissimilar soils: About 21 percent

Typical Profile

Chestnut
Surface layer:
0 to 3 inches—very dark grayish brown gravelly fine sandy loam

Subsoil:
3 to 8 inches—dark yellowish brown gravelly fine sandy loam that has yellowish brown and brown mottles
8 to 21 inches—light olive brown gravelly fine sandy loam that has yellowish brown mottles

Underlying material:
21 to 29 inches—light olive brown gravelly fine sandy loam that has yellowish brown mottles

Bedrock:
29 to 45 inches—soft felsic schist

45 to 79 inches—hard felsic schist

Peaks
Surface layer:
0 to 1 inch—very dark brown very gravelly fine sandy loam
1 to 4 inches—dark brown very gravelly fine sandy loam that has brown mottles

Subsoil:
4 to 10 inches—dark yellowish brown gravelly fine sandy loam
10 to 19 inches—dark yellowish brown very gravelly fine sandy loam

Underlying material:
19 to 27 inches—dark yellowish brown extremely gravelly fine sandy loam

Bedrock:
27 to 79 inches—hard, finely banded felsic gneiss

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Chestnut—well drained; Peaks—somewhat excessively drained
Saturated hydraulic conductivity class: High
Available water capacity: Very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping or moderately steep
Stoniness: Stony
Extent of rock outcrops: Rock outcrops cover about 3 percent of the soil surface
Index surface runoff: Very low
Depth to bedrock: Chestnut—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock; Peaks—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Unaka soils, which have a thicker dark surface layer and a coarse loamy subsoil and are similar to the Chestnut soil
- Pigeonroost soils, which have a more clayey subsoil than the Chestnut soil
- Cowee soils, which have a redder, more clayey subsoil than the Chestnut soil
- Widgett soils, which have a thicker dark surface layer and a coarse loamy subsoil and are similar to the Peaks soil
- Cliffield soils, which generally have a more clayey subsoil than the Peaks soil
- Ashe soils, which have fewer rock fragments in the subsoil than the Peaks soil

Dissimilar:
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches, are on resistant knobs, and are adjacent to rock outcrops
- Saluda soils which have soft bedrock at a depth of less than 20 inches and are on resistant knobs
- Edneytown soils, which have a more clayey subsoil than the major soils and have bedrock at a depth of more than 60 inches
- Edneyville soils, which have bedrock at a depth of more than 60 inches
- Chester soils, which have a more clayey subsoil than the major soils and have bedrock at a depth of 40 to 60 inches
- Sauratown soils, which have a more clayey subsoil than the major soils and have hard bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- This map unit is severely limited for crop production because of the steepness of the slope, the low available water capacity, and rockiness. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing the larger stones or limiting the use of equipment to the larger, open areas may be needed.
- These soils are difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, seedling survival, windthrow hazard, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour and, where possible, around rock outcrops helps to overcome the slope limitation.
- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, erodibility, seepage, poor filtering capacity, large stones, soil fertility, and slope
Management measures and considerations:
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.

- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CeE—Chestnut-Peaks complex, 25 to 45 percent slopes, very rocky

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops, mountain flanks, head slopes, side slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 30 acres

Composition

Chestnut and similar soils: About 47 percent
Peaks and similar soils: About 40 percent
Dissimilar soils: About 13 percent

Typical Profile

Chestnut
Surface layer:
0 to 3 inches—very dark grayish brown gravelly fine sandy loam

Subsoil:
3 to 8 inches—dark yellowish brown gravelly fine sandy loam that has yellowish brown and brown mottles
8 to 21 inches—light olive brown gravelly fine sandy loam that has yellowish brown mottles

Underlying material:
21 to 29 inches—light olive brown gravelly fine sandy loam that has yellowish brown mottles

Bedrock:
29 to 45 inches—soft felsic schist
45 to 79 inches—hard felsic schist

Peaks
Surface layer:
0 to 1 inch—very dark brown very gravelly fine sandy loam
1 to 4 inches—dark brown very gravelly fine sandy loam that has brown mottles

Subsoil:
4 to 10 inches—dark yellowish brown gravelly fine sandy loam
10 to 19 inches—dark yellowish brown very gravelly fine sandy loam

Underlying material:
19 to 27 inches—dark yellowish brown extremely gravelly fine sandy loam

Bedrock:
27 to 79 inches—hard, finely banded felsic gneiss

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Chestnut—well drained; Peaks—somewhat excessively drained

Saturated hydraulic conductivity class: High
Available water capacity: Very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Stony
Extent of rock outcrops: Rock outcrops cover about 3 percent of the soil surface
Index surface runoff: Low
Depth to bedrock: Chestnut—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock; Peaks—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Unaka soils, which have a thicker dark surface layer and a coarse loamy subsoil and are similar to the Chestnut soil
- Pigeonroost soils, which have a more clayey subsoil than the Chestnut soil
- Cowee soils, which have a redder, more clayey subsoil than the Chestnut soil
- Widgett soils, which have a thicker dark surface layer and a coarse loamy subsoil and are similar to the Peaks soil
- Cliffield soils, which generally have a more clayey subsoil than the Peaks soil
- Ashe soils, which have fewer rock fragments in the subsoil than the Peaks soil

Dissimilar:
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches, are on resistant knobs, and are adjacent to rock outcrops
- Saluda soils, which have soft bedrock at a depth of less than 20 inches and are on resistant knobs
- Edneytown soils, which have a more clayey subsoil than the major soils and have bedrock at a depth of more than 60 inches
- Edneyville soils, which have bedrock at a depth of more than 60 inches
- Chester soils, which have a more clayey subsoil than the major soils and have bedrock at a depth of 40 to 60 inches
- Sauratown soils, which have a more clayey subsoil than the Chestnut soil and have hard bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Applying lime, fertilizer, seed, and herbicides by hand helps to overcome the limitations for equipment use in the steeper areas.
- Removing the larger stones or limiting the use of equipment to the larger, open areas may be needed.

- These soils are difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, seedling survival, windthrow hazard, and competition from undesirable plants

Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour and, where possible, around rock outcrops helps to overcome the slope limitation.
- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Poorly suited

Management concerns: Depth to bedrock, erodibility, seepage, poor filtering capacity, large stones, soil fertility, and slope

Management measures and considerations:

- This map unit is difficult to manage for septic tank absorption fields because the dominant soils are moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CfF—Chestnut-Peaks-Tuckasegee complex, 45 to 90 percent slopes, very rocky

Setting

Landscape: Blue Ridge mountains, Pilot Mountain, and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountain flanks, head slopes, and side slopes
Shape and size of areas: Long and narrow or irregular; 10 to 250 acres

Composition

Chestnut and similar soils: About 43 percent
Peaks and similar soils: About 25 percent
Tuckasegee and similar soils: About 10 percent
Dissimilar soils: About 22 percent

Typical Profile

Chestnut

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

Subsoil:
3 to 8 inches—dark yellowish brown gravelly fine sandy loam that has yellowish brown and brown mottles
8 to 21 inches—light olive brown gravelly fine sandy loam that has yellowish brown mottles

Underlying material:
21 to 29 inches—light olive brown gravelly fine sandy loam that has yellowish brown mottles

Bedrock:
29 to 45 inches—soft felsic schist
45 to 79 inches—hard felsic schist

Peaks

Surface layer:
0 to 1 inch—very dark brown very gravelly fine sandy loam
1 to 4 inches—dark brown very gravelly fine sandy loam that has brown mottles

Subsoil:
4 to 10 inches—dark yellowish brown gravelly fine sandy loam
10 to 19 inches—dark yellowish brown very gravelly fine sandy loam

Underlying material:
19 to 27 inches—dark yellowish brown extremely gravelly fine sandy loam

Bedrock:
27 to 79 inches—hard, finely banded felsic gneiss

Tuckasegee

Surface layer:
0 to 8 inches—very dark brown gravelly loam
8 to 13 inches—very dark grayish brown gravelly loam

Subsoil:
13 to 28 inches—brown gravelly loam
28 to 47 inches—strong brown gravelly loam
47 to 79 inches—strong brown very gravelly loam

Soil Properties and Qualities

Depth class: Chestnut and Peaks—moderately deep; Tuckasegee—very deep
Agricultural drainage class: Chestnut and Tuckasegee—well drained; Peaks—somewhat excessively drained
Saturated hydraulic conductivity class: High
Available water capacity: Chestnut and Peaks—very low or low; Tuckasegee—moderate or high
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Very steep or extremely steep
Stoniness: Stony
Extent of rock outcrops: Rock outcrops cover about 3 percent of the soil surface

Index surface runoff: Low
Depth to bedrock: Chestnut—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock; Peaks—20 to 40 inches to hard bedrock; Tuckasegee—more than 60 inches to hard bedrock

Minor Components

Similar:
- Unaka soils, which have a thicker dark surface layer and a coarse loamy subsoil and are similar to the Chestnut soil
- Pigeonroost soils, which have a more clayey subsoil than the Chestnut soil
- Cowee soils, which have a redder, more clayey subsoil than the Chestnut soil
- Widgett soils, which have a thicker dark surface layer than the Peaks soil and have a coarse loamy subsoil
- Cliffield soils, which generally have a more clayey subsoil than the Peaks soil
- Ashe soils, which have fewer rock fragments in the subsoil than the Peaks soil
- Tusquitee soils, which have a thinner dark surface layer than the Tuckasegee soil

Dissimilar:
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches, are on resistant knobs, and are adjacent to rock outcrops
- Sauratown soils, which have a slightly more clayey subsoil than the Chestnut soil and have hard bedrock at a depth of 20 to 40 inches
- Edneytown soils, which have a more clayey subsoil than the major soils and have bedrock at a depth of more than 60 inches
- Edneyville soils, which have bedrock at a depth of more than 60 inches
- Chester soils, which have a more clayey subsoil than the major soils and have bedrock at a depth of 40 to 60 inches
- Greenlee soils, which lack the thick, dark surface layer of the Tuckasegee soil, have more than 35 percent rock fragments in the subsoil, are on footslopes, and are just below rock outcrops

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting the production of pasture and hay crops. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Erodibility, equipment use, seedling survival, windthrow hazard, and competition from undesirable plants
Management measures and considerations:
- Using cable logging methods helps to minimize the need for road and trail construction in areas where the slope is greater than 50 percent.
- Establishing permanent plant cover on roads and landings following logging operations reduces the hazard of erosion and helps to control siltation of streams.

- Productivity may be limited because of the moderately deep rooting depth of these soils.
- The best method for reforesting areas of this soil is to manage for the natural regeneration of hardwoods.

Urban development
Suitability: Unsuited
Management concerns: Slope, depth to bedrock, erodibility, seepage, poor filtering capacity, large stones, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting urban development. If possible, another site should be selected on better suited soils.

ChE—Cleveland-Rock outcrop-Peaks complex, windswept, 10 to 45 percent slopes, very bouldery

Setting

Landscape: Blue Ridge mountains (fig. 10) and Pilot Mountain
Landform: Mountains and spurs
Geomorphic component: Mountaintops and mountain flanks; Rock outcrop—free faces
Shape and size of areas: Long and narrow or irregular; 5 to 100 acres

Composition

Cleveland and similar soils: About 33 percent
Rock outcrop: About 33 percent

Figure 10.—Chestnut oaks and red maples on Fishers Peak in an area of Cleveland-Rock outcrop-Peaks complex, windswept, 45 to 90 percent slopes, extremely bouldery. Timber quality is poor in areas of this soil because of ice and wind damage.

Peaks and similar soils: About 23 percent
Dissimilar soils: About 11 percent

Typical Profile

Cleveland

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

Subsoil:
4 to 12 inches—dark yellowish brown gravelly fine sandy loam
12 to 15 inches—dark yellowish brown very gravelly fine sandy loam

Bedrock:
15 to 79 inches—hard felsic, finely banded gneiss

Rock outcrop

Mostly felsic, finely banded gneiss strikes northeast-southwest and dips about 80 degrees to the southeast along the Blue Ridge escarpment. Mostly metaquartzite strikes northeast-southwest and dips about 20 degrees to the northwest on Pilot Mountain.

Peaks

Surface layer:
0 to 1 inch—very dark brown very gravelly fine sandy loam
1 to 4 inches—dark brown very gravelly fine sandy loam that has brown mottles

Subsoil:
4 to 10 inches—dark yellowish brown gravelly fine sandy loam
10 to 19 inches—dark yellowish brown very gravelly fine sandy loam

Underlying material:
19 to 27 inches—dark yellowish brown extremely gravelly fine sandy loam

Bedrock:
27 to 79 inches—hard felsic, finely banded gneiss

Soil Properties and Qualities

Depth class: Cleveland—shallow; Peaks—moderately deep
Agricultural drainage class: Somewhat excessively drained
Saturated hydraulic conductivity class: High
Available water capacity: Cleveland—very low; Peaks—very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping to steep
Stoniness: Very bouldery
Index surface runoff: Cleveland and Rock outcrop—very high; Peaks—high
Depth to bedrock: Cleveland—10 to 20 inches to hard bedrock; Peaks—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Cliffield soils, which generally have a more clayey subsoil than the Peaks soil and are in the less sloping areas

Dissimilar:
- Chestnut soils, which have soft bedrock at a depth of 20 to 40 inches
- Ashe soils, which have hard bedrock at a depth of 20 to 40 inches and have less than 35 percent rock fragments in the subsoil

- Soils that are like the Edneyville soil, except they have bedrock at a depth of 40 to 60 inches
- Soils that are similar to the Cleveland soil but have more than 35 percent rock fragments in the subsoil

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting the production of pasture and hay crops. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Wind and ice damage, erodibility, equipment use, seedling survival, and windthrow hazard
Management measures and considerations:
- This map unit has severe limitations affecting timber production. If possible, another site should be selected on better suited soils.

Urban development
Suitability: Poorly suited
Management concerns: Slope, depth to bedrock, erodibility, seepage, poor filtering capacity, large stones, and soil fertility
Management measures and considerations:
- This map unit is severely limited for dwellings with basements and shallow excavations because of shallow depth to bedrock. If possible, another site should be selected on better suited soils.
- This map unit has severe limitations affecting septic tank absorption fields. The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CkF—Cleveland-Rock outcrop-Peaks complex, windswept, 45 to 90 percent slopes, extremely bouldery

Setting

Landscape: Blue Ridge mountains, Pilot Mountain, and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountain flanks, head slopes, side slopes, and nose slopes; Rock outcrop—free faces
Shape and size of areas: Long and narrow or irregular; 10 to 250 acres

Composition

Cleveland and similar soils: About 33 percent
Rock outcrop: About 30 percent

Peaks and similar soils: About 17 percent
Dissimilar soils: About 20 percent

Typical Profile

Cleveland

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

Subsoil:
4 to 12 inches—dark yellowish brown gravelly fine sandy loam
12 to 15 inches—dark yellowish brown very gravelly fine sandy loam

Bedrock:
15 to 79 inches—hard felsic, finely banded gneiss

Rock outcrop

Mostly felsic gneiss strikes northeast-southwest and dips about 80 degrees to the southeast along the Blue Ridge escarpment. Mostly metaquartzite strikes northeast-southwest and dips about 20 degrees to the northwest on Pilot Mountain.

Peaks

Surface layer:
0 to 1 inch—very dark brown very gravelly fine sandy loam
1 to 4 inches—dark brown very gravelly fine sandy loam that has brown mottles

Subsoil:
4 to 10 inches—dark yellowish brown gravelly fine sandy loam
10 to 19 inches—dark yellowish brown very gravelly fine sandy loam

Underlying material:
19 to 27 inches—dark yellowish brown extremely gravelly fine sandy loam

Bedrock:
27 to 79 inches—hard felsic, finely banded gneiss

Soil Properties and Qualities

Depth class: Cleveland—shallow; Peaks—moderately deep
Agricultural drainage class: Somewhat excessively drained
Saturated hydraulic conductivity class: High
Available water capacity: Cleveland—very low; Peaks—very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Very steep or extremely steep
Stoniness: Extremely bouldery
Index surface runoff: Cleveland and Rock outcrop—very high; Peaks—high
Depth to bedrock: Cleveland—10 to 20 inches to hard bedrock; Peaks—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Cliffield soils, which generally have a more clayey subsoil than the Peaks soil and are in the less sloping areas

Dissimilar:
- Chestnut soils, which have soft bedrock at a depth of 20 to 40 inches
- Cullasaja soils, which have a dark surface layer, have more than 35 percent rock fragments in the subsoil, and are in concave areas

- Ashe soils, which have hard bedrock at a depth of 20 to 40 inches and have less than 35 percent rock fragments in the subsoil
- Soils that are similar to the Cleveland soil but have more than 35 percent rock fragments in the subsoil

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting the production of pasture and hay crops. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Wind and ice damage, erodibility, equipment use, seedling survival, and windthrow hazard
Management measures and considerations:
- This map unit has severe limitations affecting timber production. If possible, another site should be selected on better suited soils.

Urban development
Suitability: Unsuited
Management concerns: Slope, depth to bedrock, erodibility, seepage, poor filtering capacity, large stones, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting urban development. If possible, another site should be selected on better suited soils.

CmD—Cliffield-Cowee complex, 8 to 25 percent slopes, very stony

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops, crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 100 acres

Composition

Cliffield and similar soils: About 65 percent
Cowee and similar soils: About 23 percent
Dissimilar soils: About 12 percent

Typical Profile

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

Subsoil:
3 to 6 inches—brown very gravelly loam
6 to 15 inches—yellowish red very gravelly sandy clay loam
15 to 23 inches—yellowish red extremely cobbly sandy clay loam

Bedrock:
23 to 79 inches—variegated, hard schist

Cowee
Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red sandy clay loam

Bedrock:
34 to 79 inches—variegated, soft gneiss

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Cliffield—very low; Cowee—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping or moderately steep
Stoniness: Very stony
Index surface runoff: Medium or high as the slope increases
Depth to bedrock: Cliffield—20 to 40 inches to hard bedrock; Cowee—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Pigeonroost soils, which have a yellower subsoil than the Cowee soil

Dissimilar:
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches
- Sauratown soils, which have hard bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, rooting depth, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland

Management concerns: Erodibility, equipment use, droughtiness, rooting depth, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- These soils are difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, windthrow hazard, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, slope, erodibility, large stones, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the dominant soils are moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CnE—Cliffield-Cowee complex, 25 to 45 percent slopes, very rocky

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills
Landform: Mountains, spurs, and high hills

Geomorphic component: Mountaintops, mountain flanks, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 200 acres

Composition

Cliffield and similar soils: About 63 percent
Cowee and similar soils: About 17 percent
Dissimilar soils: About 20 percent

Typical Profile

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

Subsoil:
3 to 6 inches—brown very gravelly loam
6 to 15 inches—yellowish red very gravelly sandy clay loam
15 to 23 inches—yellowish red extremely cobbly sandy clay loam

Bedrock:
23 to 79 inches—variegated, hard schist

Cowee
Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red sandy clay loam

Bedrock:
34 to 79 inches—variegated, soft gneiss

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Cliffield—very low; Cowee—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep or very steep
Stoniness: Very stony
Extent of rock outcrops: Rock outcrops cover about 3 percent of the soil surface
Index surface runoff: High
Depth to bedrock: Cliffield—20 to 40 inches to hard bedrock; Cowee—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Peaks soils, which generally have a less clayey subsoil than the Cliffield soil
- Pigeonroost soils, which have a yellower subsoil than the Cowee soil

Dissimilar:
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches
- Saluda soils, which have soft bedrock at a depth of less than 20 inches
- Evard soils, which have bedrock at a depth of more than 60 inches
- Soils that are similar to the Cowee soil but have soft bedrock at a depth of 40 to 60 inches
- Areas of rock outcrop

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, rooting depth, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, droughtiness, rooting depth, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- These soils are difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, windthrow hazard, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour and, where possible, around rock outcrops helps to overcome the slope limitation.
- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, slope, erodibility, large stones, and soil fertility

Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the dominant soils are moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CoD—Cliffield-Sauratown complex, 8 to 25 percent slopes, rubbly

Setting

Landscape: Pilot Mountain
Landform: Mountains
Geomorphic component: Mountaintops and mountain flanks
Shape and size of areas: Irregular; 5 to 60 acres

Composition

Cliffield and similar soils: About 50 percent
Sauratown and similar soils: About 40 percent
Dissimilar soils: About 10 percent

Typical Profile

Cliffield
Surface layer:
0 to 3 inches—very dark grayish brown extremely stony fine sandy loam
3 to 7 inches—brown extremely stony fine sandy loam

Subsoil:
7 to 27 inches—dark yellowish brown very cobbly sandy clay loam

Bedrock:
27 to 79 inches—hard metaquartzite

Sauratown
Surface layer:
0 to 3 inches—very dark grayish brown extremely stony fine sandy loam
3 to 9 inches—yellowish brown extremely stony fine sandy loam

Subsoil:
9 to 12 inches—yellowish brown stony fine sandy loam
12 to 26 inches—dark yellowish brown cobbly sandy clay loam

Bedrock:
26 to 29 inches—soft metaquartzite
29 to 79 inches—hard metaquartzite

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high

Available water capacity: Cliffield—very low; Sauratown—very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping or moderately steep
Stoniness: Rubbly
Index surface runoff: High
Depth to bedrock: 20 to 40 inches to hard bedrock

Minor Components

Similar:
- Ashe soils, which have a less clayey subsoil than the Sauratown soil

Dissimilar:
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches
- Soils that are like the Cleveland soil, except they have more than 35 percent rock fragments in the subsoil
- Pigeonroost soils, which have soft bedrock at a depth of 20 to 40 inches
- Soils that are similar to the Sauratown soil but have bedrock at a depth of 40 to 60 inches

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, rooting depth, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, rooting depth, and soil fertility
Management measures and considerations:
- This map unit is severely limited for the production of pasture and hay crops because of the large amount of surface stones and boulders. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Erodibility, equipment use, windthrow hazard, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, slope, erodibility, large stones, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the dominant soils are moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CoE—Cliffield-Sauratown complex, 25 to 45 percent slopes, rubbly

Setting

Landscape: Pilot Mountain
Landform: Mountains
Geomorphic component: Mountain flanks
Shape and size of areas: Irregular; 10 to 300 acres

Composition

Cliffield and similar soils: About 65 percent
Sauratown and similar soils: About 30 percent
Dissimilar soils: About 5 percent

Typical Profile

Cliffield
Surface layer:
0 to 3 inches—very dark grayish brown extremely stony fine sandy loam
3 to 7 inches—brown extremely stony fine sandy loam

Subsoil:
7 to 27 inches—dark yellowish brown very cobbly sandy clay loam

Bedrock:
27 to 79 inches—hard metaquartzite

Sauratown
Surface layer:
0 to 3 inches—very dark grayish brown extremely stony fine sandy loam
3 to 9 inches—yellowish brown extremely stony fine sandy loam

Subsoil:
9 to 12 inches—yellowish brown stony fine sandy loam
12 to 26 inches—dark yellowish brown cobbly sandy clay loam

Bedrock:
26 to 29 inches—soft metaquartzite
29 to 79 inches—hard metaquartzite

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Cliffield—very low; Sauratown—very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Rubbly
Index surface runoff: High
Depth to bedrock: 20 to 40 inches to hard bedrock

Minor Components

Similar:
- Peaks soils, which have a less clayey subsoil than the Cliffield soil
- Ashe soils, which have a less clayey subsoil than the Sauratown soil

Dissimilar:
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches
- Soils that are like the Cleveland soil, except they have more than 35 percent rock fragments in the subsoil

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, rooting depth, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, droughtiness, rooting depth, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting the production of pasture and hay crops. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Erodibility, equipment use, windthrow hazard, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Taking care to avoid rocks when planting seedlings will increase survival rates.

- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, slope, erodibility, large stones, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the dominant soils are moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CrB2—Clifford sandy clay loam, 2 to 8 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands
Landform: Hills
Geomorphic component: Interfluves
Shape and size of areas: Elongated or irregular; 5 to 500 acres

Composition

Clifford and similar soils: About 88 percent
Dissimilar soils: About 12 percent

Typical Profile

Surface layer:
0 to 6 inches—yellowish red sandy clay loam

Subsoil:
6 to 41 inches—red clay
41 to 52 inches—red clay

Underlying material:
52 to 79 inches—red clay loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Flooding: None
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Gently sloping
Index surface runoff: Low
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Fairview soils, which have a thinner subsoil than the Clifford soil

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Moderately suited
Management concerns: Erodibility and soil fertility
Management measures and considerations:
- Resource management systems that include diversions, stripcropping, contour tillage, no-till farming (fig. 11), and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Management concerns: Erodibility and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.

Figure 11.—No-till soybeans double-cropped in wheat stubble in an area of Clifford sandy clay loam, 2 to 8 percent slopes, moderately eroded.

- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Moderately suited
Management concerns: Low strength, slow water movement, erodibility, and high clay content
Management measures and considerations:
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.

CsA—Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded

Setting

Landscape: Piedmont and Blue Ridge foothill valleys
Landform: Flood plains
Geomorphic component: Talfs, rises, and dips
Shape and size of areas: Long and narrow bands that have irregular widths; 5 to 500 acres

Composition

Colvard and similar soils: About 49 percent
Suches and similar soils: About 39 percent
Dissimilar soils: About 12 percent

Typical Profile

Colvard
Surface layer:
0 to 10 inches—dark yellowish brown fine sandy loam

Underlying material:
10 to 15 inches—strong brown fine sandy loam
15 to 50 inches—brown fine sandy loam
50 to 79 inches—brown gravelly loamy fine sand

Suches
Surface layer:
0 to 8 inches—brown loam
8 to 12 inches—brown loam that has pockets of strong brown clay loam

Subsoil:
12 to 33 inches—strong brown clay loam
33 to 41 inches—brown and strong brown loam that has grayish brown iron depletions
41 to 54 inches—dark yellowish brown loam

Underlying material:
54 to 79 inches—dark yellowish brown loam that has yellowish red masses of oxidized iron

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Colvard—high; Suches—moderately high
Available water capacity: Colvard—low or moderate; Suches—moderate or high
Depth to seasonal high water table: Colvard—4.0 to 6.0 feet; Suches—2.5 to 4.0 feet
Flooding: Occasional
Shrink-swell potential: Low
Slope class: Nearly level
Index surface runoff: Colvard—very low; Suches—low
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Soils that are similar to the Suches soil but have very little structure below the surface layer and generally are adjacent to or near a stream

Dissimilar:
- Braddock soils, which have a clayey subsoil and are on toeslopes and small terraces
- State soils, which have a loamy subsoil and are on toeslopes and small terraces
- The moderately well drained Dillard soils on toeslopes and small terraces
- The somewhat poorly drained Arkaqua soils in the slightly lower areas
- The poorly drained Hatboro soils in depressions
- Biltmore soils, which are on natural levees adjacent to streams and on small narrow ridges
- French soils, which have a very gravelly layer at a depth of less than 40 inches

Land Use

Dominant uses: Cropland (fig. 12), pasture, hayland, woodland, and urban land

Cropland
Suitability: Well suited, if protected from flooding or not occasionally flooded during the growing season (fig. 13)
Management concerns: Flooding
Management measures and considerations:
- Harvesting row crops as soon as possible can reduce the risk of damage from flooding.

Pasture and hayland
Suitability: Well suited, if protected from flooding or not occasionally flooded during the growing season
Management concerns: Flooding and soil fertility
Management measures and considerations:
- Although most flooding occurs during winter, damage to livestock and hay crops may occur at any time of the year.

Figure 12.—Tobacco growing in an area of Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded.

- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Damage to equipment
Management measures and considerations:
- Harvesting timber during the summer reduces the risk of damage from flooding.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Flooding
Management measures and considerations:
- This map unit has severe limitations that affect septic tank absorption fields. The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CwC—Cowee gravelly loam, 8 to 15 percent slopes, stony

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops and crests
Shape and size of areas: Long and narrow bands; 5 to 150 acres

Figure 13.—Cabbage growing in an area of Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded.

Composition

Cowee and similar soils: About 78 percent
Dissimilar soils: About 22 percent

Typical Profile

Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red sandy clay loam

Bedrock:
34 to 79 inches—soft felsic gneiss

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Woolwine soils, which have a clayey subsoil
- Pigeonroost soils, which have a yellower subsoil than the Cowee soil

Dissimilar:
- Saluda soils, which have soft bedrock at a depth of less than 20 inches
- Evard soils, which have bedrock at a depth of more than 60 inches
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches
- Soils that are similar to the Cowee soil but have soft bedrock at a depth of 40 to 60 inches
- Cliffield soils, which have more than 35 percent rock fragments in the subsoil and have hard bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility, equipment use, soil fertility, and rooting depth
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the soil.

Pasture and hayland
Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.

- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Windthrow hazard
Management measures and considerations:
- Productivity may be limited because of the moderately deep rooting depth of the soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, erodibility, large stones, soil fertility, and slope
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the soil is moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CwD—Cowee gravelly loam, 15 to 25 percent slopes, stony

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops, mountain flanks, crests, head slopes, side slopes, and nose slopes
Shape and size of areas: Long and narrow bands or irregular; 5 to 200 acres

Composition

Cowee and similar soils: About 78 percent
Dissimilar soils: About 22 percent

Typical Profile

Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red sandy clay loam

Bedrock:
34 to 79 inches—soft felsic gneiss

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Moderately steep
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Pigeonroost soils, which have a yellower subsoil than the Cowee soil
- Woolwine soils, which have a clayey subsoil
- Chestnut soils, which have a yellower, less clayey subsoil than the Cowee soil

Dissimilar:
- Cliffield soils, which have more than 35 percent rock fragments in the subsoil and have hard bedrock at a depth of 20 to 40 inches
- Westfield soils, which have a more clayey subsoil than the Cowee soil and have bedrock at a depth of 40 to 60 inches
- Evard soils, which have bedrock at a depth of more than 60 inches
- Edneytown soils, which have a yellow subsoil and have bedrock at a depth of more than 60 inches
- Soils that are similar to the Cowee soil but have bedrock at a depth of 40 to 60 inches
- Saluda soils, which have soft bedrock at a depth of less than 20 inches
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, soil fertility, and rooting depth
Management measures and considerations:
- This map unit is severely limited for crop production because of the steepness of the slope, the moderately deep rooting depth, and the large stones on the surface. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.

- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, windthrow hazard, and competition from undesirable plants

Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of the soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Poorly suited

Management concerns: Depth to bedrock, erodibility, large stones, soil fertility, and slope

Management measures and considerations:

- This map unit is difficult to manage for septic tank absorption fields because the soil is moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CwE—Cowee gravelly loam, 25 to 45 percent slopes, stony

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills

Landform: Mountains, spurs, and high hills

Geomorphic component: Mountaintops, mountain flanks, side slopes, head slopes, and nose slopes

Shape and size of areas: Long and narrow or irregular; 5 to 1,200 acres

Composition

Cowee and similar soils: About 80 percent

Dissimilar soils: About 20 percent

Typical Profile

Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red clay loam

Bedrock:
34 to 79 inches—soft felsic gneiss

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Pigeonroost soils, which have a yellower subsoil than the Cowee soil
- Woolwine soils, which have a clayey subsoil
- Chestnut soils, which have yellower, less clayey subsoil than the Cowee soil

Dissimilar:
- Evard soils, which have bedrock at a depth of more than 60 inches
- Saluda soils, which have soft bedrock at a depth of less than 20 inches
- Peaks soils, which have more than 35 percent rock fragments in the subsoil
- Soils that are similar to the Cowee soil but have bedrock at a depth of 40 to 60 inches
- Cliffield soils, which have more than 35 percent rock fragments in the subsoil and have hard bedrock at a depth of 20 to 40 inches
- Arkaqua soils, which are somewhat poorly drained and formed in recent alluvium along small drainageways

Land Use

Dominant uses: Woodland and pasture

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, soil fertility, and rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland

Suitability: Poorly suited to pasture and unsuited to hayland

Management concerns: Erodibility, equipment use, rooting depth, and soil fertility

Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture during years of low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, windthrow hazard, and competition from undesirable plants

Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of the soil.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Poorly suited

Management concerns: Depth to bedrock, erodibility, large stones, soil fertility, and slope

Management measures and considerations:

- This map unit is difficult to manage for septic tank absorption fields because the soil is moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

CxF—Cowee-Saluda-Evard complex, 45 to 90 percent slopes, rocky

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills

Landform: Mountains, spurs, and high hills

Geomorphic component: Mountain flanks, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 10 to 100 acres

Composition

Cowee and similar soils: About 53 percent
Saluda and similar soils: About 16 percent
Evard and similar soils: About 16 percent
Dissimilar soils: About 15 percent

Typical Profile

Cowee
Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red sandy clay loam

Bedrock:
34 to 79 inches—soft felsic gneiss

Saluda
Surface layer:
0 to 4 inches—brown gravelly loam

Subsoil:
4 to 8 inches—dark yellowish brown gravelly loam
8 to 14 inches—strong brown gravelly clay loam
14 to 18 inches—strong brown gravelly sandy clay loam

Bedrock:
18 to 79 inches—soft felsic schist

Evard
Surface layer:
0 to 5 inches—dark yellowish brown gravelly fine sandy loam
5 to 8 inches—yellowish brown gravelly fine sandy loam

Subsoil:
8 to 13 inches—yellowish red sandy clay loam
13 to 29 inches—red clay loam
29 to 35 inches—yellowish red sandy clay loam

Underlying material:
35 to 45 inches—strong brown fine sandy loam
45 to 55 inches—yellowish red gravelly fine sandy loam
55 to 79 inches—yellowish brown gravelly loamy fine sand

Soil Properties and Qualities

Depth class: Cowee—moderately deep; Saluda—shallow; Evard—very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Cowee—low or moderate; Evard—moderate or high; Saluda—very low

Shrink-swell potential: Low
Erosion class: Slight
Slope class: Very steep or extremely steep
Stoniness: Stony
Extent of rock outcrops: Rock outcrops cover about 1 percent of the soil surface
Index surface runoff: Cowee and Evard—high; Saluda—very high
Depth to bedrock: Cowee—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock; Saluda—10 to 20 inches to soft bedrock and more than 40 inches to hard bedrock; Evard—more than 60 inches to hard bedrock

Minor Components

Similar:
- Pigeonroost soils, which have a yellower subsoil than the Cowee soil
- Chestnut soils, which have a yellower, less clayey subsoil than the Cowee soil
- Woolwine soils, which have a more clayey subsoil than the Cowee soil
- Cleveland soils, which generally have less clay in the subsoil than the Saluda soil and have hard bedrock at a depth of less than 20 inches
- Edneytown soils, which have a yellower subsoil than the Evard soil
- Edneyville soils, which have a yellower, less clayey subsoil than the Evard soil
- Tuckasegee soils, which have a thicker, darker upper horizon than the Evard soil and formed in colluvium

Dissimilar:
- Cliffield soils, which have more rock fragments in the subsoil than the Cowee soil and have hard bedrock at a depth of 20 to 40 inches
- Peaks soils, which have more rock fragments and less clay in the subsoil than the Cowee soil and have hard bedrock at a depth of 20 to 40 inches
- Ashe soils, which have a yellower, less clayey subsoil than the Cowee soil and have hard bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Saluda—droughtiness
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Saluda—droughtiness
Management measures and considerations:
- This map unit has severe limitations affecting the production of pasture and hay crops. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants; Cowee and Saluda—windthrow hazard
Management measures and considerations:
- Cable logging methods help to minimize road and trail construction, especially in areas where the slope is greater than about 50 percent.

- Establishing permanent plant cover on roads and landings following logging operations reduces the hazard of erosion and helps to control siltation of streams.
- Productivity may be limited because of the moderately deep rooting depth of the Cowee soil and the shallow rooting depth of the Saluda soil.
- The best method for reforesting areas of this soil is to manage for the natural regeneration of hardwoods.

Urban development
Suitability: Unsuited
Management concerns: Slope, erodibility, large stones, and soil fertility; Cowee and Saluda—depth to bedrock
Management measures and considerations:
- This map unit has severe limitations affecting urban development. If possible, another site should be selected on better suited soils.

DAM—Dam

This map unit consists of water impoundment structures made of compacted earthen material. No interpretations are given for this map unit.

DeF—Devotion-Rhodhiss-Bannertown complex, 40 to 95 percent slopes, very rocky

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow; 5 to 100 acres

Composition

Devotion and similar soils: About 32 percent
Rhodhiss and similar soils: About 26 percent
Bannertown and similar soils: About 21 percent
Dissimilar soils: About 21 percent

Typical Profile

Devotion
Surface layer:
0 to 7 inches—dark yellowish brown gravelly fine sandy loam

Subsoil:
7 to 20 inches—strong brown gravelly fine sandy loam

Underlying material:
20 to 24 inches—strong brown gravelly fine sandy loam saprolite

Bedrock:
24 to 45 inches—soft quartz mica gneiss
45 to 79 inches—hard quartz mica gneiss

Rhodhiss
Surface layer:
2 to 0 inches—partially decomposed leaf litter and root mat
0 to 4 inches—brown gravelly fine sandy loam

Subsoil:
4 to 8 inches—strong brown loam
8 to 14 inches—yellowish red loam
14 to 36 inches—red clay loam
36 to 43 inches—red loam

Underlying material:
43 to 51 inches—yellowish red loam that has red mottles
51 to 79 inches—reddish yellow fine sandy loam

Bannertown
Surface layer:
0 to 4 inches—dark brown gravelly fine sandy loam

Subsoil:
4 to 8 inches—brown gravelly fine sandy loam
8 to 14 inches—yellowish brown gravelly fine sandy loam
14 to 19 inches—light yellowish brown gravelly fine sandy loam

Underlying material:
19 to 27 inches—light yellowish brown gravelly fine sandy loam saprolite

Bedrock:
27 to 30 inches—soft quartz mica gneiss
30 to 79 inches—hard quartz mica gneiss

Soil Properties and Qualities

Depth class: Devotion and Bannertown—moderately deep; Rhodhiss—very deep
Agricultural drainage class: Devotion and Bannertown—somewhat excessively drained; Rhodhiss—well drained
Saturated hydraulic conductivity class: Devotion and Bannertown—high; Rhodhiss—moderately high
Available water capacity: Devotion and Bannertown—very low or low; Rhodhiss—moderate or high
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Very steep or extremely steep
Extent of rock outcrops: Rock outcrops cover about 8 percent of the soil surface
Index surface runoff: High
Depth to bedrock: Devotion—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock; Rhodhiss—more than 60 inches to hard bedrock; Bannertown—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Stott Knob soils, which have more clay in the subsoil than the Devotion soil
- Soils that are similar to the Rhodhiss soil but have a less clayey subsoil
- Soils that are similar to the Bannertown soil but have a more clayey subsoil
- Brevard soils, which formed in colluvium on footslopes and are similar to the Rhodhiss soil

Dissimilar:
- Soils that are similar to the Devotion soil but have soft bedrock at a depth of less than 20 inches
- Soils that are similar to the Rhodhiss soil but have soft bedrock at a depth of 40 to 60 inches

- Soils that are similar to the Bannertown soil but have hard bedrock at a depth of less than 20 inches

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Devotion and Bannertown—droughtiness
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Devotion and Bannertown—droughtiness
Management measures and considerations:
- This map unit has severe limitations affecting the production of pasture and hay crops. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants; Devotion and Bannertown—windthrow hazard
Management measures and considerations:
- Cable logging methods help to minimize road and trail construction, especially in areas where the slope is greater than about 50 percent.
- Establishing permanent plant cover on roads and landings following logging operations reduces the hazard of erosion and helps to control siltation of streams.
- Productivity may be limited because of the moderately deep rooting depth of the Devotion and Bannertown soils
- The best method for reforesting areas of this soil is to manage for the natural regeneration of hardwoods.

Urban development
Suitability: Unsuited
Management concerns: Slope, erodibility, large stones, and soil fertility; Devotion and Bannertown—depth to bedrock
Management measures and considerations:
- This map unit has severe limitations affecting urban development. If possible, another site should be selected on better suited soils.

DrB—Dillard fine sandy loam, 2 to 8 percent slopes, rarely flooded

Setting

Landscape: Piedmont, Blue Ridge foothills, and Blue Ridge mountain valleys
Landform: Stream terraces and fans
Geomorphic component: Treads, base slopes, and mountain bases
Shape and size of areas: Long and narrow or irregular; 5 to 30 acres

Composition

Dillard and similar soils: About 75 percent
Dissimilar soils: About 25 percent

Typical Profile

Surface layer:
0 to 10 inches—yellowish brown fine sandy loam

Subsoil:
10 to 19 inches—brownish yellow sandy clay loam that has yellowish brown clay films
19 to 24 inches—brownish yellow sandy clay loam that has yellowish brown clay films and strong brown masses of oxidized iron
24 to 30 inches—light olive brown sandy clay loam that has yellowish red masses of oxidized iron
30 to 48 inches—light olive brown clay that has red and yellowish red masses of oxidized iron and light brownish gray iron depletions
48 to 53 inches—light brownish gray clay loam that has strong brown and reddish yellow masses of oxidized iron

Underlying material:
53 to 79 inches—light gray clay loam that has grayish brown mottles and light yellowish brown and red masses of oxidized iron

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Moderately well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: 2.0 to 3.0 feet
Flooding: Rare
Shrink-swell potential: Moderate
Erosion class: None or slight
Slope class: Gently sloping
Index surface runoff: Low or medium as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Bannister soils, which have a clayey subsoil

Dissimilar:
- The well drained Braddock soils, which have more clay in the subsoil than the Dillard soil and are in the slightly higher areas
- Soils that are similar to the Dillard soil but are somewhat poorly drained and are in the slightly lower areas
- Delanco soils, which have more silt in the subsoil than the Dillard soil
- The well drained Unison soils, which have a yellower, more clayey subsoil than the Dillard soil
- The well drained Tate soils

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Well suited
Management concerns: Erodibility, flooding, wetness, and soil fertility
Management measures and considerations:
- Resource management systems that include diversions, stripcropping, contour tillage, no-till farming, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.

- Although flooding is rare and mostly occurs during the winter, crops may be damaged during the growing season.
- Artificial drainage may be needed to maximize productivity.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Management concerns: Erodibility, flooding, wetness, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- Although flooding is rare and mostly occurs during winter, livestock production and hay crops may be damaged any time of the year.
- Artificial drainage may be needed to maximize productivity.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
- Restricting logging operations to periods when the soil is not saturated helps to prevent rutting of the surface layer and damage to tree roots resulting from soil compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Flooding, slow water movement, and wetness
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the Dillard soil has a high water table at a depth of 2 to 3 feet.
- Increasing the size of septic tank absorption fields and installing distribution lines on the contour help to improve performance.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.
- Building structures on the highest part of the landscape reduces the risk of damage from flooding.

EcC—Evard-Cowee complex, 8 to 15 percent slopes, stony

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops and crests
Shape and size of areas: Long and narrow or irregular; 5 to 200 acres

Composition

Evard and similar soils: About 55 percent
Cowee and similar soils: About 35 percent
Dissimilar soils: About 10 percent

Typical Profile

Evard
Surface layer:
0 to 5 inches—dark yellowish brown gravelly fine sandy loam
5 to 8 inches—yellowish brown gravelly fine sandy loam

Subsoil:
8 to 13 inches—yellowish red sandy clay loam
13 to 29 inches—red clay loam
29 to 35 inches—yellowish red sandy clay loam

Underlying material:
35 to 45 inches—strong brown fine sandy loam
45 to 55 inches—yellowish red gravelly fine sandy loam
55 to 79 inches—yellowish brown gravelly loamy fine sand

Cowee
Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red sandy clay loam

Bedrock:
34 to 79 inches—soft, variegated felsic gneiss

Soil Properties and Qualities

Depth class: Evard—very deep; Cowee—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Evard—moderate or high; Cowee—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping
Stoniness: Stony
Index surface runoff: Evard—medium; Cowee—high
Depth to bedrock: Evard—more than 60 inches to hard bedrock; Cowee—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Edneytown soils, which have a yellower subsoil than the Evard soil
- Pigeonroost soils, which have a yellower subsoil than the Cowee soil
- Hayesville soils, which have a more clayey subsoil than the Evard soil and are in the less sloping areas

Dissimilar:
- Soils that are similar to the Evard soil but have bedrock at a depth of 40 to 60 inches
- Areas of rock outcrop

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland

Suitability: Evard—moderately suited; Cowee—poorly suited
Management concerns: Erodibility, equipment use, and soil fertility; Cowee—rooting depth
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the Cowee soil.

Pasture and hayland

Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Cowee—rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Areas of this map unit may be difficult to manage for the production of pasture during years of low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Cowee soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Competition from undesirable plants; Cowee—windthrow hazard
Management measures and considerations:
- Productivity is limited by the moderately deep rooting depth of the Cowee soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Evard—moderately suited; Cowee—poorly suited
Management concerns: Erodibility, large stones, soil fertility, and slope; Cowee—depth to bedrock
Management measures and considerations:
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- Locating and installing septic tank absorption fields in areas of the deeper Evard soil may improve the performance of filter fields.

- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

EcD—Evard-Cowee complex, 15 to 25 percent slopes, stony

Setting

Landscape: Blue Ridge mountains, Pilot Mountain, and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops, mountain flanks, crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 200 acres

Composition

Evard and similar soils: About 40 percent
Cowee and similar soils: About 40 percent
Dissimilar soils: About 20 percent

Typical Profile

Evard
Surface layer:
0 to 5 inches—dark yellowish brown gravelly fine sandy loam
5 to 8 inches—yellowish brown gravelly fine sandy loam

Subsoil:
8 to 13 inches—yellowish red sandy clay loam
13 to 29 inches—red clay loam
29 to 35 inches—yellowish red sandy clay loam

Underlying material:
35 to 45 inches—strong brown fine sandy loam
45 to 55 inches—yellowish red gravelly fine sandy loam
55 to 79 inches—yellowish brown gravelly loamy fine sand

Cowee
Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red sandy clay loam

Bedrock:
34 to 79 inches—variegated, soft felsic gneiss

Soil Properties and Qualities

Depth class: Evard—very deep; Cowee—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Evard—moderate or high; Cowee—low or moderate
Shrink-swell potential: Low

Erosion class: Slight
Slope class: Moderately steep
Stoniness: Stony
Index surface runoff: Evard—medium or high as the slope increases; Cowee—high
Depth to bedrock: Evard—more than 60 inches to hard bedrock; Cowee—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Edneytown soils, which have a yellower subsoil than the Evard soil
- Pigeonroost soils, which have a yellower subsoil than the Cowee soil
- Hayesville soils, which have a more clayey subsoil than the Evard soil and are in the less sloping areas

Dissimilar:
- Soils that are similar to the Evard soil but have soft bedrock at a depth of 40 to 60 inches
- Soils that are similar to the Cowee soil but have hard bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Evard—poorly suited; Cowee—unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Cowee—rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture; poorly suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Cowee—rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Areas of this map unit may be difficult to manage for the production of pasture during years of low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Cowee soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants; Cowee—windthrow hazard
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.

- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of the Cowee soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Erodibility, large stones, soil fertility, and slope; Cowee—depth to bedrock
Management measures and considerations:
- Locating and installing septic tank absorption fields in areas of the deeper Evard soils may improve the performance of filter fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

EcE—Evard-Cowee complex, 25 to 45 percent slopes, stony

Setting

Landscape: Blue Ridge mountains, Pilot Mountain, and Blue Ridge foothills
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountain flanks, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 250 acres

Composition

Evard and similar soils: About 55 percent
Cowee and similar soils: About 30 percent
Dissimilar soils: About 15 percent

Typical Profile

Evard
Surface layer:
0 to 5 inches—dark yellowish brown gravelly fine sandy loam
5 to 8 inches—yellowish brown gravelly fine sandy loam

Subsoil:
8 to 13 inches—yellowish red sandy clay loam
13 to 29 inches—red clay loam
29 to 35 inches—yellowish red sandy clay loam

Underlying material:
35 to 45 inches—strong brown fine sandy loam
45 to 55 inches—yellowish red gravelly fine sandy loam
55 to 79 inches—yellowish brown gravelly loamy fine sand

Cowee
Surface layer:
0 to 3 inches—dark brown gravelly loam that has dark yellowish brown mottles

Subsoil:
3 to 6 inches—brown loam
6 to 15 inches—strong brown sandy clay loam
15 to 27 inches—yellowish red sandy clay loam

Underlying material:
27 to 34 inches—brownish yellow gravelly fine sandy loam that has pockets of yellowish red sandy clay loam

Bedrock:
34 to 79 inches—soft felsic gneiss

Soil Properties and Qualities

Depth class: Evard—very deep; Cowee—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Evard—moderate or high; Cowee—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: Evard—more than 60 inches to hard bedrock; Cowee—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Edneyville soils, which have a yellower, less clayey subsoil than the Evard soil
- Hayesville soils, which have a more clayey subsoil than the Evard soil and are in the less sloping areas

Dissimilar:
- Cliffield soils, which have more than 35 percent rock fragments in the subsoil and are in the steeper areas
- Soils that are similar to the Evard soil but have soft bedrock at a depth of 40 to 60 inches
- Cleveland soils, which have hard bedrock at a depth of less than 20 inches
- Saluda soils, which have soft bedrock at a depth of less than 20 inches
- Areas of rock outcrop

Land Use

Dominant uses: Woodland and pasture

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Cowee—rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland

Management concerns: Erodibility, equipment use, and soil fertility; Cowee—rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture during years of low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Cowee soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants; Cowee—windthrow hazard
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of the Cowee soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Erodibility, large stones, soil fertility, and slope; Cowee—depth to bedrock
Management measures and considerations:
- Locating and installing septic tank absorption fields in areas of the deeper Evard soil may improve the performance of filter fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FeB2—Fairview sandy clay loam, 2 to 8 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Geomorphic component: Interfluves and crests
Shape and size of areas: Irregular; 5 to 1,000 acres

Composition

Fairview and similar soils: About 83 percent
Dissimilar soils: About 17 percent

Typical Profile

Surface layer:
0 to 4 inches—brown sandy clay loam
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Gently sloping
Index surface runoff: Low or medium as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have thicker layers of clay than the Fairview soil and are in the less sloping areas
- Rhodhiss soils, which have a loamy subsoil
- Toast soils, which have a yellower subsoil than the Fairview soil

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Moderately suited
Management concerns: Erodibility and soil fertility
Management measures and considerations:
- Resource management systems that include diversions, stripcropping, contour tillage, no-till farming, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited (fig. 14)
Management concerns: Erodibility and soil fertility

Figure 14.—Fescue pasture in an area of Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded.

Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, and competition from undesirable plants

Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Moderately suited

Management concerns: Erodibility, low strength, slow water movement, and high clay content

Management measures and considerations:
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.

- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FeC2—Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Geomorphic component: Interfluves, crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 500 acres

Composition

Fairview and similar soils: About 78 percent
Dissimilar soils: About 22 percent

Typical Profile

Surface layer:
0 to 4 inches—brown sandy clay loam
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Strongly sloping
Index surface runoff: Medium
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have thicker layers of clay than the Fairview soil and are in the less sloping areas
- Rhodhiss soils, which have a loamy subsoil
- Toast soils, which have a yellower subsoil than the Fairview soil
- Braddock soils, which formed in old alluvium and are on narrow footslopes and toeslopes

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches

- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- The somewhat poorly drained Arkaqua soils, which have a loamy subsoil and are in small drainageways
- The well drained and moderately well drained Suches soils, which have a loamy subsoil and are in small drainageways

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland

Suitability: Moderately suited (fig. 15)
Management concerns: Erodibility and soil fertility
Management measures and considerations:

- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland

Suitability: Well suited to pasture and moderately suited to hayland (fig. 16)
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.

Figure 15.—Flue-cured tobacco in an area of Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded.

Figure 16.—Fescue hay and pasture in an area of Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, moderately eroded. The Blue Ridge Escarpment is in the background.

- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Equipment use and competition from undesirable plants

Management measures and considerations:

- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Moderately suited

Management concerns: Low strength, slow water movement, high clay content, and slope

Management measures and considerations:

- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FeD2—Fairview sandy clay loam, 15 to 25 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 300 acres

Composition

Fairview and similar soils: About 72 percent
Dissimilar soils: About 28 percent

Typical Profile

Surface layer:
0 to 4 inches—brown sandy clay loam
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Moderately steep
Index surface runoff: Medium or high as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have thicker layers of clay than the Fairview soil and are in the less sloping areas
- Braddock soils, which formed in old alluvium and colluvium and are on narrow footslopes and toeslopes
- Rhodhiss soils, which have a loamy subsoil
- Toast soils, which have a yellower subsoil than the Fairview soil

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- The somewhat poorly drained Arkaqua soils, which have a loamy subsoil and are in small drainageways
- The well drained and moderately well drained Suches soils, which have a loamy subsoil and are in small drainageways
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- This map unit is difficult to manage for cultivated crops because the slope limits the use of equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Low strength, slow water movement, high clay content, and slope
Management measures and considerations:
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FfD—Fairview cobbly fine sandy loam, 15 to 25 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 300 acres

Composition

Fairview and similar soils: About 87 percent
Dissimilar soils: About 13 percent

Typical Profile

Surface layer:
0 to 2 inches—brown cobbly fine sandy loam
2 to 6 inches—brown cobbly fine sandy loam

Subsoil:
6 to 9 inches—yellowish red sandy clay loam
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Moderately steep
Stoniness: Stony
Index surface runoff: Medium or high as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have thicker layers of clay than the Fairview soil and are in the less sloping areas
- Rhodhiss soils, which have a loamy subsoil
- Tate soils, which formed in old alluvium and colluvium, have a loamy subsoil, and are on toeslopes

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- The well drained Colvard soils, which have a loamy subsoil and are in small drainageways

- The well drained and moderately well drained Suches soils, which have a loamy subsoil and are in small drainageways

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is severely limited for crop production because of the steepness of the slope and the amount of stones and cobbles on the surface. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Large stones, erodibility, low strength, slow water movement, high clay content, and slope
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.

- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FnB2—Fairview cobbly sandy clay loam, 2 to 8 percent slopes, moderately eroded, stony

Setting

Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Geomorphic component: Interfluves and crests
Shape and size of areas: Irregular; 5 to 1,000 acres

Composition

Fairview and similar soils: About 90 percent
Dissimilar soils: About 10 percent

Typical Profile

Surface layer:
0 to 9 inches—strong brown cobbly sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Gently sloping
Index surface runoff: Low or medium as the slope increases
Stoniness: Stony
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have thicker layers of clay than the Fairview soil and are in the less sloping areas
- Rhodhiss soils, which have a loamy subsoil

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Moderately suited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Resource management systems that include diversions, stripcropping, contour tillage, no-till farming, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Moderately suited
Management concerns: Large stones, erodibility, low strength, slow water movement, and high clay content
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FnC2—Fairview cobbly sandy clay loam, 8 to 15 percent slopes, moderately eroded, stony

Setting

Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 500 acres

Composition

Fairview and similar soils: About 93 percent
Dissimilar soils: About 7 percent

Typical Profile

Surface layer:
0 to 9 inches—strong brown cobbly sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Strongly sloping
Stoniness: Stony
Index surface runoff: Medium
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have thicker layers of clay than the Fairview soil and are in the less sloping areas
- Rhodhiss soils, which have a loamy subsoil

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Moderately suited
Management concerns: Erodibility, equipment use, and soil fertility

Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Moderately suited
Management concerns: Large stones, low strength, slow water movement, high clay content, and slope
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FrC2—Fairview-Siloam complex, 8 to 15 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills

Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 100 acres

Composition

Fairview and similar soils: About 43 percent
Siloam and similar soils: About 30 percent
Dissimilar soils: About 27 percent

Typical Profile

Fairview
Surface layer:
0 to 4 inches—brown sandy clay loam
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Siloam
Surface layer:
0 to 10 inches—dark yellowish brown fine sandy loam

Subsoil:
10 to 15 inches—dark yellowish brown sandy clay loam that has dark brown pore fillings and yellowish brown mottles

Bedrock:
15 to 26 inches—soft mafic gneiss
26 to 79 inches—hard mafic gneiss

Soil Properties and Qualities

Depth class: Fairview—very deep; Siloam—shallow
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Fairview—moderate or high; Siloam—very low
Shrink-swell potential: Fairview—low; Siloam—moderate
Erosion class: Fairview—moderate; Siloam—slight
Slope class: Strongly sloping
Index surface runoff: Fairview—medium; Siloam—very high
Depth to bedrock: Fairview—more than 60 inches to hard bedrock; Siloam—10 to 20 inches to soft bedrock and 20 to 40 inches to hard bedrock

Minor Components

Similar:
- Rhodhiss soils, which have less clay in the subsoil than the Fairview soil
- Clifford soils, which have a thicker layer of clay than the Fairview soil

Dissimilar:
- Soils that are similar to the Siloam soil but have a few gray or gleyed mottles in the subsoil
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Redbrush soils, which have a brown, clayey subsoil and have bedrock at a depth of 20 to 40 inches

- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Devotion soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Soils that are like the Woolwine soil, except they have bedrock at a depth of less than 20 inches and are in severely eroded areas
- Soils that are like the Redbrush soil, except they have a few gray or gleyed mottles in the lower subsoil or saprolite
- Soils that are like the Spriggs soil, except they have a few gray or gleyed mottles in the lower subsoil or saprolite

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland

Suitability: Fairview—moderately suited; Siloam—poorly suited

Management concerns: Erodibility; Fairview—soil fertility; Siloam—droughtiness and rooting depth

Management measures and considerations:

- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.
- The shallow rooting depth makes the Siloam soil in this map unit difficult to manage for the economical production of crops.

Pasture and hayland

Suitability: Fairview—well suited to pasture and moderately suited to hayland; Siloam—moderately suited to pasture and poorly suited to hayland

Management concerns: Erodibility and equipment use; Fairview—soil fertility; Siloam—droughtiness and rooting depth

Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.
- Planting drought-tolerant species increases productivity in areas of the Siloam soil.
- Shallow rooting depth makes the Siloam soil in this map unit difficult to manage for the economical production of pasture and hay crops.

Woodland

Management concerns: Competition from undesirable plants; Fairview—equipment use; Siloam—windthrow hazard

Management measures and considerations:

- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds and the limited rooting depth of the Siloam soil.

- Planting during wet periods or when the soil is moist for extended periods increases the seedling survival rate in the shallow Siloam soil.

Urban development
Suitability: Fairview—moderately suited; Siloam—unsuited
Management concerns: Low strength and slope; Fairview—slow water movement and high clay content; Siloam—depth to bedrock
Management measures and considerations:
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls in areas of the Fairview soil.
- Increasing the size of the absorption field improves system performance in areas of the Fairview soil.
- Installing distribution lines on the contour improves performance of septic tank absorption fields in areas of the Fairview soil.
- Septic tank absorption fields should be installed in areas of the Fairview soil in this map unit because of the shallow depth to bedrock of the Siloam soil.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FrD2—Fairview-Siloam complex, 15 to 25 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 70 acres

Composition

Fairview and similar soils: About 40 percent
Siloam and similar soils: About 33 percent
Dissimilar soils: About 27 percent

Typical Profile

Fairview
Surface layer:
0 to 4 inches—brown sandy clay loam
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Siloam
Surface layer:
0 to 10 inches—dark yellowish brown fine sandy loam

Subsoil:
10 to 15 inches—dark yellowish brown sandy clay loam that has dark brown pore fillings and yellowish brown mottles

Bedrock:
15 to 26 inches—soft mafic gneiss
26 to 79 inches—hard mafic gneiss

Soil Properties and Qualities

Depth class: Fairview—very deep; Siloam—shallow
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Fairview—moderate or high; Siloam—very low
Shrink-swell potential: Fairview—low; Siloam—moderate
Erosion class: Fairview—moderate; Siloam—slight
Slope class: Moderately steep
Index surface runoff: Fairview—medium or high as the slope increases; Siloam—very high
Depth to bedrock: Fairview—more than 60 inches to hard bedrock; Siloam—10 to 20 inches to soft bedrock and 20 to 40 inches to hard bedrock

Minor Components

Similar:
- Rhodhiss soils, which have less clay in the subsoil than the Fairview soil

Dissimilar:
- Spriggs soils, which have a brown, loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Bannertown soils, which have hard bedrock at a depth of 20 to 40 inches
- Soils that are similar to the Siloam soil but have a few gray or gleyed mottles in the subsoil
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- The well drained and moderately well drained Suches soils, which are along small drainageways

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Fairview—poorly suited; Siloam—unsuited
Management concerns: Erodibility and equipment use; Fairview—soil fertility; Siloam—droughtiness and rooting depth
Management measures and considerations:
- This map unit is difficult to manage for cultivated crops because the slope limits the use of equipment.
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

• The shallow rooting depth makes the Siloam soil in this map unit difficult to manage for the economical production of crops.

Pasture and hayland

Suitability: Fairview—moderately suited to pasture and poorly suited to hayland; Siloam—poorly suited to pasture and unsuited to hayland

Management concerns: Erodibility and equipment use; Fairview—soil fertility; Siloam—droughtiness and rooting depth

Management measures and considerations:

• Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
• The slope may limit equipment use in the steeper areas when hay is harvested.
• Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.
• Planting drought-tolerant species increases productivity in areas of the Siloam soil.
• Shallow rooting depth makes the Siloam soil in this map unit difficult to manage for the economical production of pasture and hay crops.

Woodland

Management concerns: Erodibility, equipment use, and competition from undesirable plants; Siloam—windthrow hazard

Management measures and considerations:

• Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
• Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
• Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
• Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
• Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
• Planting during wet periods or when the soil is moist for extended periods increases the seedling survival rate in the shallow Siloam soil.

Urban development

Suitability: Fairview—poorly suited; Siloam—unsuited

Management concerns: Low strength and slope; Fairview—slow water movement and high clay content; Siloam—depth to bedrock

Management measures and considerations:

• Installing distribution lines during dry periods minimizes smearing and sealing of trench walls in areas of the Fairview soil.
• Increasing the size of the absorption field improves system performance in areas of the Fairview soil.
• Installing distribution lines on the contour improves performance of septic tank absorption fields in areas of the Fairview soil.
• Septic tank absorption fields should be installed in areas of the Fairview soil in this map unit because of the shallow depth to bedrock of the Siloam soil.
• Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
• Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
• The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FsE—Fairview-Stott Knob complex, 25 to 45 percent slopes

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow; 5 to 250 acres

Composition

Fairview and similar soils: About 60 percent
Stott Knob and similar soils: About 28 percent
Dissimilar soils: About 12 percent

Typical Profile

Fairview
Surface layer:
0 to 2 inches—brown fine sandy loam
2 to 6 inches—brown fine sandy loam

Subsoil:
6 to 9 inches—yellowish red sandy clay loam
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Stott Knob
Surface layer:
0 to 3 inches—dark yellowish brown fine sandy loam
3 to 7 inches—brown fine sandy loam

Subsoil:
7 to 19 inches—yellowish red sandy clay loam
19 to 24 inches—reddish yellow fine sandy loam

Underlying material:
24 to 30 inches—strong brown fine sandy loam saprolite

Bedrock:
30 to 47 inches—soft gneiss
47 to 79 inches—hard gneiss

Soil Properties and Qualities

Depth class: Fairview—very deep; Stott Knob—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Fairview—moderate or high; Stott Knob—low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Index surface runoff: High
Depth to bedrock: Fairview—more than 60 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Rhodhiss soils, which have less clay in the subsoil than the Fairview soil
- Woolwine soils, which have more clay in the subsoil than the Stott Knob soil
- Devotion soils, which have less clay in the subsoil than the Stott Knob soil
- Clifford soils, which have a thicker layer of clay than the Fairview soil and are in the less sloping areas
- Toast soils, which have a yellower subsoil than the Fairview soil
- Braddock soils, which formed in old alluvium and colluvium and are on narrow footslopes and toeslopes

Dissimilar:
- The somewhat poorly drained Arkaqua soils, which have a loamy subsoil and are in small drainageways
- The well drained and moderately well drained Suches soils, which have a loamy subsoil and are in small drainageways
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches

Land Use

Dominant uses: Woodland, pasture, and hayland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting the production of crops. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants; Stott Knob—windthrow hazard
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Productivity is limited in areas of the Stott Knob soils because of the moderately deep rooting depth.

Urban development
Suitability: Poorly suited
Management concerns: Erodibility, soil fertility, and slope; Fairview—high clay content and slow water movement; Stott Knob—depth to bedrock
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because of the steepness of the slope.
- Septic tank absorption fields should be located in the very deep Fairview soils.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FtE—Fairview-Stott Knob complex, 25 to 45 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow; 5 to 250 acres

Composition

Fairview and similar soils: About 76 percent
Stott Knob and similar soils: About 17 percent
Dissimilar soils: About 7 percent

Typical Profile

Fairview
Surface layer:
0 to 2 inches—dark brown cobbly fine sandy loam
2 to 6 inches—brown cobbly fine sandy loam

Subsoil:
6 to 9 inches—yellowish red sandy clay loam
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Stott Knob
Surface layer:
0 to 3 inches—dark yellowish brown cobbly fine sandy loam
3 to 7 inches—brown cobbly fine sandy loam

Subsoil:
7 to 19 inches—yellowish red sandy clay loam
19 to 24 inches—reddish yellow fine sandy loam

Underlying material:
24 to 30 inches—strong brown fine sandy loam saprolite

Bedrock:
30 to 47 inches—soft gneiss
47 to 79 inches—hard gneiss

Soil Properties and Qualities

Depth class: Fairview—very deep; Stott Knob—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Fairview—moderate or high; Stott Knob—low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: Fairview—more than 60 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Rhodhiss soils, which have less clay in the subsoil than the Fairview soil
- Woolwine soils, which have more clay in the subsoil than the Stott Knob soil
- Devotion soils, which have less clay in the subsoil than the Stott Knob soil
- Clifford soils, which have a thicker layer of clay than the Fairview soil and are in the less sloping areas
- Braddock soils, which formed in old alluvium and colluvium and are on narrow footslopes and toeslopes
- Brevard soils, which have a loamy subsoil that formed in old alluvium and colluvium and are on narrow footslopes and toeslopes

Dissimilar:
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- The somewhat poorly drained Arkaqua soils, which have a loamy subsoil and are in small drainageways
- The well drained and moderately well drained Suches soils, which have a loamy subsoil and are in small drainageways
- Bannertown soils, which have hard bedrock at a depth of 20 to 40 inches

Land Use

Dominant uses: Woodland, pasture, and hayland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting the production of crops. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth

Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.

Woodland
Management concerns: Erodibility, equipment use, and competition from undesirable plants; Stott Knob—windthrow hazard
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Erodibility, large stones, soil fertility, and slope; Stott Knob—depth to bedrock
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because of the steepness of the slope.
- Septic tank absorption fields should be located in the very deep Fairview soil and not in the moderately deep Stott Knob soil.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FuB2—Fairview-Urban land complex, 2 to 8 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands in and around the towns of Dobson, Elkin, and Pilot Mountain
Landform: Interfluves, ridges, and low hills
Geomorphic component: Interfluves and crests
Shape and size of areas: Irregular; 5 to 300 acres

Composition

Fairview and similar soils: About 57 percent
Urban land: About 31 percent

Dissimilar soils: About 12 percent

Typical Profile

Fairview
Surface layer:
0 to 4 inches—dark brown sandy clay loam
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Urban land
Urban land consists of areas covered by impervious material, such as buildings, houses, parking lots, roads, and streets.

Soil Properties and Qualities

Depth class: Fairview soils—very deep; Urban land—impervious cover
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Gently sloping
Index surface runoff: Fairview—low or medium as the slope increases; Urban land—very high
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have a thicker layer of clay than the Fairview soil and are in the less sloping areas
- Rhodhiss soils, which have a loamy subsoil
- Toast soils, which have a yellower subsoil than the Fairview soil

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Udorthents, which are areas where the natural soil has been removed or modified

Land Use

Dominant uses: Urban development

Cropland
Suitability: Poorly suited
Management concerns: Limited size of areas, erodibility, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for crop production because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils.

Pasture and hayland
Suitability: Poorly suited
Management concerns: Limited size of areas, erodibility, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for the production of pasture and hay crops because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils.

Woodland
Management concerns: Competition from undesirable plants
Management measures and considerations:
- This map unit is difficult to manage for timber production because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils.

Urban development
Suitability: Moderately suited
Management concerns: Low strength, slow water movement, and high clay content
Management measures and considerations:
- The limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils may make it difficult to find suitable areas for installing sanitary facilities.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

FuC2—Fairview-Urban land complex, 8 to 15 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands in and around the towns of Dobson, Elkin, and Pilot Mountain
Landform: Interfluves, ridges, and low hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 200 acres

Composition

Fairview and similar soils: About 54 percent
Urban land: About 31 percent
Dissimilar soils: About 15 percent

Typical Profile

Fairview
Surface layer:
0 to 4 inches—dark brown sandy clay loam
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Urban land

Urban land consists of areas covered by impervious material, such as buildings, houses, parking lots, roads, and streets.

Soil Properties and Qualities

Depth class: Fairview soils—very deep; Urban land—impervious cover
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Strongly sloping
Index surface runoff: Fairview—medium; Urban land—very high
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have a thicker layer of clay than the Fairview soil and are in the less sloping areas
- Rhodhiss soils, which have a loamy subsoil
- Toast soils, which have a yellower subsoil than the Fairview soil
- Braddock soils, which formed in old alluvium and are on narrow footslopes and toeslopes

Dissimilar:
- Woolwine soils, which have soft bedrock at a depth of 20 to 40 inches
- Westfield soils, which have soft bedrock at a depth of 40 to 60 inches
- Stott Knob soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Udorthents, which are areas where the natural soil has been removed or modified

Land Use

Dominant uses: Urban development

Cropland

Suitability: Poorly suited
Management concerns: Limited size of areas, erodibility, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for crop production because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils.

Pasture and hayland

Suitability: Poorly suited
Management concerns: Limited size of areas, erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for the production of pasture and hay crops because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils.

Woodland

Management concerns: Limited size of areas, equipment use, seedling survival, and competition from undesirable plants

Management measures and considerations:

- This map unit is difficult to manage for timber production because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils.

Urban development

Suitability: Moderately suited

Management concerns: Low strength, slow water movement, high clay content, and slope

Management measures and considerations:

- The limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils may make it difficult to find suitable areas for installing sanitary facilities.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

GrE—Greenlee extremely bouldery fine sandy loam, 25 to 60 percent slopes, rubbly

Setting

Landscape: Pilot Mountain
Landform: Fans
Geomorphic component: Mountain flanks and mountain bases
Shape and size of areas: Irregular or fan-shaped; 90 to 100 acres

Composition

Greenlee soils: About 85 percent
Dissimilar soils: About 15 percent

Typical Profile

Surface layer:
0 to 5 inches—dark gray extremely bouldery fine sandy loam
5 to 12 inches—brown extremely stony fine sandy loam

Subsoil:
12 to 34 inches—yellowish brown very stony fine sandy loam
34 to 79 inches—yellowish brown extremely stony fine sandy loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: High

Available water capacity: Very low or low
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Slope class: Steep or very steep
Stoniness: Rubbly
Index surface runoff: Medium
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Dissimilar:
- Chestnut soils, which have soft bedrock at a depth of 20 to 40 inches and are on knobs
- Tate soils, which have less than 35 percent rock fragments in the subsoil and are in the lower areas

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is severely limited for the production of pasture and hay crops because of the steepness of the slope and the large amount of rocks on the surface. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Large stones, slope, and cutbanks cave
Management measures and considerations:
- Large stones and boulders may be encountered during excavation and should be removed.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.

- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

HaA—Hatboro loam, 0 to 2 percent slopes, frequently flooded

Setting

Landscape: Piedmont and Blue Ridge foothill valleys
Landform: Flood plains
Geomorphic component: Talfs and dips
Shape and size of areas: Oval to elongated bands or irregular; 5 to 50 acres

Composition

Hatboro and similar soils: About 89 percent
Dissimilar soils: About 11 percent

Typical Profile

Surface layer:
0 to 4 inches—dark grayish brown loam that has strong brown masses of oxidized iron
4 to 8 inches—dark grayish brown loam that has strong brown masses of oxidized iron

Subsoil:
8 to 15 inches—dark grayish brown sandy clay loam that has strong brown masses of oxidized iron
15 to 22 inches—gray sandy clay loam that has yellowish brown and strong brown masses of oxidized iron
22 to 35 inches—gray sandy clay loam that has lenses of sand and clay loam and has very dark gray iron depletions and yellowish brown masses of oxidized iron

Buried surface layer:
35 to 41 inches—very dark grayish brown fine sandy loam that has lenses of sandy clay loam and clay loam and has yellowish brown masses of oxidized iron

Underlying material:
41 to 79 inches—dark grayish brown very gravelly loamy sand that has grayish brown mottles

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Poorly drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Moderate or high
Depth to seasonal high water table: 0 to 1.0 foot
Flooding: Frequent
Ponding: Frequent
Shrink-swell potential: Low
Slope class: Nearly level
Index surface runoff: Negligible to very low as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Soils that are similar to the Hatboro soil but have a thinner subsoil
- Soils that are similar to the Hatboro soil but are very poorly drained and are in the lowest areas
- Soils that are similar to the Hatboro soil but have a less clayey subsoil
- Kinkora soils, which have a clayey subsoil
- Soils that are similar to the Hatboro soil but have a very gravelly layer at a depth of less than 40 inches

Dissimilar:
- Arkaqua soils, which are somewhat poorly drained and are in the slightly higher areas

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Well suited, if drained and protected from flooding or not frequently flooded during the growing season
Management concerns: Flooding, wetness, and ponding
Management measures and considerations:
- Hatboro soils are hydric and are wetland soils in their natural state; wetlands are restricted by law for certain uses, including cropland.
- Harvesting row crops as soon as possible can reduce the risk of damage from flooding.
- Installing and maintaining an artificial drainage system reduce wetness and improve the productivity of the soil.

Pasture and hayland
Suitability: Well suited, if drained and protected from flooding or not frequently flooded during the growing season
Management concerns: Flooding, ponding, wetness, and competition from undesirable plants
Management measures and considerations:
- Hatboro soils are hydric and are wetland soils in their natural state; wetlands are restricted by law for certain uses.
- Although most flooding occurs during the winter, livestock production and hay crops may be damaged any time of the year.
- Well maintained drainageways and ditches help to remove excess water.
- Using herbicides and implementing a well planned schedule of clipping maximize weed control.

Woodland
Management concerns: Equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Restricting the use of standard wheeled and tracked equipment to dry periods reduces rutting and compaction that occur when the soil is saturated.
- Harvesting timber during the summer reduces the risk of damage from flooding.
- Bedding prior to planting helps to establish seedlings and increases the seedling survival rate.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Unsuited
Management concerns: Flooding and wetness
Management measures and considerations:
- This map unit has severe limitations affecting urban development. If possible, another site should be selected on better suited soils.

MsC—Meadowfield-Stott Knob complex, 8 to 15 percent slopes, very stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow bands or irregular; 5 to 105 acres

Composition

Meadowfield and similar soils: About 60 percent
Stott Knob and similar soils: About 27 percent
Dissimilar soils: About 13 percent

Typical Profile

Meadowfield
Surface layer:
2 to 0 inches—leaf litter and twigs
0 to 4 inches—dark yellowish brown very gravelly loam

Subsoil:
4 to 8 inches—strong brown very gravelly loam
8 to 22 inches—yellowish red very gravelly clay loam

Underlying material:
22 to 28 inches—variegated extremely gravelly loam saprolite that has pockets of red very gravelly clay loam

Bedrock:
28 to 79 inches—hard sillimanite schist

Stott Knob
Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 to 79 inches—hard mica schist

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Meadowfield—very low or low; Stott Knob—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping
Stoniness: Very stony
Index surface runoff: High
Depth to bedrock: Meadowfield—20 to 40 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Woolwine soils, which have a more clayey subsoil than the Stott Knob soil

Dissimilar:
- Hickoryknob soils that have hard bedrock at a depth of 20 to 40 inches
- Soils that are like the Hickoryknob soil, except they have hard bedrock at a depth of less than 20 inches
- Westfield soils, which have a clayey subsoil and have bedrock at a depth of 40 to 60 inches
- Soils that are like the Westfield soil, except they have a loamy subsoil
- Areas of rock outcrop

Land Use

Dominant uses: Woodland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility; Meadowfield—droughtiness
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility; Meadowfield—droughtiness
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.

- Areas of this map unit may be difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth of the Meadowfield soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Windthrow hazard, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, slope, erodibility, large stones, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the dominant soils are moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

MsD—Meadowfield-Stott Knob complex, 15 to 25 percent slopes, very stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow; 5 to 100 acres

Composition

Meadowfield and similar soils: About 65 percent
Stott Knob and similar soils: About 23 percent
Dissimilar soils: About 12 percent

Typical Profile

Meadowfield
Surface layer:
2 to 0 inches—leaf litter and twigs
0 to 4 inches—dark yellowish brown very gravelly loam

Subsoil:
4 to 8 inches—strong brown very gravelly loam
8 to 22 inches—yellowish red very gravelly clay loam

Underlying material:
22 to 28 inches—variegated extremely gravelly loam saprolite that has pockets of red very gravelly clay loam

Bedrock:
28 to 79 inches—hard sillimanite schist

Stott Knob
Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 to 79 inches—hard mica schist

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Meadowfield—very low or low; Stott Knob—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Moderately steep
Stoniness: Very stony
Index surface runoff: High
Depth to bedrock: Meadowfield—20 to 40 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Woolwine soils, which have a more clayey subsoil than the Stott Knob soil

Dissimilar:
- Hickoryknob soils that have hard bedrock at a depth of 20 to 40 inches
- Soils that are like the Hickoryknob soil, except they have hard bedrock at a depth of less than 20 inches
- Westfield soils, which have a clayey subsoil and have bedrock at a depth of 40 to 60 inches
- Soil that are like the Westfield soil, except they have a loamy subsoil
- Areas of rock outcrop

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited

Management concerns: Erodibility, equipment use, rooting depth, and soil fertility; Meadowfield—droughtiness

Management measures and considerations:

- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland

Suitability: Moderately suited to pasture and poorly suited to hayland

Management concerns: Erodibility, equipment use, rooting depth, and soil fertility; Meadowfield—droughtiness

Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Areas of this map unit may be difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth of the Meadowfield soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, windthrow hazard, seedling survival, and competition from undesirable plants

Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Poorly suited

Management concerns: Depth to bedrock, slope, erodibility, large stones, and soil fertility

Management measures and considerations:

- This map unit is difficult to manage for septic tank absorption fields because the dominant soils are moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

MsE—Meadowfield-Stott Knob complex, 25 to 45 percent slopes, very stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow; 5 to 100 acres

Composition

Meadowfield and similar soils: About 63 percent
Stott Knob and similar soils: About 17 percent
Dissimilar soils: About 20 percent

Typical Profile

Meadowfield
Surface layer:
2 to 0 inches—leaf litter and twigs
0 to 4 inches—dark yellowish brown very gravelly loam

Subsoil:
4 to 8 inches—strong brown very gravelly loam
8 to 22 inches—yellowish red very gravelly clay loam

Underlying material:
22 to 28 inches—variegated extremely gravelly loam saprolite that has pockets of red very gravelly clay loam

Bedrock:
28 to 79 inches—hard sillimanite schist

Stott Knob
Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 to 79 inches—hard mica schist

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Meadowfield—very low or low; Stott Knob—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Very stony

Index surface runoff: High
Depth to bedrock: Meadowfield—20 to 40 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Woolwine soils, which have a more clayey subsoil than the Stott Knob soil
- Soils that are similar to the Meadowfield soil but have a weak subsoil structure

Dissimilar:
- Hickoryknob soils that have hard bedrock at a depth of 20 to 40 inches
- Soils that are like the Hickoryknob soil, except they have hard bedrock at a depth of less than 20 inches
- Rhodhiss soils that have bedrock at a depth of more than 60 inches
- Soils that are like the Westfield soil, except they have a loamy subsoil and have bedrock at a depth of 40 to 60 inches
- Areas of rock outcrop

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility; Meadowfield—droughtiness
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility; Meadowfield—droughtiness
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- Areas of this map unit may be difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth of the Meadowfield soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, windthrow hazard, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.

- Productivity may be limited because of the moderately deep rooting depth of these soils.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, slope, erodibility, large stones, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the dominant soils are moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

Pt—Pits, quarry

Setting

Landscape: Piedmont uplands and valleys
Shape and size of areas: Round to oval; 30 to 170 acres

Composition

Pits, quarry, and similar soils: About 95 percent
Dissimilar soils: About 5 percent

Typical Profile

Pits, quarry, consists of areas where the soil and saprolite have been removed as over-burden and the hard bedrock has been mined for aggregate or dimension stone to some depth.

A few small areas along the edges of this miscellaneous map unit have a few inches of disturbed soil material scattered over them.

Soil Properties and Qualities

Depth: Ranging from the natural bedrock depth of a few feet to about 100 feet deep
Drainage: Flooding and ponding from groundwater and streams in the lowest areas of some quarries during very wet seasons, unless pumped
Slope class: Mostly nearly level to strongly sloping with areas along the perimeter ranging to extremely steep
Index surface runoff: Sidewalls—high or very high; floor—very high or ponded in the lowest areas of some quarries, unless pumped
Depth to bedrock: Hard bedrock at the surface in most areas

Minor Components

Similar:
- Small areas that have soft bedrock at the surface near the perimeter

Dissimilar:
- Udorthents that have bedrock at a depth of less than 40 inches
- Small areas of undisturbed, natural soil

Land Use

Dominant uses: Mining and potential for recreational development when reclaimed

Cropland
Suitability: Unsuited
Management concerns: Highly disturbed soils and soil removed from site
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Highly disturbed soils and soil removed from site
Management measures and considerations:
- This map unit has severe limitations affecting the production of pasture and hay crops. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Highly disturbed soils and soil removed from site
Management measures and considerations:
- This map unit has severe limitations affecting timber production. If possible, another site should be selected on better suited soils.

Urban development
Suitability: Poorly suited
Management concerns: Highly disturbed soils and soil removed from site
Management measures and considerations:
- This map unit has severe limitations affecting urban development. If possible, another site should be selected on better suited soils.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

RbD—Rhodhiss-Bannertown complex, 15 to 25 percent slopes, very rocky

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 200 acres

Composition

Rhodhiss and similar soils: About 79 percent
Bannertown and similar soils: About 13 percent
Dissimilar soils: About 8 percent

Typical Profile

Rhodhiss
Surface layer:
0 to 6 inches—dark yellowish brown coarse sandy loam

Subsurface layer:
6 to 10 inches—yellowish brown coarse sandy loam

Subsoil:
10 to 19 inches—yellowish brown sandy clay loam
19 to 27 inches—brownish yellow sandy clay loam
27 to 33 inches—reddish yellow coarse sandy loam

Underlying material:
33 to 79 inches—brownish yellow coarse sandy loam saprolite that has reddish yellow mottles

Bannertown
Surface layer:
0 to 4 inches—dark brown gravelly coarse sandy loam

Subsoil:
4 to 8 inches—brown gravelly coarse sandy loam
8 to 14 inches—yellowish brown gravelly coarse sandy loam
14 to 19 inches—light yellowish brown gravelly coarse sandy loam

Underlying material:
19 to 27 inches—light yellowish brown gravelly coarse sandy loam saprolite

Bedrock:
27 to 30 inches—light gray, soft granite
30 inches—light gray, hard granite

Soil Properties and Qualities

Depth class: Rhodhiss—very deep; Bannertown—moderately deep
Agricultural drainage class: Rhodhiss—well drained; Bannertown—somewhat excessively drained
Saturated hydraulic conductivity class: Rhodhiss—moderately high; Bannertown—high
Available water capacity: Rhodhiss—moderate or high; Bannertown—very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Moderately steep
Extent of rock outcrops: Rock outcrops cover about 5 percent of the soil surface
Index surface runoff: Rhodhiss—medium to high; Bannertown—high
Depth to bedrock: Rhodhiss—more than 60 inches to hard bedrock; Bannertown—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Toast soils, which have more clay in the subsoil than the Rhodhiss soil
- Fairview soils, which have a redder, more clayey subsoil than the Rhodhiss soil and are along the edges of map units where the parent material is intermixed

Dissimilar:
- Stott Knob soils, which have soft bedrock at a depth of 20 to 40 inches
- The moderately well drained Dillard soils, which formed in old alluvium and are on narrow toeslopes
- Devotion soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Bannertown soils that have hard bedrock at a depth of less than 20 inches
- The somewhat poorly drained Arkaqua soils along small drainageways

Land Use

Dominant uses: Pasture, hayland, woodland, cropland, and urban land

Cropland
Suitability: Poorly suited
Management concerns: Erodibility, equipment use, and soil fertility; Bannertown—droughtiness and rooting depth
Management measures and considerations:
- This map unit is difficult to manage for cultivated crops because the slope limits the use of equipment.
- This map unit is difficult to manage for cropland because of the areas of rock outcrop.
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Returning plant residue to the soil improves the water-holding capacity and planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the Bannertown soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Bannertown—droughtiness and rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- This map unit is difficult to manage for pasture and hayland because of the areas of rock outcrop.
- Areas of this map unit may be difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth of the Bannertown soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants; Bannertown—windthrow hazard
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour and, where possible, around rock outcrops helps to overcome the slope limitation.
- Planting during wet periods or when the soil is moist for extended periods increases the seedling survival rate.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds and the limited rooting depth of the Bannertown soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Erodibility, slope, and soil fertility; Bannertown—depth to bedrock and droughtiness
Management measures and considerations:
- Locating and installing septic tank absorption fields in the deeper Rhodhiss soils may improve the performance of filter fields.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

RrE—Rhodhiss-Bannertown-Rock outcrop complex, 25 to 60 percent slopes, very bouldery

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow; 5 to 75 acres

Composition

Rhodhiss and similar soils: About 46 percent
Bannertown and similar soils: About 30 percent
Rock outcrop: About 10 percent
Dissimilar soils: About 14 percent

Typical Profile

Rhodhiss
Surface layer:
0 to 6 inches—dark yellowish brown coarse sandy loam

Subsurface layer:
6 to 10 inches—yellowish brown coarse sandy loam

Subsoil:
10 to 19 inches—yellowish brown sandy clay loam
19 to 27 inches—brownish yellow sandy clay loam
27 to 33 inches—reddish yellow coarse sandy loam

Underlying material:
33 to 79 inches—brownish yellow coarse sandy loam saprolite that has reddish yellow mottles

Bannertown
Surface layer:
0 to 4 inches—dark brown gravelly coarse sandy loam

Subsoil:
4 to 8 inches—brown gravelly coarse sandy loam
8 to 14 inches—yellowish brown gravelly coarse sandy loam

14 to 19 inches—light yellowish brown gravelly coarse sandy loam

Underlying material:
19 to 27 inches—light yellowish brown gravelly coarse sandy loam saprolite

Bedrock:
27 to 30 inches—light gray, soft granite
30 inches—light gray, hard granite

Rock outcrop
Areas of light gray, hard granite extend above the surface of the soil.

Soil Properties and Qualities

Depth class: Rhodhiss—very deep; Bannertown—moderately deep
Agricultural drainage class: Rhodhiss—well drained; Bannertown—somewhat excessively drained
Saturated hydraulic conductivity class: Rhodhiss—moderately high; Bannertown—high
Available water capacity: Rhodhiss—moderate or high; Bannertown—very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep or very steep
Stoniness: Boulders cover about 1 percent of the soil surface
Index surface runoff: Rhodhiss and Bannertown—high; Rock outcrop—very high
Depth to bedrock: Rhodhiss—more than 60 inches to hard bedrock; Bannertown—20 to 40 inches to hard bedrock; Rock outcrop—hard granite at the surface

Minor Components

Similar:
- Toast soils, which have more clay in the subsoil than the Rhodhiss soil
- Hickoryknob soils, which have more clay in the subsoil than the Bannertown soil

Dissimilar:
- Stott Knob soils, which have soft bedrock at a depth of 20 to 40 inches
- Bannertown soils that have hard bedrock at a depth of less than 20 inches
- Devotion soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Tate soils, which formed in old alluvium and are on narrow toeslopes

Land Use

Dominant uses: Woodland and pasture

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Bannertown—droughtiness and rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Rhodhiss and Bannertown—poorly suited to pasture and unsuited to hayland; Rock outcrop—unsuited to pasture and hayland
Management concerns: Erodibility, equipment use, and soil fertility; Bannertown—droughtiness and rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.

- The slope may limit equipment use in the steeper areas when hay is harvested.
- Areas that have a slope greater than 50 percent are very difficult to manage for pasture and hayland.
- This map unit is difficult to manage for pasture and hayland because of the areas of rock outcrop.
- Areas of this map unit may be difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth of the Bannertown soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, seedling survival; Bannertown—windthrow hazard

Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour and, where possible, around rock outcrops helps to overcome the slope limitation.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds and the limited rooting depth of the Bannertown soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Rhodhiss and Bannertown—poorly suited; Rock outcrop—unsuited

Management concerns: Slope, erodibility, and soil fertility; Bannertown—depth to bedrock and droughtiness

Management measures and considerations:

- This map unit is severely limited for urban development because of the steepness of the slope and the areas of rock outcrop. If possible, another site should be selected on better suited soils.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

RsB—Rhodhiss-Stott Knob complex, 2 to 8 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Crests
Shape and size of areas: Long and narrow or irregular; 5 to 35 acres

Composition

Rhodhiss and similar soils: About 60 percent
Stott Knob and similar soils: About 35 percent
Dissimilar soils: About 5 percent

Typical Profile

Rhodhiss
Surface layer:
2 to 0 inches—partially decomposed leaf litter and root mat
0 to 4 inches—brown gravelly fine sandy loam

Subsoil:
4 to 8 inches—strong brown gravelly loam
8 to 14 inches—yellowish red loam
14 to 36 inches—red clay loam
36 to 43 inches—red loam

Underlying material:
43 to 51 inches—yellowish red loam
51 to 79 inches—reddish yellow fine sandy loam

Stott Knob
Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 inches—hard mica schist

Soil Properties and Qualities

Depth class: Rhodhiss—very deep; Stott Knob—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Rhodhiss—moderate or high; Stott Knob—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Gently sloping
Stoniness: Stony
Index surface runoff: Rhodhiss—low or medium as the slope increases; Stott Knob—high
Depth to bedrock: Rhodhiss—more than 60 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Fairview soils, which have a more clayey subsoil than the Rhodhiss soil
- Woolwine soils, which have a more clayey subsoil than the Stott Knob soil

Dissimilar:
- Westfield soils, which have a clayey subsoil and have soft bedrock at a depth of 40 to 60 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland

Suitability: Moderately suited

Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth

Management measures and considerations:

- Resource management systems that include diversions, stripcropping, contour tillage, no-till farming, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the Stott Knob soil.

Pasture and hayland

Suitability: Well suited to pasture and moderately suited to hayland

Management concerns: Erodibility and soil fertility; Stott Knob—rooting depth

Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Stott Knob soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Competition from undesirable plants; Stott Knob—windthrow hazard

Management measures and considerations:

- Productivity is limited because of the moderately deep rooting depth of the Stott Knob soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Rhodhiss—well suited; Stott Knob—moderately suited

Management concerns: Erodibility, large stones, and soil fertility; Stott Knob—depth to bedrock

Management measures and considerations:

- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- Locating and installing septic tank absorption fields in the deeper Rhodhiss soils may improve the performance of filter fields.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

RsC—Rhodhiss-Stott Knob complex, 8 to 15 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 115 acres

Composition

Rhodhiss and similar soils: About 75 percent
Stott Knob and similar soils: About 20 percent
Dissimilar soils: About 5 percent

Typical Profile

Rhodhiss
Surface layer:
2 to 0 inches—partially decomposed leaf litter and root mat
0 to 4 inches—brown gravelly fine sandy loam

Subsoil:
4 to 8 inches—strong brown loam
8 to 14 inches—yellowish red loam
14 to 36 inches—red clay loam
36 to 43 inches—red loam

Underlying material:
43 to 51 inches—yellowish red loam
51 to 79 inches—reddish yellow fine sandy loam

Stott Knob
Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 inches—hard mica schist

Soil Properties and Qualities

Depth class: Rhodhiss—very deep; Stott Knob—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Rhodhiss—moderate or high; Stott Knob—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping
Stoniness: Stony
Index surface runoff: Rhodhiss—medium; Stott Knob—high

Depth to bedrock: Rhodhiss—more than 60 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Fairview soils, which have a more clayey subsoil than the Rhodhiss soil
- Woolwine soils, which have a more clayey subsoil than the Stott Knob soil

Dissimilar:
- Westfield soils, which have a clayey subsoil and have soft bedrock at a depth of 40 to 60 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the Stott Knob soil.

Pasture and hayland
Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Stott Knob soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Competition from undesirable plants; Stott Knob—windthrow hazard
Management measures and considerations:
- Productivity is limited by the moderately deep rooting depth of the Stott Knob soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Rhodhiss—moderately suited; Stott Knob—poorly suited

Management concerns: Erodibility, large stones, soil fertility, and slope; Stott Knob—depth to bedrock

Management measures and considerations:

- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- Locating and installing septic tank absorption fields in the deeper Rhodhiss soils may improve the performance of filter fields.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

RsD—Rhodhiss-Stott Knob complex, 15 to 25 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 100 acres

Composition

Rhodhiss and similar soils: About 75 percent
Stott Knob and similar soils: About 20 percent
Dissimilar soils: About 5 percent

Typical Profile

Rhodhiss
Surface layer:
2 to 0 inches—partially decomposed leaf litter and root mat
0 to 4 inches—brown gravelly fine sandy loam

Subsoil:
4 to 8 inches—strong brown gravelly loam
8 to 14 inches—yellowish red loam
14 to 36 inches—red clay loam
36 to 43 inches—red loam

Underlying material:
43 to 51 inches—yellowish red loam
51 to 79 inches—reddish yellow fine sandy loam

Stott Knob
Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 inches—hard mica schist

Soil Properties and Qualities

Depth class: Rhodhiss—very deep; Stott Knob—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Rhodhiss—moderate or high; Stott Knob—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Moderately steep
Stoniness: Stony
Index surface runoff: Rhodhiss—medium or high as the slope increases; Stott Knob—high
Depth to bedrock: Rhodhiss—more than 60 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Fairview soils, which have a more clayey subsoil than the Rhodhiss soil
- Woolwine soils, which have a more clayey subsoil than the Stott Knob soil

Dissimilar:
- Westfield soils, which have a clayey subsoil and have soft bedrock at a depth of 40 to 60 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- This map unit is severely limited for crop production because of the steepness of the slope and the amount of stones on the surface. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Stott Knob soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants; Stott Knob—windthrow hazard

Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Productivity may be limited because of the moderately deep rooting depth of the Stott Knob soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Poorly suited

Management concerns: Slope, erodibility, large stones, and soil fertility; Stott Knob—depth to bedrock

Management measures and considerations:

- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Locating and installing septic tank absorption fields in the deeper Rhodhiss soils may improve the performance of filter fields.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

RsE—Rhodhiss-Stott Knob complex, 25 to 45 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 150 acres

Composition

Rhodhiss and similar soils: About 40 percent
Stott Knob and similar soils: About 40 percent
Dissimilar soils: About 20 percent

Typical Profile

Rhodhiss

Surface layer:
2 to 0 inches—partially decomposed leaf litter and root mat
0 to 4 inches—brown gravelly fine sandy loam

Subsoil:
4 to 8 inches—strong brown gravelly loam
8 to 14 inches—yellowish red loam
14 to 36 inches—red clay loam
36 to 43 inches—red loam

Underlying material:
43 to 51 inches—yellowish red loam
51 to 79 inches—reddish yellow fine sandy loam

Stott Knob
Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 inches—hard mica schist

Soil Properties and Qualities

Depth class: Rhodhiss—very deep; Stott Knob—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Rhodhiss—moderate or high; Stott Knob—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: Rhodhiss—more than 60 inches to hard bedrock; Stott Knob—20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Fairview soils, which have a more clayey subsoil than the Rhodhiss soil
- Woolwine soils, which have a more clayey subsoil than the Stott Knob soil
- Devotion soils, which have less clay in the subsoil than the Stott Knob soil

Dissimilar:
- Meadowfield soils, which have more than 35 percent rock fragments in the subsoil and are on knobs and in the steeper areas
- Rhodhiss soils that have soft bedrock at a depth of 40 to 60 inches
- Hickoryknob soils, which have hard bedrock at a depth of less than 20 inches, are in the steeper areas, and are near rock outcrops
- Areas of rock outcrop

Land Use

Dominant uses: Woodland and pasture

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting the production of pasture and hay crops. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Stott Knob—rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Stott Knob soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, seedling survival and competition from undesirable plants; Stott Knob—windthrow hazard
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Productivity may be limited because of the moderately deep rooting depth of the Stott Knob soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Erodibility, large stones, soil fertility, and slope; Stott Knob—depth to bedrock
Management measures and considerations:
- Locating and installing septic tank absorption fields in the deeper Rhodhiss soil may improve the performance of filter fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

SrC—Siloam-Redbrush complex, 6 to 15 percent slopes

Setting

Landscape: Piedmont uplands
Landform: Interfluves, low hills, and ridges
Geomorphic component: Interfluves, crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 20 acres

Composition

Siloam and similar soils: About 44 percent
Redbrush and similar soils: About 35 percent
Dissimilar soils: About 21 percent

Typical Profile

Siloam
Surface layer:
0 to 10 inches—dark yellowish brown fine sandy loam

Subsoil:
10 to 15 inches—dark yellowish brown sandy clay loam that has dark brown pore fillings and yellowish brown mottles

Bedrock:
15 to 26 inches—soft mafic gneiss
26 inches—hard mafic gneiss

Redbrush
Surface layer:
0 to 5 inches—very dark grayish brown gravelly loam
5 to 8 inches—olive gravelly loam that has yellowish brown pockets of clay loam

Subsoil:
8 to 18 inches—yellowish brown clay that has light olive brown clay films and light olive silt coatings

Underlying material:
18 to 25 inches—black and green loamy saprolite and yellowish brown clay that has light olive brown clay films and olive silt coatings

Bedrock:
25 to 37 inches—soft mafic gneiss
37 inches—hard mafic gneiss

Soil Properties and Qualities

Depth class: Siloam—shallow; Redbrush—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Siloam—moderately high; Redbrush—moderately low or moderately high
Available water capacity: Siloam—very low; Redbrush—very low or low
Shrink-swell potential: Siloam—moderate; Redbrush—high
Erosion class: Slight
Slope class: Strongly sloping
Index surface runoff: High
Depth to bedrock: Siloam—10 to 20 inches to soft bedrock and 20 to 40 inches to hard bedrock; Redbrush—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Soils like the Siloam soil that have a base saturation lower than 35 percent
- Soils like the Redbrush soil that have a red subsoil

Dissimilar:
- Siloam soils that have hard bedrock at a depth of less than 20 inches
- Enott soils, which have a clayey subsoil and have bedrock at a depth of 40 to 60 inches
- Myersville soils, which have a loamy subsoil and have bedrock at a depth of 40 to 60 inches
- Redbrush soils that have gray or gleyed mottles in the subsoil
- Siloam soils that have gray or gleyed mottles in the subsoil
- Spriggs soils, which have a loamy subsoil and have bedrock at a depth of 20 to 40 inches
- Rasalo soils, which have a clayey subsoil and have bedrock at a depth of more than 60 inches
- Oak Level soils, which have a red, clayey subsoil and have bedrock at a depth of more than 60 inches

Land Use

Dominant uses: Pasture, hayland, cropland, and woodland

Cropland
Suitability: Siloam—poorly suited; Redbrush—moderately suited
Management concerns: Erodibility, droughtiness, and rooting depth
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Using supplemental irrigation and planting crop varieties that are adapted to droughty conditions increase crop production.
- The shallow rooting depth of the Siloam soil and the moderately deep rooting depth of the Redbrush soil make this map unit difficult to manage for the economical production of crops.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Siloam—moderately suited to pasture and poorly suited to hayland; Redbrush—well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, and droughtiness; Siloam—rooting depth
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Planting drought-tolerant species increases productivity.
- The shallow rooting depth of the Siloam soil and the moderately deep rooting depth of the Redbrush soil make this map unit difficult to manage for the economical production of pasture and hay crops.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Competition from undesirable plants and windthrow hazard; Siloam—seedling survival

Management measures and considerations:

- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Planting during wet periods or when the soil is moist for extended periods increases the seedling survival rate in the shallow Siloam soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds, the shallow rooting depth of the Siloam soil, and the moderately deep rooting depth of the Redbrush soil.

Urban development

Suitability: Poorly suited

Management concerns: Depth to bedrock, low available water capacity, slow water movement, slope, shrink-swell, and low strength; Redbrush—high clay content

Management measures and considerations:

- This map unit is severely limited for urban development because of depth to bedrock, shrink-swell, low strength, and high clay content. If possible, another site should be selected on better suited soils.

SrE—Siloam-Redbrush complex, 15 to 45 percent slopes

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 60 acres

Composition

Siloam and similar soils: About 59 percent
Redbrush and similar soils: About 10 percent
Dissimilar soils: About 31 percent

Typical Profile

Siloam

Surface layer:
0 to 10 inches—dark yellowish brown fine sandy loam

Subsoil:
10 to 15 inches—dark yellowish brown sandy clay loam that has dark brown pore fillings and yellowish brown mottles

Bedrock:
15 to 26 inches—soft mafic gneiss
26 inches—hard mafic gneiss

Redbrush

Surface layer:
0 to 5 inches—very dark grayish brown gravelly loam
5 to 8 inches—olive gravelly loam that has yellowish brown pockets of clay loam

Subsoil:
8 to 18 inches—yellowish brown clay that has light olive brown clay films and light olive silt coatings

Underlying material:
18 to 25 inches—black and green loamy saprolite and yellowish brown clay that has light olive brown clay films and olive silt coatings

Bedrock:
25 to 37 inches—soft mafic gneiss
37 inches—hard basic gneiss

Soil Properties and Qualities

Depth class: Siloam—shallow; Redbrush—moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Siloam—moderately high; Redbrush—moderately low or moderately high
Available water capacity: Siloam—very low; Redbrush—very low or low
Shrink-swell potential: Siloam—moderate; Redbrush—high
Erosion class: Slight
Slope class: Moderately steep or steep
Index surface runoff: Siloam—high or very high as the slope increases; Redbrush—very high
Depth to bedrock: Siloam—10 to 20 inches to soft bedrock and 20 to 40 inches to hard bedrock; Redbrush—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Soils like the Siloam soil that have a base saturation lower than 35 percent
- Soils like the Redbrush soil that have a red subsoil

Dissimilar:
- Siloam soils that have hard bedrock at a depth of less than 20 inches
- Spriggs soils, which have a loamy subsoil and have bedrock at a depth of 20 to 40 inches
- Rasalo soils, which have a clayey subsoil and have bedrock at a depth of more than 60 inches
- Enott soils, which have a clayey subsoil and have bedrock at a depth of 40 to 60 inches
- Redbrush soils that have a few gray or gleyed mottles in the subsoil
- Oak Level soils, which have a red, clayey subsoil and have bedrock at a depth of more than 60 inches
- Myersville soils, which have a loamy subsoil and have bedrock at a depth of 40 to 60 inches

Land Use

Dominant uses: Pasture, hayland, woodland, and cropland

Cropland
Suitability: Siloam—unsuited; Redbrush—poorly suited where slope is less than 25 percent and unsuited where slope is greater than 25 percent
Management concerns: Erodibility, equipment use, droughtiness, and rooting depth
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.

- Cultivation should be restricted to the less sloping areas in this map unit or a site on better suited soils should be selected.
- Using supplemental irrigation and planting crop varieties that are adapted to droughty conditions increase crop production.
- This map unit is difficult to manage for the economical production of crops because of the shallow rooting depth of the Siloam soil and the moderately deep rooting depth of the Redbrush soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland

Suitability: Siloam—poorly suited to pasture and unsuited to hayland; Redbrush—moderately suited to pasture and poorly suited to hayland

Management concerns: Erodibility, equipment use, and droughtiness; Siloam—rooting depth

Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Planting drought-tolerant species increases productivity.
- The shallow rooting depth of the Siloam soil and the moderately deep rooting depth of the Redbrush soil make this map unit difficult to manage for the economical production of pasture and hay crops.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, windthrow hazard, and competition from undesirable plants; Siloam—seedling survival

Management measures and considerations:

- Restricting timber operations to periods when the soil is not saturated helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Planting seedlings during wet, cool periods increases survival rates.
- Productivity may be increased by planting shallow-rooted trees, such as shortleaf pine and Virginia pine.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds, the shallow rooting depth of the Siloam soil, and the moderately deep rooting depth of the Redbrush soil.

Urban development

Suitability: Poorly suited

Management concerns: Depth to bedrock, erodibility, low available water capacity, low strength, slow water movement, slope, and shrink-swell; Redbrush—high clay content

Management measures and considerations:
- This map unit is severely limited for urban development because of depth to bedrock, shrink-swell, low strength, and high clay content. If possible, another site should be selected on better suited soils.

StC—Stott Knob gravelly loam, 8 to 15 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow bands or irregular; 5 to 100 acres

Composition

Stott Knob and similar soils: About 85 percent
Dissimilar soils: About 15 percent

Typical Profile

Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 inches—hard mica schist

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Woolwine soils, which have a clayey subsoil

Dissimilar:
- Rhodhiss soils that have bedrock at a depth of more than 60 inches

- Meadowfield soils, which have more than 35 percent rock fragments in the subsoil and are on knobs and in the steeper areas
- Westfield soils, which have a clayey subsoil and have soft bedrock at a depth of 40 to 60 inches
- Rhodhiss soils that have bedrock at a depth of 40 to 60 inches
- Hickoryknob soils, which have hard bedrock at a depth of less than 20 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility, equipment use, soil fertility, and rooting depth
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Removing cobbles and stones from the soil surface before establishing crops increases production and minimizes wear on equipment.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth.

Pasture and hayland
Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Windthrow hazard and competition from undesirable plants
Management measures and considerations:
- Productivity may be limited because of the moderately deep rooting depth of the soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, erodibility, large stones, soil fertility, and slope
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the soil is moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.

- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

StD—Stott Knob gravelly loam, 15 to 25 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow bands or irregular; 5 to 100 acres

Composition

Stott Knob and similar soils: About 75 percent
Dissimilar soils: About 25 percent

Typical Profile

Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 inches—hard mica schist

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Moderately steep
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Devotion soils, which have less clay in the subsoil than the Stott Knob soil
- Woolwine soils, which have a clayey subsoil

Dissimilar:
- Rhodhiss soils that have bedrock at a depth of more than 60 inches
- Meadowfield soils, which have more than 35 percent rock fragments in the subsoil and are on knobs and in the steeper areas
- Westfield soils, which have a clayey subsoil and have soft bedrock at a depth of 40 to 60 inches
- Rhodhiss soils that have bedrock at a depth of 40 to 60 inches
- Hickoryknob soils, which have hard bedrock at a depth of less than 20 inches

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, soil fertility, and rooting depth
Management measures and considerations:
- This map unit is severely limited for crop production because of the steepness of the slope, the moderately deep rooting depth, and large stones on the surface. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, windthrow hazard, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of the soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, erodibility, large stones, soil fertility, and slope

Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the soil is moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

StE—Stott Knob gravelly loam, 25 to 45 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and high hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 350 acres

Composition

Stott Knob and similar soils: About 70 percent
Dissimilar soils: About 30 percent

Typical Profile

Surface layer:
1 to 0 inch—leaf litter and twigs
0 to 4 inches—dark yellowish brown gravelly loam

Subsoil:
4 to 11 inches—strong brown gravelly loam
11 to 15 inches—yellowish red gravelly loam
15 to 19 inches—yellowish red gravelly clay loam
19 to 25 inches—yellowish red gravelly loam
25 to 34 inches—yellowish red very gravelly loam

Bedrock:
34 to 49 inches—soft mica schist
49 inches—hard mica schist

Soil Properties and Qualities

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Minor Components

Similar:
- Devotion soils, which have a less clayey subsoil than the Stott Knob soil
- Woolwine soils, which have a clayey subsoil

Dissimilar:
- Rhodhiss soils that have bedrock at a depth of more than 60 inches
- Rhodhiss soils that have bedrock at a depth of 40 to 60 inches
- Meadowfield soils, which have more than 35 percent rock fragments in the subsoil and are on knobs and in the steeper areas
- Hickoryknob soils, which have hard bedrock at a depth of less than 20 inches
- The well drained Colvard soils in small drainageways
- The well drained and moderately well drained Suches soils in small drainageways

Land Use

Dominant uses: Woodland and pasture

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, soil fertility, and rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, rooting depth, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing cobbles and stones from the soil surface before establishing the sod increases production and minimizes wear on equipment.
- This map unit may be difficult to manage for the production of pasture and hay crops during years that have low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, windthrow hazard, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Productivity may be limited because of the moderately deep rooting depth of the soil.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Depth to bedrock, erodibility, large stones, soil fertility, and slope
Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because the soil is moderately deep.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Large stones and boulders may be encountered during excavation and should be removed.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

TaD—Tate extremely gravelly fine sandy loam, 8 to 25 percent slopes, extremely stony

Setting

Landscape: Pilot Mountain
Landform: Fans
Geomorphic component: Mountain bases
Shape and size of areas: Long and narrow or irregular; 5 to 75 acres

Composition

Tate and similar soils: About 85 percent
Dissimilar soils: About 15 percent

Typical Profile

Surface layer:
0 to 5 inches—dark grayish brown extremely gravelly fine sandy loam

Subsurface layer:
5 to 11 inches—yellowish brown very gravelly fine sandy loam

Subsoil:
11 to 16 inches—brownish yellow gravelly fine sandy loam
16 to 36 inches—yellowish brown gravelly sandy clay loam
36 to 43 inches—light yellowish brown gravelly sandy clay loam

Underlying material:
43 to 79 inches—light yellowish brown very gravelly fine sandy loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Depth to seasonal high water table: More than 6.0 feet
Shrink-swell potential: Low
Slope class: Strongly sloping or moderately steep
Stoniness: Extremely stony

Index surface runoff: Medium or high as the slope increases
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Brevard soils, which have a redder subsoil than the Tate soil
- Braddock soils, which have a redder, more clayey subsoil than the Tate soil
- Unison soils, which have a yellow, clayey subsoil

Dissimilar:
- Pilot Mountain soils, which have more than 35 percent rock fragments in the subsoil
- Pilot Mountain soils that are clayey
- Tate soils that have bedrock at a depth of 40 to 60 inches
- Greenlee soils, which have more than 35 percent rock fragments
- Ostin soils, which have sandy horizons, have more than 35 percent rock fragments below the surface layer, and are in small drainageways

Land Use

Dominant uses: Woodland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is severely limited for crop production because of the large amount of stones on the surface and the steepness of the slope. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Removing the larger stones or limiting the use of equipment to the larger, open areas may be needed.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants
Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Poorly suited
Management concerns: Large stones, erodibility, and slope
Management measures and considerations:
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Large stones and boulders may be encountered during excavation and should be removed.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

TcC—Tate-Colvard complex, 0 to 15 percent slopes, frequently flooded

Setting

Landscape: Blue Ridge mountains and Blue Ridge foothill valleys
Landform: Tate—fans and stream terraces; Colvard—flood plains
Geomorphic component: Tate—mountain bases, base slopes, treads, and risers; Colvard—talfs, rises, and dips
Shape and size of areas: Long and narrow; 5 to 70 acres

Composition

Tate and similar soils: About 48 percent
Colvard and similar soils: About 24 percent
Dissimilar soils: About 28 percent

Typical Profile

Tate
Surface layer:
0 to 5 inches—dark grayish brown fine sandy loam

Subsoil:
5 to 14 inches—yellowish brown sandy clay loam
14 to 33 inches—brownish yellow sandy clay loam
33 to 41 inches—light yellowish brown sandy clay loam
41 to 47 inches—light yellowish brown fine sandy loam

Underlying material:
47 to 52 inches—brownish yellow very gravelly sandy loam
52 to 79 inches—pale brown, brownish yellow, and very pale brown gravelly loamy fine sand

Colvard
Surface layer:
0 to 10 inches—dark yellowish brown fine sandy loam

Underlying material:
10 to 15 inches—strong brown fine sandy loam
15 to 50 inches—brown fine sandy loam
50 to 79 inches—brown gravelly loamy fine sand

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Tate—moderately high; Colvard—high
Available water capacity: Tate—moderate or high; Colvard—low or moderate
Depth to seasonal high water table: Tate—more than 6.0 feet; Colvard—4.0 to 6.0 feet
Flooding: Tate—none; Colvard—frequent
Shrink-swell potential: Low
Slope class: Tate—gently sloping to moderately steep; Colvard—nearly level
Index surface runoff: Tate—low or medium as the slope increases; Colvard—very low
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Brevard soils, which have a redder subsoil than the Tate soil
- Braddock soils, which are redder and have a more clayey subsoil than the Tate soil
- Tate soils that have gray mottles in the lower part of the subsoil or in the underlying material

Dissimilar:
- The moderately well drained Dillard soils on fans and terraces
- The well drained and moderately well drained Suches soils on flood plains
- Biltmore soils, which have a sandy substrata and are adjacent to stream channels
- The somewhat poorly drained Bandana soils in depressions on flood plains
- The somewhat poorly drained and moderately well drained Delanco soils on terraces
- The very poorly drained and poorly drained Nikwasi soils in depressions on flood plains
- Ostin soils, which have sandy horizons, have more than 35 percent rock fragments below the surface layer, and are on flood plains
- Pilot Mountain soils, which have more than 35 percent rock fragments in the subsoil and are on fans
- The poorly drained Chatuge soils on terraces
- Cowee soils, which have soft bedrock at a depth of 20 to 40 inches and are on adjacent residual footslopes

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Moderately suited
Management concerns: Soil fertility; Tate—erodibility; Colvard—flooding
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration in areas of the Tate soil.
- Although most flooding occurs during the winter, crops may be damaged during the growing season in areas of the Colvard soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Tate—well suited to pasture and well suited or moderately suited to hayland; Colvard—well suited to pasture and moderately suited to hayland

Management concerns: Tate—erodibility and equipment use; Colvard—flooding
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope helps to control soil erosion and increases germination in areas of the Tate soil.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Although most flooding occurs during the winter, livestock production and hay crops may be damaged any time of the year in areas of the Colvard soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Competition from undesirable plants and equipment use
Management measures and considerations:
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.
- Harvesting timber during the summer reduces the risk of damage from flooding.

Urban development
Suitability: Tate—moderately suited; Colvard—poorly suited
Management concerns: Tate—slope and seepage; Colvard—flooding
Management measures and considerations:
- Locating and installing septic tank absorption fields in the nonflooded Tate soil may improve system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields in areas of the Tate soil.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

ToB—Toast coarse sandy loam, 2 to 8 percent slopes, rocky

Setting

Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Geomorphic component: Interfluves and crests
Shape and size of areas: Irregular; 5 to 150 acres

Composition

Toast and similar soils: About 93 percent
Dissimilar soils: About 7 percent

Typical Profile

Surface layer:
0 to 8 inches—brown coarse sandy loam

Subsoil:
8 to 23 inches—yellowish brown clay that has strong brown and red mottles
23 to 29 inches—yellowish brown, brownish yellow, and light red sandy clay that has pockets of sandy clay loam

Underlying material:
29 to 79 inches—variegated coarse sandy loam saprolite that has pockets of sandy clay loam

Soil Properties and Qualities

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Gently sloping
Extent of rock outcrops: Rock outcrops cover about 1 percent of the soil surface
Index surface runoff: Medium
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Rhodhiss soils, which have less clay in the subsoil than the Toast soil
- Fairview soils, which have a redder subsoil than the Toast soil and are along the edges of map units where the parent material is intermixed

Dissimilar:
- Devotion soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Hickoryknob soils, which have a loamy subsoil and have hard bedrock at a depth of less than 20 inches
- Saw soils, which have hard bedrock at a depth of 20 to 40 inches
- Casville soils, which have a clayey subsoil that has a very firm, moist consistence and are in slightly concave areas

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Moderately suited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Resource management systems that include diversions, stripcropping, contour tillage, no-till farming, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- This map unit is difficult to manage for cropland because of the areas of rock outcrop.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited
Management concerns: Erodibility, equipment use, and soil fertility
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- This map unit is difficult to manage for pasture and hayland because of the areas of rock outcrop.

- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use and competition from undesirable plants
Management measures and considerations:
- Constructing roads, fire lanes, and skid trails on the contour and, where possible, around rock outcrops helps to overcome the slope limitation.
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Moderately suited
Management concerns: Slow water movement, high clay content, low strength, erodibility, and areas of rock outcrop
Management measures and considerations:
- Areas of rock outcrop limit the development of urban facilities in this map unit and should be avoided when installing sanitary facilities.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

TtC—Toast-Bannertown complex, 8 to 15 percent slopes, very rocky

Setting

Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Geomorphic component: Interfluves, crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 200 acres

Composition

Toast and similar soils: About 65 percent
Bannertown and similar soils: About 17 percent
Dissimilar soils: About 18 percent

Typical Profile

Toast
Surface layer:
0 to 8 inches—brown coarse sandy loam

Subsoil:
8 to 23 inches—yellowish brown clay that has strong brown and red mottles
23 to 29 inches—yellowish brown, brownish yellow, and light red sandy clay that has pockets of sandy clay loam

Underlying material:
29 to 79 inches—variegated coarse sandy loam saprolite that has pockets of sandy clay loam

Bannertown
Surface layer:
0 to 4 inches—dark brown gravelly coarse sandy loam

Subsoil:
4 to 8 inches—brown gravelly coarse sandy loam
8 to 14 inches—yellowish brown gravelly coarse sandy loam
14 to 19 inches—light yellowish brown gravelly coarse sandy loam

Underlying material:
19 to 27 inches—light yellowish brown gravelly coarse sandy loam saprolite

Bedrock:
27 to 30 inches—light gray, soft granite
30 inches—light gray, hard granite

Soil Properties and Qualities

Depth class: Toast—very deep; Bannertown—moderately deep
Agricultural drainage class: Toast—well drained; Bannertown—somewhat excessively drained
Saturated hydraulic conductivity class: Toast—moderately high; Bannertown—high
Available water capacity: Toast—low or moderate; Bannertown—very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping
Extent of rock outcrops: Rock outcrops cover about 5 percent of the soil surface
Index surface runoff: Toast—medium; Bannertown—high
Depth to bedrock: Toast—more than 60 inches to hard bedrock; Bannertown—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Rhodhiss soils, which have less clay in the subsoil than the Toast soil
- Fairview soils, which have a redder subsoil than the major soils and are along the edges of map units where the parent material is intermixed

Dissimilar:
- Hickoryknob soils that have a loamy subsoil and have hard bedrock at a depth of 20 to 40 inches
- Soils that are like the Hickoryknob soil and have a loamy subsoil and have hard bedrock at a depth of less than 20 inches
- Devotion soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Casville soils, which have a clayey subsoil that has a very firm, moist consistence and are in slightly concave areas

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland

Suitability: Moderately suited

Management concerns: Erodibility, equipment use, and soil fertility; Bannertown—droughtiness and rooting depth

Management measures and considerations:

- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- This map unit is difficult to manage for cropland because of the areas of rock outcrop.
- Using supplemental irrigation and planting crop varieties that are adapted to droughty conditions increase crop production in areas of the Bannertown soil.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the Bannertown soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland

Suitability: Well suited to pasture and moderately suited to hayland

Management concerns: Erodibility, equipment use, and soil fertility; Bannertown—droughtiness and rooting depth

Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- This map unit is difficult to manage for pasture and hayland because of the areas of rock outcrop.
- Areas of this map unit may be difficult to manage for the production of pasture and hay crops because of the low available water capacity caused by the moderately deep rooting depth of the Bannertown soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Equipment use, seedling survival, and competition from undesirable plants; Bannertown—windthrow hazard

Management measures and considerations:

- Constructing roads, fire lanes, and skid trails on the contour and, where possible, around rock outcrops helps to overcome the slope limitation.
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Planting during wet periods or when the soil is moist for extended periods increases the seedling survival rate.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds and the limited rooting depth of the Bannertown soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Toast—moderately suited; Bannertown—poorly suited

Management concerns: Areas of rock outcrop, slope, soil fertility, and erodibility; Toast—slow water movement, high clay content, and low strength; Bannertown—depth to bedrock and droughtiness

Management measures and considerations:
- Areas of rock outcrop limit the development of urban facilities in this map unit and should be avoided when installing sanitary facilities.
- Locating and installing septic tank absorption fields in the deeper Toast soil may improve the performance of filter fields.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

TuB—Toast-Urban land complex, 2 to 8 percent slopes, rocky

Setting

Landscape: Piedmont uplands in and near the town of Mount Airy
Landform: Interfluves, ridges, and low hills
Geomorphic component: Interfluves and crests
Shape and size of areas: Irregular; 5 to 150 acres

Composition

Toast and similar soils: About 64 percent
Urban land: About 31 percent
Dissimilar soils: About 5 percent

Typical Profile

Toast
Surface layer:
0 to 8 inches—brown coarse sandy loam

Subsoil:
8 to 23 inches—yellowish brown clay that has strong brown and red mottles
23 to 29 inches—yellowish brown, brownish yellow, and light red sandy clay that has pockets of sandy clay loam

Underlying material:
29 to 79 inches—variegated coarse sandy loam saprolite that has pockets of sandy clay loam

Urban land
Urban land consists of areas covered by impervious material, such as buildings, houses, parking lots, roads, and streets.

Soil Properties and Qualities

Depth class: Toast—very deep; Urban land—impervious cover
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Low or moderate

Shrink-swell potential: Low
Erosion class: Slight
Slope class: Gently sloping
Extent of rock outcrops: Rock outcrop covers about 1 percent of the soil surface
Index surface runoff: Toast—medium; Urban land—very high
Depth to bedrock: More than 60 inches to hard bedrock

Minor Components

Similar:
- Rhodhiss soils, which have less clay in the subsoil than the Toast soil
- Fairview soils, which have a redder subsoil than the Toast soil and are along the edges of map units where the parent material is intermixed

Dissimilar:
- Devotion soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Hickoryknob soils, which have a loamy subsoil and have hard bedrock at a depth of less than 20 inches
- Saw soils, which have hard bedrock at a depth of 20 to 40 inches
- Toast soils that have hard bedrock at a depth of 40 to 60 inches
- Casville soils, which have a clayey subsoil that has a very firm, moist consistence and are in slightly concave areas
- Udorthents, which are areas where the natural soil has been removed or modified

Land Use

Dominant uses: Urban development

Cropland
Suitability: Poorly suited
Management concerns: Limited size of areas, erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for crop production because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited
Management concerns: Limited size of areas, erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for the production of pasture and hay crops because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Limited size of areas, seedling survival, and competition from undesirable plants
Management measures and considerations:
- This map unit is difficult to manage for timber production because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils. If possible, another site should be selected on better suited soils.

Urban development
Suitability: Moderately suited (fig. 17)

Figure 17.—An area of Toast-Urban land-Bannertown complex, 8 to 15 percent slopes, very rocky.

Management concerns: Low strength, slow water movement, high clay content, erodibility, and areas of rock outcrop

Management measures and considerations:

- The limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils may make it difficult to find suitable areas for installing sanitary facilities.
- Areas of rock outcrop limit the development of urban facilities in this map unit and should be avoided when installing sanitary facilities.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

TwC—Toast-Urban land-Bannertown complex, 8 to 15 percent slopes, very rocky

Setting

Landscape: Piedmont uplands in and near the town of Mount Airy

Landform: Interfluves, ridges, and low hills

Geomorphic component: Interfluves, crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Irregular; 5 to 200 acres

Composition

Toast and similar soils: About 45 percent
Urban land: About 31 percent
Bannertown and similar soils: About 12 percent
Dissimilar soils: About 12 percent

Typical Profile

Toast
Surface layer:
0 to 8 inches—brown coarse sandy loam

Subsoil:
8 to 23 inches—yellowish brown clay that has strong brown and red mottles
23 to 29 inches—yellowish brown, brownish yellow, and light red sandy clay that has pockets of sandy clay loam

Underlying material:
29 to 79 inches—variegated coarse sandy loam saprolite that has pockets of sandy clay loam

Urban land
Urban land consists of areas covered by impervious material, such as buildings, houses, parking lots, roads, and streets.

Bannertown
Surface layer:
0 to 4 inches—dark brown gravelly coarse sandy loam

Subsoil:
4 to 8 inches—brown gravelly coarse sandy loam
8 to 14 inches—yellowish brown gravelly coarse sandy loam
14 to 19 inches—light yellowish brown gravelly coarse sandy loam

Underlying material:
19 to 27 inches—light yellowish brown gravelly coarse sandy loam saprolite

Bedrock:
27 to 30 inches—light gray, soft granite
30 inches—light gray, hard granite

Soil Properties and Qualities

Depth class: Toast—very deep; Urban land—impervious cover; Bannertown—moderately deep
Agricultural drainage class: Toast—well drained; Bannertown—somewhat excessively drained
Saturated hydraulic conductivity class: Toast—moderately high; Bannertown—high
Available water capacity: Toast—low or moderate; Bannertown—very low or low
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Strongly sloping
Extent of rock outcrops: Rock outcrop covers about 5 percent of the soil surface
Index surface runoff: Toast—medium; Bannertown—high; Urban land—very high

Depth to bedrock: Toast—more than 60 inches to hard bedrock; Bannertown—20 to 40 inches to hard bedrock

Minor Components

Similar:
- Rhodhiss soils, which have less clay in the subsoil than the Toast soil
- Fairview soils, which have a redder subsoil than the major soils and are along the edges of map units where the parent material is intermixed

Dissimilar:
- Hickoryknob soils that have a loamy subsoil and have hard bedrock at a depth of 20 to 40 inches
- Hickoryknob soils that have a loamy subsoil and have bedrock at a depth of less than 20 inches
- Devotion soils, which have a loamy subsoil and have soft bedrock at a depth of 20 to 40 inches
- Toast soils that have hard bedrock at a depth of 40 to 60 inches
- Casville soils, which have a clayey subsoil that has a very firm, moist consistence and are in slightly concave areas
- Udorthents, which are areas where the natural soil has been removed or modified

Land Use

Dominant uses: Urban development

Cropland
Suitability: Poorly suited
Management concerns: Limited size of areas, erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for crop production because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited
Management concerns: Limited size of areas, erodibility, equipment use, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for the production of pasture and hay crops because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Limited size of areas, seedling survival, and competition from undesirable plants
Management measures and considerations:
- This map unit is difficult to manage for timber production because of the limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils. If possible, another site should be selected on better suited soils.

Urban development
Suitability: Toast—moderately suited; Bannertown—poorly suited
Management concerns: Slope, erodibility, and areas of rock outcrop; Toast—low strength, slow water movement, high clay content; Bannertown—depth to bedrock and droughtiness

Management measures and considerations:
- The limited size of individual areas, the intermittent areas of urban land, and the areas of highly disturbed soils may make it difficult to find suitable areas for installing sanitary facilities.
- Areas of rock outcrop limit the development of urban facilities in this map unit and should be avoided when installing sanitary facilities.
- Locating and installing septic tank absorption fields in the deeper Toast soil may improve the performance of filter fields.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

Ud—Udorthents, loamy

Setting

Landscape: Piedmont and Blue Ridge foothill uplands and valleys
Shape and size of areas: Irregular; 5 to 100 acres

Composition

Udorthents and similar soils: About 85 percent
Dissimilar soils: About 15 percent

Typical Profile

Udorthents consist of cut and fill areas, where soil has been removed and placed on an adjacent site; borrow pits, where soil has been removed and placed on a remote site; and fill areas, which consist of earthy material removed from borrow pits, soil and wood from stump removal, and construction material from demolition sites. To a lesser extent, it includes landfills. Udorthents have a dominant loamy texture.

Soil Properties and Qualities

Note: Soil properties are variable and depend on the type of fill material used and the type of material left exposed at the surface, including bedrock in some places.

Depth class: Very deep to shallow
Agricultural drainage class: Dominantly well drained
Saturated hydraulic conductivity class: Moderately high or high
Available water capacity: Low or moderate
Shrink-swell potential: Low or moderate
Erosion class: None to severe
Slope class: Mostly nearly level to strongly sloping with some areas ranging to very steep
Index surface runoff: Negligible to very high as the slope increases
Depth to bedrock: Variable, mostly greater than 60 inches

Minor Components

Similar:
- Udorthents that are dominantly clayey or sandy and have bedrock at a depth of more than 40 inches

Dissimilar:
- Udorthents that have bedrock at a depth of less than 40 inches
- Udorthents that are somewhat poorly drained and are in borrow pits and on stream terraces
- Udorthents that are adjacent to streams and are subject to occasional flooding
- Udorthents that contain asphalt, wood, glass, and other waste material
- Udorthents that have nearly vertical slopes and are around the perimeter of some map units
- Small areas of undisturbed natural soil

Land Use

Dominant uses: Urban land, recreational development, woodland, cropland, pasture, and hayland

Cropland
Suitability: Poorly suited
Management concerns: Highly disturbed soils, limited size of areas, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for crop production because of the highly variable soil properties and the small size of individual areas.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Moderately suited to pasture and poorly suited to hayland
Management concerns: Highly disturbed soils, limited size of areas, and soil fertility
Management measures and considerations:
- This map unit is difficult to manage for the production of pasture and hay crops because of the highly variable soil properties.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Limited size of areas and highly disturbed soils
Management measures and considerations:
- This map unit is difficult to manage for timber production because of the limited size of individual areas and areas of highly disturbed soils.

Recreational development
Suitability: Poorly suited
Management concerns: Highly disturbed soils and differential settling
Management measures and considerations:
- This map unit may work well for some forms of recreational development. The highly variable properties of the soils should be considered when planning and installing facilities.

Urban development
Suitability: Poorly suited, unless filled areas are well compacted and contain very little woody material
Management concerns: Highly disturbed soils and differential settling

Management measures and considerations:
- This map unit is severely limited for urban development because of the great variability in soil characteristics. If possible, another site should be selected on better suited soils.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

Ur—Urban land

Setting

Landscape: Piedmont uplands and valleys
Shape and size of areas: Irregular; 5 to 100 acres

Composition

Urban land: 85 percent or more
Dissimilar components: 15 percent or less

Typical Profile

This map unit consists of the commercial and industrial areas in Surry County, mostly around the towns of Mount Airy, Elkin, and Pilot Mountain. These areas are located mostly on uplands and a few areas are located on stream terraces and flood plains.

The original soils have been greatly altered by cutting, filling, grading, and shaping so that the original topography and often the drainage have been changed. The soils are then covered by paved streets and parking lots, buildings, and other impervious structures.

Soil Properties and Qualities

Note: Nearly all of the surface area of Urban land is impervious to precipitation.

Slope class: Nearly level or gently sloping
Index surface runoff: Very high

Minor Components

Similar:
- Gravel-covered streets and parking lots that are nearly impervious

Dissimilar:
- Small areas of natural soil or Udorthents used for lawns, playgrounds, parks, cemeteries, or drainageways

Land Use

Dominant uses: Urban land

Cropland
Suitability: Unsuited
Management concerns: Impervious cover and natural soil destroyed
Management measures and considerations:
- This map unit is severely limited for crop production because of the impervious cover. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Unsuited
Management concerns: Impervious cover and natural soil destroyed

Management measures and considerations:
- This map unit is severely limited for the production of pasture and hay crops because of the impervious cover. If possible, another site should be selected on better suited soils.

Woodland
Management concerns: Impervious cover and natural soil destroyed
Management measures and considerations:
- This map unit is severely limited for timber production because of the impervious cover. If possible, another site should be selected on better suited soils.

Urban development
Suitability: Moderately suited
Management concerns: Highly disturbed soils and differential settling if proper compaction was not accomplished while soils were being manipulated
Management measures and considerations:
- The Surry County Building inspector can be contacted for guidance regarding development and maintenance of Urban land.

W—Water

This map unit consists of bodies of water, such as lakes and ponds. It also includes areas of wide perennial streams or rivers. No interpretations are given for this map unit.

WfB2—Woolwine-Fairview-Westfield complex, 2 to 8 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Geomorphic component: Interfluves and crests
Shape and size of areas: Irregular; 5 to 200 acres

Composition

Woolwine and similar soils: About 48 percent
Fairview and similar soils: About 34 percent
Westfield and similar soils: About 17 percent
Dissimilar soils: About 1 percent

Typical Profile

Woolwine
Surface layer:
0 to 4 inches—strong brown gravelly loam

Subsoil:
4 to 8 inches—yellowish red clay loam
8 to 17 inches—red clay
17 to 30 inches—red gravelly clay

Bedrock:
30 to 79 inches—variegated, soft mica schist

Fairview
Surface layer:
0 to 4 inches—dark brown gravelly sandy clay loam

Subsurface layer:
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Westfield
Surface layer:
0 to 9 inches—yellowish red gravelly sandy clay loam

Subsoil:
9 to 13 inches—yellowish red clay loam
13 to 28 inches—red clay
28 to 35 inches—red gravelly sandy clay loam that has pockets of clay loam

Underlying material:
35 to 48 inches—yellow, brown, and red gravelly loam saprolite

Bedrock:
48 to 79 inches—soft mica schist

Soil Properties and Qualities

Depth class: Woolwine—moderately deep; Fairview—very deep; Westfield—deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Woolwine—very low or low; Fairview—moderate or high; Westfield—low or moderate
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Gently sloping
Index surface runoff: Woolwine—high; Fairview and Westfield—low or medium as the slope increases
Depth to bedrock: Woolwine—20 to 40 inches to soft bedrock and more than 60 inches to hard bedrock; Fairview—more than 60 inches to hard bedrock; Westfield—40 to 60 inches to soft bedrock and more than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have a thicker layer of clay than the Fairview soil
- Rhodhiss soils, which have less clay in the subsoil than the Fairview soil
- Stott Knob soils, which have less clay in the subsoil than the Woolwine soil
- Braddock soils, which formed in very old alluvium, are in flats or concave areas protected from erosion, and are similar to the Fairview soil

Dissimilar:
- Woolwine soils that have bedrock at a depth of less than 20 inches because of severe erosion
- Stott Knob soils that have bedrock at a depth of less than 20 inches because of severe erosion

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland

Suitability: Moderately suited (fig. 18)

Management concerns: Erodibility and soil fertility; Woolwine—droughtiness and rooting depth

Management measures and considerations:

- Resource management systems that include diversions, stripcropping, contour tillage, no-till farming, and crop residue management reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the Woolwine soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland

Suitability: Well suited

Management concerns: Erodibility and soil fertility; Woolwine—rooting depth and droughtiness

Figure 18.—Tobacco growing in an area of Woolwine-Fairview-Westfield complex, 2 to 8 percent slopes, moderately eroded. The soils of this map unit generally have a gravelly surface.

Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- Areas of this map unit may be difficult to manage for the production of pasture during years of low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Woolwine soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Equipment use, seedling survival, and competition from undesirable plants; Woolwine—windthrow hazard

Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces mortality, and increases early seedling growth.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds and the limited rooting depth of the Woolwine soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Woolwine—poorly suited; Fairview and Westfield—moderately suited

Management concerns: Erodibility, low strength, slow water movement, and high clay content; Woolwine—depth to bedrock

Management measures and considerations:
- Locating and installing septic tank absorption fields in the deeper Fairview and Westfield soils may improve the performance of filter fields (fig. 19).
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

WfC2—Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, moderately eroded

Setting

Landscape: Piedmont uplands

Landform: Interfluves, ridges, and low hills

Geomorphic component: Interfluves, crests, side slopes, head slopes, and nose slopes

Shape and size of areas: Irregular; 5 to 150 acres

Figure 19.—Homesite in an area of Woolwine-Fairview-Westfield complex, 2 to 8 percent slopes, moderately eroded. The Blue Ridge Escarpment in the background.

Composition

Woolwine and similar soils: About 50 percent
Fairview and similar soils: About 32 percent
Westfield and similar soils: About 13 percent
Dissimilar soils: About 5 percent

Typical Profile

Woolwine
Surface layer:
0 to 4 inches—strong brown gravelly loam

Subsoil:
4 to 8 inches—yellowish red clay loam
8 to 17 inches—red clay
17 to 30 inches—red gravelly clay

Bedrock:
30 to 79 inches—variegated, soft mica schist

Fairview
Surface layer:
0 to 4 inches—dark brown gravelly sandy clay loam

Subsurface layer:
4 to 9 inches—strong brown sandy clay loam

Subsoil:
9 to 24 inches—red clay

24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

Westfield
Surface layer:
0 to 9 inches—yellowish red gravelly sandy clay loam

Subsoil:
9 to 13 inches—yellowish red clay loam
13 to 28 inches—red clay
28 to 35 inches—red gravelly sandy clay loam that has pockets of clay loam

Underlying material:
35 to 48 inches—yellow, brown, and red gravelly loam saprolite

Bedrock:
48 to 79 inches—soft mica schist

Soil Properties and Qualities

Depth class: Woolwine—moderately deep; Fairview—very deep; Westfield—deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Woolwine—very low or low; Fairview—moderate or high; Westfield—low or moderate
Shrink-swell potential: Low
Erosion class: Moderate
Slope class: Strongly sloping
Index surface runoff: Woolwine—high; Fairview and Westfield—medium
Depth to bedrock: Woolwine—20 to 40 inches to soft bedrock and more than 60 inches to hard bedrock; Fairview—more than 60 inches to hard bedrock; Westfield—40 to 60 inches to soft bedrock and more than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have a thicker layer of clay than the Fairview soil
- Stott Knob soils, which have less clay in the subsoil than the Woolwine soil
- Rhodhiss soils, which have less clay in the subsoil than the Fairview soil
- Braddock soils, which formed in old alluvium, are on narrow toeslopes, and are similar to the Fairview soil

Dissimilar:
- Woolwine soils that have bedrock at a depth of less than 20 inches because of severe erosion
- Stott Knob soils that have bedrock at a depth of less than 20 inches because of severe erosion
- Meadowfield soils, which have a loamy subsoil that has more than 35 percent rock fragments, have hard bedrock at a depth of 20 to 40 inches, and are in narrow, sharply dissected areas

Land Use

Dominant uses: Cropland, pasture, hayland, and woodland

Cropland
Suitability: Moderately suited
Management concerns: Erodibility and soil fertility; Woolwine—droughtiness and rooting depth

Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the Woolwine soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland
Suitability: Well suited to pasture and moderately suited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Woolwine—rooting depth and droughtiness
Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Areas of this map unit may be difficult to manage for the production of pasture during years of low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Woolwine soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland
Management concerns: Equipment use, seedling survival, and competition from undesirable plants; Woolwine—windthrow hazard
Management measures and considerations:
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces mortality, and increases early seedling growth.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds and the limited rooting depth of the Woolwine soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development
Suitability: Woolwine—poorly suited; Fairview and Westfield—moderately suited
Management concerns: Erodibility, low strength, slow water movement, high clay content, and slope; Woolwine—depth to bedrock
Management measures and considerations:
- Locating and installing septic tank absorption fields in the deeper Fairview and Westfield soils may improve the performance of filter fields.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

WoD—Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Crests, side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow or irregular; 5 to 150 acres

Composition

Woolwine and similar soils: About 53 percent
Fairview and similar soils: About 26 percent
Westfield and similar soils: About 13 percent
Dissimilar soils: About 8 percent

Typical Profile

Woolwine
Surface layer:
0 to 4 inches—strong brown gravelly loam

Subsoil:
4 to 8 inches—yellowish red clay loam
8 to 17 inches—red clay
17 to 30 inches—red gravelly clay

Bedrock:
30 to 79 inches—variegated, soft mica schist

Fairview
Surface layer:
0 to 2 inches—dark brown gravelly fine sandy loam

Subsurface layer:
2 to 5 inches—brown fine sandy loam

Subsoil:
5 to 9 inches—yellowish red sandy clay loam
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

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

Subsurface layer:
3 to 7 inches—brown fine sandy loam

Subsoil:
7 to 13 inches—yellowish red clay loam
13 to 28 inches—red clay
28 to 35 inches—red gravelly sandy clay loam that has pockets of clay loam

Underlying material:
35 to 48 inches—yellow, brown, and red gravelly loam saprolite

Bedrock:
48 to 79 inches—soft mica schist

Soil Properties and Qualities

Depth class: Woolwine—moderately deep; Fairview—very deep; Westfield—deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Woolwine—very low or low; Fairview—moderate or high; Westfield—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Moderately steep
Index surface runoff: Woolwine—high; Fairview and Westfield—medium to high
Stoniness: Stony
Depth to bedrock: Woolwine—20 to 40 inches to soft bedrock and more than 60 inches to hard bedrock; Fairview—more than 60 inches to hard bedrock; Westfield—40 to 60 inches to soft bedrock and more than 60 inches to hard bedrock

Minor Components

Similar:
- Clifford soils, which have a thicker layer of clay than the Fairview soil
- Stott Knob soils, which have less clay in the subsoil than the Woolwine soil
- Rhodhiss soils, which have less clay in the subsoil than the Fairview soil
- Braddock soils, which formed in old alluvium, are on narrow footslopes and toeslopes, and are similar to the Fairview soil

Dissimilar:
- Woolwine soils that have bedrock at a depth of less than 20 inches because of severe erosion
- Stott Knob soils that have bedrock at a depth of less than 20 inches because of severe erosion
- Meadowfield soils, which have a loamy subsoil that has more than 35 percent rock fragments, have hard bedrock at a depth of 20 to 40 inches, and are in narrow, sharply dissected areas
- The well drained and moderately well drained Suches soils in small drainageways
- The somewhat poorly drained Arkaqua soils in small drainageways

Land Use

Dominant uses: Woodland, pasture, hayland, and cropland

Cropland
Suitability: Poorly suited
Management concerns: Erodibility, equipment use, and soil fertility; Woolwine—droughtiness and rooting depth
Management measures and considerations:
- Resource management systems that include contour farming, conservation tillage, crop residue management, stripcropping, and sod-based rotations reduce the hazard of erosion, help to control surface runoff, and maximize water infiltration.
- This map unit is difficult to manage for cultivated crops because the slope limits the use of equipment.
- Planting shallow-rooted crops helps to overcome the moderately deep rooting depth of the Woolwine soil.

- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity.

Pasture and hayland

Suitability: Moderately suited to pasture and poorly suited to hayland

Management concerns: Erodibility, equipment use, and soil fertility; Woolwine—rooting depth and droughtiness

Management measures and considerations:

- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- Areas of this map unit may be difficult to manage for the production of pasture during years of low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Woolwine soil.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants; Woolwine—windthrow hazard

Management measures and considerations:

- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Special site preparation, such as harrowing and bedding, helps to establish seedlings, reduces mortality, and increases early seedling growth.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds and the limited rooting depth of the Woolwine soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Poorly suited

Management concerns: Erodibility, low strength, slow water movement, high clay content, and slope; Woolwine and Westfield—depth to bedrock

Management measures and considerations:

- Locating and installing septic tank absorption fields in the deeper Fairview and Westfield soils may improve the performance of filter fields.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Installing distribution lines on the contour improves performance of septic tank absorption fields.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

WoE—Woolwine-Fairview-Westfield complex, 25 to 45 percent slopes, stony

Setting

Landscape: Piedmont uplands
Landform: Ridges and low hills
Geomorphic component: Side slopes, head slopes, and nose slopes
Shape and size of areas: Long and narrow; 5 to 100 acres

Composition

Woolwine and similar soils: About 47 percent
Fairview and similar soils: About 24 percent
Westfield and similar soils: About 10 percent
Dissimilar soils: About 19 percent

Typical Profile

Woolwine
Surface layer:
0 to 4 inches—strong brown gravelly loam

Subsoil:
4 to 8 inches—yellowish red clay loam
8 to 17 inches—red clay
17 to 30 inches—red gravelly clay

Bedrock:
30 to 79 inches—variegated, soft mica schist

Fairview
Surface layer:
0 to 2 inches—dark brown gravelly fine sandy loam

Subsurface layer:
2 to 5 inches—brown fine sandy loam

Subsoil:
5 to 9 inches—yellowish red sandy clay loam
9 to 24 inches—red clay
24 to 29 inches—red clay loam

Underlying material:
29 to 79 inches—red loam saprolite

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

Subsurface layer:
3 to 7 inches—brown fine sandy loam

Subsoil:
7 to 13 inches—yellowish red clay loam
13 to 28 inches—red clay
28 to 35 inches—red gravelly sandy clay loam that has pockets of clay loam

Underlying material:
35 to 48 inches—yellow, brown, and red gravelly loam saprolite

Bedrock:
48 to 79 inches—soft mica schist

Soil Properties and Qualities

Depth class: Woolwine—moderately deep; Fairview—very deep; Westfield—deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Available water capacity: Woolwine—very low or low; Fairview—moderate or high; Westfield—low or moderate
Shrink-swell potential: Low
Erosion class: Slight
Slope class: Steep
Stoniness: Stony
Index surface runoff: High
Depth to bedrock: Woolwine—20 to 40 inches to soft bedrock and more than 60 inches to hard bedrock; Fairview—more than 60 inches to hard bedrock; Westfield—40 to 60 inches to soft bedrock and more than 60 inches to hard bedrock

Minor Components

Similar:
- Stott Knob soils, which have less clay in the subsoil than the Woolwine soil
- Braddock soils, which formed in old alluvium, are on narrow footslopes and toeslopes, and are similar to the Fairview soil
- Brevard soils, which have a loamy subsoil that formed in old alluvium on narrow footslopes and toeslopes
- Rhodhiss soils, which have less clay in the subsoil than the Fairview soil
- Clifford soils, which have a thicker layer of clay than the Fairview soil

Dissimilar:
- Meadowfield soils, which have a loamy subsoil that has more than 35 percent rock fragments and have hard bedrock at a depth of 20 to 40 inches
- Dillard soils, which have a loamy subsoil, are moderately well drained, and formed in old alluvium on toeslopes
- Bannertown soils, which have less clay in the subsoil than the Woolwine soil and have hard bedrock at a depth of 20 to 40 inches
- The well drained and moderately well drained Suches soils in small drainageways
- The somewhat poorly drained Arkaqua soils in small drainageways
- Areas of rock outcrop

Land Use

Dominant uses: Woodland, pasture, and hayland

Cropland
Suitability: Unsuited
Management concerns: Erodibility, equipment use, and soil fertility; Woolwine—droughtiness and rooting depth
Management measures and considerations:
- This map unit has severe limitations affecting crop production. If possible, another site should be selected on better suited soils.

Pasture and hayland
Suitability: Poorly suited to pasture and unsuited to hayland
Management concerns: Erodibility, equipment use, and soil fertility; Woolwine—rooting depth

Management measures and considerations:
- Preparing seedbeds on the contour or across the slope reduces the hazard of erosion and increases the germination rate.
- The slope may limit equipment use in the steeper areas when hay is harvested.
- Areas of this map unit may be difficult to manage for the production of pasture during years of low rainfall because of the moderate available water capacity caused by the moderately deep rooting depth of the Woolwine soil.
- Applying lime and fertilizer according to recommendations from soil tests increases the availability of plant nutrients and maximizes productivity when establishing, maintaining, or renovating pasture and hayland.

Woodland

Management concerns: Erodibility, equipment use, seedling survival, and competition from undesirable plants; Woolwine—windthrow hazard

Management measures and considerations:
- Installing broad-based dips, water bars, and culverts helps to stabilize logging roads, skid trails, and landings.
- Reseeding disturbed areas with adapted grasses and legumes helps to prevent erosion and the siltation of streams.
- Constructing roads, fire lanes, and skid trails on the contour helps to overcome slope limitations.
- Restricting timber operations to dry periods helps to minimize rutting of the surface layer and damage to the roots from compaction.
- Taking care to avoid rocks when planting seedlings will increase survival rates.
- Productivity may be increased by periodically harvesting windthrown trees, which fell as a result of high winds and the limited rooting depth of the Woolwine soil.
- Using site preparation practices, such as chopping, prescribed burning, and the application of herbicides, reduces competition from unwanted plants.

Urban development

Suitability: Poorly suited

Management concerns: Erodibility, slow water movement, high clay content, soil fertility, and slope; Woolwine and Westfield—depth to bedrock

Management measures and considerations:
- This map unit is difficult to manage for septic tank absorption fields because of the steepness of the slope.
- Locating and installing septic tank absorption fields in the deeper Fairview soil may improve the performance of filter fields.
- Installing distribution lines during dry periods minimizes smearing and sealing of trench walls.
- Increasing the size of the absorption field improves system performance.
- Designing structures to conform to the natural slope or building in the less sloping areas helps to overcome the slope limitations.
- Vegetating disturbed areas and using erosion-control structures, such as sediment fences, help to maintain stability and keep eroding soil on site.
- The Surry County Health Department can be contacted for additional guidance regarding sanitary facilities.

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; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

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

Contractors can use this survey to locate sources of 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.

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.

Federal and State regulations require that any areas designated as wetlands cannot be altered without prior approval. Contact the local office of the Natural Resources Conservation Service for identification of hydric soils and potential wetlands.

Yields per Acre

The table “Nonirrigated Yields by Map Unit Component” is described in this section. The average yields per acre shown in the yields table in this survey are those that can be expected of the principal crops under a high level of management. 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 of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. 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.

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 the yields table 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 pasture, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

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,* or *s,* 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); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

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* or *s* 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 the yields table.

Prime Farmland and Other Important Farmlands

Richard J. Everhart, district conservationist, Natural Resources Conservation Service, helped prepare this section.

The table “Prime Farmland and Other Important Farmlands” lists the map units in the survey area that are considered prime farmland and farmland of statewide importance. 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 60,000 acres in Surry County, or nearly 17 percent of the total acreage, meets the soil requirements for prime farmland. These areas are scattered throughout the Piedmont and are on some flood plains and stream terraces in the foothills. About 15,000 acres of this prime farmland is used for crops. The crops grown on this land are mainly tobacco, corn, and soybeans.

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 the table 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.

In some areas, land that does not meet the criteria for prime farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

Agricultural Waste Management

The titles of the tables described in this section are:

- "Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge"
- "Agricultural Disposal of Wastewater by Irrigation and Overland Flow"
- "Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment"

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.

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

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 saturated hydraulic conductivity (Ksat), depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock, 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.

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 saturated hydraulic conductivity (Ksat), depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock, 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.

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, saturated hydraulic conductivity (Ksat), slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock, depth to a water table, and ponding. The properties that affect performance include depth to bedrock, 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.

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, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, flooding, depth to bedrock, stones, and cobbles affect design and construction.

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 affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Saturated hydraulic conductivity (Ksat) and reaction affect performance.

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 primary purpose of this process in Surry County is wastewater treatment rather than the irrigation of crops. 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, saturated hydraulic conductivity (Ksat), depth to bedrock, 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.

Forestland Productivity and Management

Albert Coffey, forester, Natural Resources Conservation Service, helped prepare this section.

Owners of forestland in Surry County have many objectives. These objectives include producing timber; conserving wildlife, soil, and water; preserving esthetic values; and providing opportunities for recreational activities, such as commercial hunting. Public demand for clean water and recreational areas creates pressures and opportunities for owners of forestland.

The landowner interested in timber production is faced with the challenge of producing greater yields from smaller areas. Meeting this challenge requires intensive management and silvicultural practices. Many modern silvicultural techniques resemble those long practiced in agriculture. They include establishing, weeding, and thinning a desirable young stand; propagating the more productive species and genetic varieties; providing short rotations and complete fiber utilization; controlling insects, diseases, and weeds; and improving tree growth by applications of fertilizer. Even though timber crops require decades to grow, the goal of intensive management is similar to the goal of intensive agriculture. This goal is to produce the greatest yield of the most valuable crop as quickly as possible.

Commercial forests cover about 189,185 acres, or about 55 percent of the land area, of Surry County (USDA, Forest Service, 1991). Commercial forest is land that is producing or is capable of producing crops of industrial wood and that has not been withdrawn from timber production. Yellow-poplar is the most important timber species in the county because it grows fast, is adapted to the soil and climate, brings the highest average sale value per acre, and is easy to establish and manage.

For purposes of forest inventory, the predominant forest types identified in Surry County are described in the following paragraphs (USDA, Forest Service, 1991).

White pine-hemlock—This forest type covers 3,681 acres. It is predominantly eastern white pine. Commonly included trees are hemlock, birch, and maple.

Loblolly-shortleaf—This forest type covers 29,448 acres. It is predominantly Virginia pine and managed stands of loblolly pine and shortleaf pine. Commonly included trees are oak, hickory, and maple.

Oak-pine—This forest type covers 33,129 acres. It is predominantly hardwoods, usually upland oaks. Pine species make up 25 to 50 percent of the stand. Commonly included trees are maple, hickory, and yellow-poplar.

Oak-hickory—This forest type covers 115,565 acres. It is predominantly upland oaks with minor, scattered areas of hickory. Commonly included trees are yellow-poplar, elm, and maple.

Oak-gum-cypress—This forest type covers 3,681 acres. It is bottom land forest consisting predominantly of yellow-poplar, blackgum, sweetgum, oaks, or a combination of these species. Commonly included trees are cottonwood, willow, ash, elm, hackberry, and maple.

Elm-ash-cottonwood—This forest type covers 3,681 acres. It is predominantly elm, ash, cottonwood, or a combination of these species. Commonly included trees are willow, sycamore, beech, yellow-poplar, and maple.

One of the first steps in planning intensive forestland management is to determine the potential productivity of the soil for several alternative tree species. The most productive and valued trees are then selected for each soil type. Site and yield information enables a forest manager to estimate future wood supplies. These estimates are the basis of realistic decisions concerning expenses and profits associated with intensive forestland management, land acquisition, or industrial investments.

The potential productivity of forestland depends on physiography, soil properties, climate, and the effects of past management. Specific soil properties and site characteristics, including soil depth, texture, structure, and depth to the water table, affect forest productivity primarily by influencing available water capacity, aeration, and root development. The net effects of the interaction of these soil properties and site characteristics determine the potential site productivity.

Naturally occurring site factors are also important. The steepness and length of slopes and the landform position affect water movement and availability. Elevation and aspect affect the amount of sunlight a site receives and the rate of evaporation. Sites on south-facing slopes are warmer and drier than those on north-facing slopes. The amount of rainfall and the length of growing season influence site productivity. While rainfall generally increases as elevation increases, productivity gains may be offset by a shorter growing season. The most productive sites are generally on north- to east-facing slopes in the lower areas, in sheltered coves, or in concave areas that are gently sloping.

A knowledge of soils helps to provide a basic understanding of the distribution and growth of tree species on the landscape. For example, yellow-poplar grows well on deep or very deep, moist soils, and scarlet oak or pine is common in areas where the rooting depth is restricted or the moisture supply is limited.

Soil serves as a reservoir for moisture, provides an anchor for roots, and supplies most of the available nutrients. These three qualities are directly or indirectly affected by organic matter content, reaction, fertility, drainage, texture, structure, depth, and landscape position. Elevation and aspect are of particular importance in mountainous areas.

In Surry County all of the soils, except for the shallowest, provide an adequate anchor for tree roots. The susceptibility to windthrow, or the uprooting of trees by the wind, is not a major management concern on most soils.

The available supply of nutrients for tree growth is affected by several soil properties. Mineral horizons in the soil are important. Mineralization of humus releases nitrogen and other nutrients to plants. Calcium, magnesium, and potassium are held within the humus. Very small amounts of these nutrients are made available by the weathering of clay and silt particles. Most of the upland soils have been leached and contain only small amounts of nutrients below the surface layer. Soils that have a thin surface layer must be carefully managed during site preparation so that the surface layer is not removed or degraded. Examples are Chestnut and Cowee soils.

Aspect and landscape position influence the amount of available sunlight, air drainage, soil temperature, and moisture retention, especially in mountainous areas. North- and east-facing slopes, or cool slopes, are better suited to tree growth than south- and west-facing slopes, or warm slopes. Most of the soils on cool slopes in Surry County have an A horizon that is slightly thicker and has slightly more humus and clay than that of the soils on warm slopes. This slight difference generally is not sufficient to map soils differently on the warm slopes and the cool slopes. In other mountainous areas, especially at the higher elevations and in the more northern latitudes, different soils occur on cool slopes than occur on warm slopes.

The soils on the cooler slopes have a slightly higher capacity to hold water and a much higher capacity to hold nutrients than the soils on warm slopes. The mean annual soil temperature is about 2 degrees F lower on the cool slopes. The difference in temperature is most prevalent during the dormant season. Because less sunlight falls on the canopy in areas of the cool slopes, the air temperature in the canopy and the transpiration rate are lower and less water is needed for plant growth.

Soils on the lower slopes may receive additional water because of internal flow of water. In soils on the very steep uplands, much of the water movement during periods of saturation occurs as lateral flow within the subsoil.

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 the table, “Forestland Productivity,” 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,” which is available in local offices 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

The titles of the tables described in this section are:

- "Haul Roads, Log Landings, and Soil Rutting on Forestland"
- "Hazard of Erosion and Suitability for Roads on Forestland"
- "Forestland Planting and Harvesting"
- "Forestland Site Preparation"
- "Damage by Fire and Seedling Mortality on Forestland"

In these tables, 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.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified 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," which is available in local offices 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, 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

The titles of the tables described in this section are:

- "Camp Areas, Picnic Areas, and Playgrounds"
- "Paths, Trails, and Golf Fairways"

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

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in these tables 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 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, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock, saturated hydraulic conductivity (Ksat), 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, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock, saturated hydraulic conductivity (Ksat), 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, saturated hydraulic conductivity (Ksat), and large stones. The soil properties that affect the growth of plants are depth to bedrock, saturated hydraulic conductivity (Ksat), 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; 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.

Wildlife Habitat

David Sawyer, wildlife biologist, and Joe Mickey, fisheries biologist, North Carolina Wildlife Resources Commission, helped prepare this section.

Surry County has a variety of game and non-game animals. The soils throughout the county generally are well suited to the establishment and growth of most native and introduced plant species for food and cover. There is good habitat for edge dwelling species, such as rabbits and quail, along field borders and between forested areas and cropland and pasture. Woodland species, such as squirrel and raccoon, find good habitat in the hardwoods, mixed hardwoods, and pines that make up about 55 percent of the county.

Deer occur in huntable populations throughout the county. The abundant woodlands provide year-round cover and shrubs, shoots, and acorns for food. Unfortunately for landowners, field crops, such as corn and soybeans, and gardens also provide choice seasonal food to the deer in the county.

Waterfowl, especially wood ducks, are fairly abundant in the county. They are concentrated along the many creeks and rivers in the county. Also, some migratory species, mainly mallards, black ducks, and Canadian geese, are attracted to these streams and to the many watershed lakes and farm ponds of the county.

Good populations of wild turkey are scattered throughout the county. They are most abundant, along with a small but huntable population of ruffed grouse, in the mountains along the northwestern part of the county.

Doves, a migratory species, provide great sport for hunters in the early fall, especially around recently cut hay and silage fields. Crows are numerous and also provide hunting opportunities for sportsmen.

Surry County is home to other birds as well. Many species of song birds inhabit the fields and woodlands of the county. Ravens are common in the mountain areas. Turkey vultures soar throughout the county and roost in trees and on rock ledges along mountain ridges. Several species of predatory birds, such as hawks and owls, also inhabit the county.

Other species of wildlife that make their home in Surry County include red and gray fox, opossum, skunk, groundhog, beaver, muskrat, mink, bobcat, weasel, and a large assortment of reptiles and amphibians.

Some animals are not common to Surry County but may occasionally be found in the area or may soon move to the area. Black bears occasionally travel through parts of the county and a few may become permanent residents in the mountainous northwestern part of the county. River otters have recently been observed in the Yadkin River and will likely move into Surry County tributaries as they repopulate North Carolina. Coyotes are now present in adjacent counties and will likely move into Surry County in the near future.

Two species of wildlife designated as state-listed threatened species have recently been found at specific locations in Surry County. One is an amphibian, the Wehrle's Salamander (Plethodon wehrlei); the other is a reptile, the bog turtle (Clemmys muhlenbergii). Wehrle's Salamander is found in upland forests where it lives under stones, in rotting logs, in deep rock crevices, or in the twilight zones of caves. The bog turtle is found only in sphagnum bogs, swamps, and slow-moving meadow streams that have muddy bottoms.

Surry County rivers, streams, and ponds contain a diverse population of fish. Surry County is one of the few North Carolina counties that has cold, cool, and warm water fish species.

Headwater streams of the Mitchell and Fisher Rivers contain cold waters flowing from the Blue Ridge mountains. These cold water streams support native brook trout and introduced rainbow and brown trout.

The Mitchell, Fisher, and Ararat Rivers and Stewarts Creek are cool water streams of Surry County. With the exception of the Ararat River, these cool water streams contain good populations of smallmouth bass, redbreast sunfish, and a large variety of stream minnows and suckers.

The Yadkin River and many smaller streams in the county are warm water streams. The Yadkin River has a good catfish and sucker population. The smaller warm water streams support redbreast sunfish and numerous minnow species.

Fifty-two different species of fishes have been found in Surry County waters, but the health of all of the streams has been threatened by sedimentation and the loss of shade to the streams. This encroachment on the streams, if allowed to continue, threatens many of the species that are now found in the waters of the county (Bonner, 1983; Menhinick, 1991; Mickey, 1980; Mickey, 1993; Mickey, 1980-1994; and Mickey and Simpson, 1988).

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

Information about soils can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, orchardgrass, bromegrass, soybeans, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, and pokeberry.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, yellow-poplar, black cherry, sweetgum, apple, hawthorn, holly, persimmon, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are autumn olive and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, cedar, and hemlock.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, cattail, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and saturated hydraulic conductivity (Ksat). Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, meadowlark, field sparrow, cottontail, groundhog, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, white-tailed deer, and black bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, muskrat, mink, and beaver.

Hydric Soils

This section lists the map units 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 (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for 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 (Federal Register, 1994). 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 (Federal Register, 2002). 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” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 2006) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

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” (Hurt and others, 2002).

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.

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 meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

BaC Bandana-Tate-Nikwasi complex, 0 to 15 percent slopes, frequently flooded (Nikwasi soil only)
HaA Hatboro loam, 0 to 2 percent slopes, frequently flooded

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.

ArA Arkaqua loam, 0 to 2 percent slopes, frequently flooded
CsA Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded

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, saturated hydraulic conductivity (Ksat), 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

The titles of the tables described in this section are:

- "Dwellings and Small Commercial Buildings"
- "Roads and Streets, Shallow Excavations, and Lawns and Landscaping"

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. The tables described in this section show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

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

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

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

The titles of the tables described in this section are:

- “Sewage Disposal”
- “Landfills”

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

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

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock 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, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, depth to bedrock, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (Ksat) 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 Ksat 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 and bedrock 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 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 saturated hydraulic conductivity (Ksat), depth to bedrock, 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, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, slope, and depth to bedrock.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If the downward movement of water through the soil is too rapid or if fractured bedrock 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, 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 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

The titles of the tables described in this section are:

- “Source of Gravel and Sand”
- “Source of Reclamation Material, Roadfill, and Topsoil”

These tables 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 the table “Source of Sand and Gravel,” 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 the table "Source of Reclamation Material, Roadfill, and Topsoil," the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of these materials are specified in the tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of 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, 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

The table "Ponds and Embankments" 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 saturated hydraulic conductivity (Ksat) 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 properties, physical and chemical properties, and pertinent soil and water features.

Engineering Properties

The table described in this section 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 (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

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 sieve number 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

The table described in this section 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.

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.

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, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute 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 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. Saturated hydraulic conductivity (Ksat) 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 saturated hydraulic conductivity (Ksat). 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.

Chemical Soil Properties

The table described in this section 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

The table described in this section gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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

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

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

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

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, or by runoff from adjacent slopes. 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

The table described in this section 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. Bedrock is an example. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect 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, saturated hydraulic conductivity (Ksat), 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 (Soil Survey Staff, 1999 and 2006). 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. 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 Ultisol.

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 Udult (*Ud*, meaning humid, plus *ult*, from Ultisol).

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 Hapludults (*Hapl*, meaning minimal horizonation, plus *udult*, the suborder of the Ultisols 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 Hapludults.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, semiactive, mesic Typic Hapludults.

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. There can be some variation in the texture of the surface layer or of the substratum within a series.

The table "Taxonomic Classification of the Soils" indicates the order, suborder, great group, subgroup, and family of the soil series in the survey area.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993) and in the “Field Book for Describing and Sampling Soils” (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2006). 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.

Arkaqua Series

Depth class: Very deep
Agricultural drainage class: Somewhat poorly drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont and Blue Ridge foothill valleys
Landform: Flood plains
Geomorphic component: Talfs, dips, and rises
Parent material: Recent alluvium
Slope: 0 to 2 percent
Taxonomic class: Fine-loamy, mixed, active, mesic Fluvaquentic Dystrudepts (fig. 20)

Typical Pedon

Arkaqua loam, 0 to 2 percent slopes, frequently flooded; in Surry County; about 3.0 miles west of Mt. Airy, 0.6 mile north of the intersection of Secondary Road 1620 and N.C. Highway 89 on Secondary Road 1620, about 0.2 mile north on farm road into pasture, across Stewarts Creek, 550 feet north in field; USGS Cana topographic quadrangle; lat. 36 degrees 30 minutes 48 seconds N. and long. 80 degrees 41 minutes 38 seconds W.

Ap1—0 to 6 inches; brown (10YR 4/3) loam; weak medium granular structure; friable; slightly sticky, slightly plastic; few fine roots; common fine pores; common medium distinct dark grayish brown (10YR 4/2) iron depletions; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; common fine flakes of mica; moderately acid; clear wavy boundary.

Ap2—6 to 10 inches; brown (10YR 4/3) loam; moderate medium angular blocky structure parting to weak coarse granular; friable; slightly sticky, slightly plastic; few fine roots; common fine pores; common medium faint dark grayish brown (10YR 4/2) iron depletions; common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron; common fine flakes of mica; slightly acid; abrupt wavy boundary.

Bw1—10 to 16 inches; light olive brown (2.5Y 5/4) clay loam; moderate coarse angular blocky structure parting to weak medium angular blocky; friable; moderately sticky, moderately plastic; few fine roots; common fine pores; common medium faint grayish brown (2.5Y 5/2) iron depletions; common medium prominent strong brown (7.5YR 5/6) masses of oxidized iron; common fine flakes of mica; slightly acid; gradual wavy boundary.

Bw2—16 to 25 inches; olive (5Y 5/3) clay loam; moderate coarse angular blocky structure parting to weak medium subangular blocky; friable; moderately sticky, moderately plastic; few fine roots; common fine pores; many medium distinct light brownish gray (2.5Y 6/2) iron depletions; many medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; common fine flakes of mica; moderately acid; gradual wavy boundary.

Bg—25 to 34 inches; gray (10YR 5/1) sandy clay loam; weak coarse subangular blocky structure; friable; slightly sticky, slightly plastic; few fine roots; few fine pores; many medium prominent yellowish brown (10YR 5/8) masses of oxidized iron; common fine flakes of mica; moderately acid; gradual wavy boundary.

BCg—34 to 45 inches; gray (10YR 5/1) fine sandy loam that has lenses of sandy clay loam; weak coarse subangular blocky structure; friable; slightly sticky, slightly plastic; few fine roots; few fine pores; many coarse prominent yellowish brown

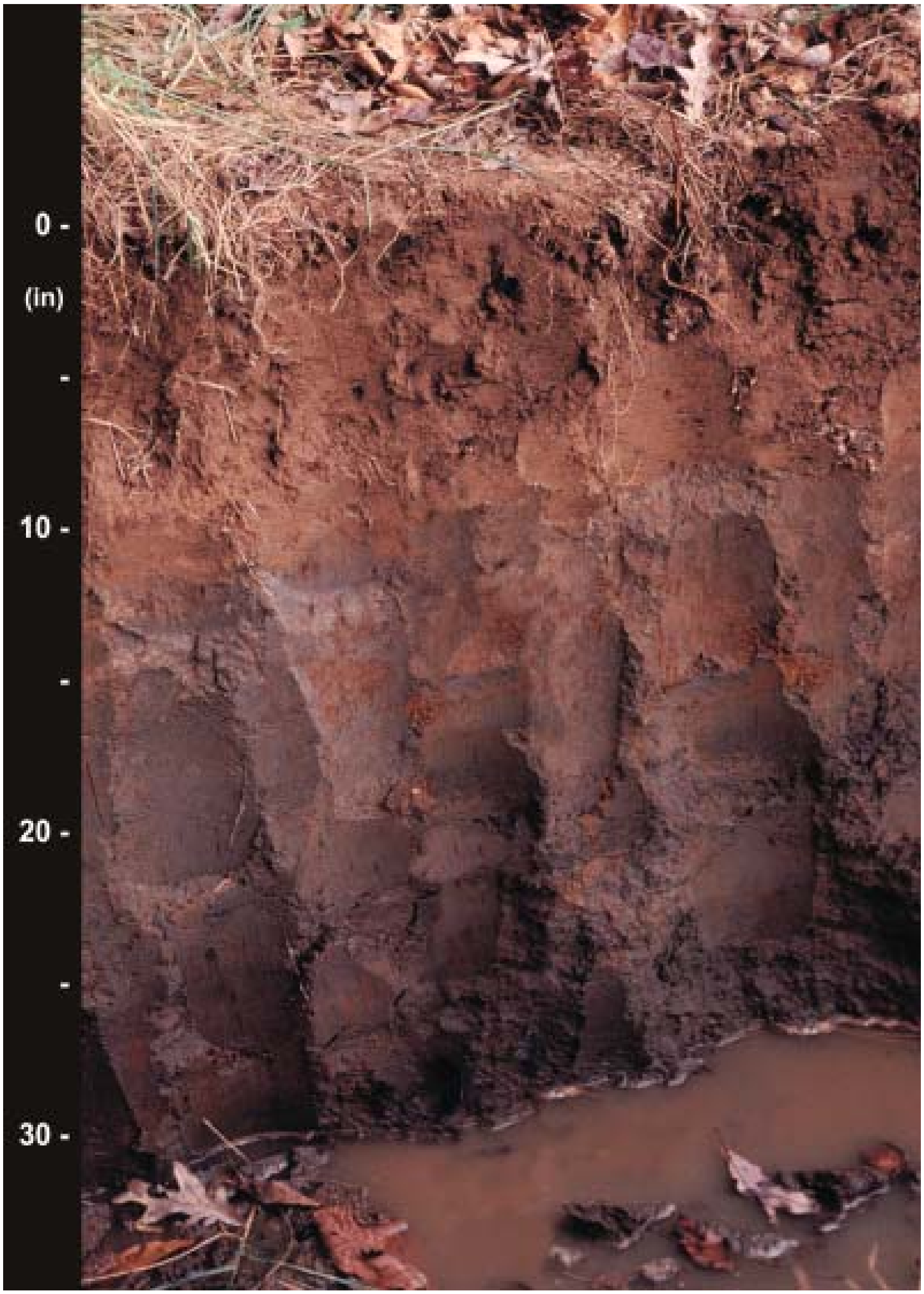

Figure 20.—A profile of Arkaqua loam in an area of Arkaqua loam, 0 to 2 percent slopes, frequently flooded.

(10YR 5/8) masses of oxidized iron; many fine flakes of mica; slightly acid; gradual wavy boundary.

C—45 to 54 inches; brownish yellow (10YR 6/6) fine sandy loam; massive; friable; nonsticky, nonplastic; common medium prominent gray (10YR 5/1) iron depletions; many fine flakes of mica; slightly acid; diffuse wavy boundary.

Cg—54 to 79 inches; dark grayish brown (2.5Y 4/2) loam that has lenses of fine sandy loam and sandy clay loam; massive; friable; nonsticky, nonplastic; common medium prominent yellowish brown (10YR 5/6) masses of oxidized iron; many fine flakes of mica; slightly acid.

Range in Characteristics

Thickness of A and B horizons: 35 to 60 inches

Depth to bedrock: More than 60 inches

Content of mica flakes: Few to many throughout

Content and size of rock fragments: Commonly less than 5 percent in the A and upper B horizons, 0 to 15 percent in the lower B horizons, and 0 to 70 percent below a depth of 40 inches; mostly gravel and cobbles

Reaction: Very strongly acid to slightly acid throughout, except where lime has been applied

A or Ap horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6

Texture (fine-earth fraction)—dominantly loam; sandy loam, fine sandy loam, or silt loam in some pedons

Redoximorphic features (where present)—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow

Ab horizon (where present):

Color—hue of 10YR, value of 2 or 3, and chroma of 1 or 2; or neutral in hue and has value of 2.5 or 3

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or silt loam

Redoximorphic features (where present)—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow

Bw horizon:

Color—hue of 7.5YR to 5Y, value of 3 to 8 in the upper part and 3 to 6 in the lower part, and chroma of 3 to 8; or variegated

Texture—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam

Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow generally are present within 24 inches of the surface

Bg horizon:

Color—iron depleted matrix in hue of 10YR to 5Y, value of 3 to 7, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of brown, red, and yellow

BCg horizon:

Color—iron depleted matrix in hue of 10YR to 5Y, value of 3 to 7, and chroma of 1 or 2

Texture—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of brown, red, and yellow

BC horizon (where present):

Color—hue of 7.5YR to 5Y, value of 3 to 8 in the upper part and 3 to 6 in the lower part, and chroma of 3 to 8; or variegated

Texture—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam

Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow generally are present within 24 inches of the surface

C horizon:

Color—hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 3 to 6

Texture—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam; variable below a depth of 40 inches, ranging from loamy sand to clay loam

Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow

Cg horizon:

Color—iron depleted matrix in hue of 10YR to 5Y, value of 3 to 6, and chroma of 1 or 2; or neutral in hue and has value of 3 to 6

Texture—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam

Redoximorphic features—masses of oxidized iron in shades of brown, red, and yellow

Bandana Series

Depth class: Very deep
Agricultural drainage class: Somewhat poorly drained
Saturated hydraulic conductivity class: High in the upper part and high or very high in the lower part
Landscape: Blue Ridge mountains and Blue Ridge foothill valleys
Landform: Flood plains
Geomorphic component: Talfs, dips, and rises
Parent material: Recent alluvium
Slope: 0 to 3 percent
Taxonomic class: Coarse-loamy, mixed, active, nonacid, mesic Aeric Fluvaquents

Typical Pedon

Bandana fine sandy loam, in an area of Bandana-Tate-Nikwasi complex, 0 to 15 percent slopes, frequently flooded; in Surry County; about 9.5 miles northwest of Dobson, 0.5 mile north of the intersection of Secondary Roads 1455 and 1331 on Secondary Road 1455, about 0.5 mile north on woods road, 75 feet west of road in woods; USGS Bottom topographic quadrangle; lat. 36 degrees 27 minutes 37 seconds N. and long. 80 degrees 51 minutes 5 seconds W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine, medium, and coarse roots; common fine flakes of mica; strongly acid; gradual wavy boundary.

Bw1—4 to 15 inches; 80 percent brown (10YR 4/3) and 20 percent strong brown (7.5YR 4/6) fine sandy loam; weak medium subangular blocky structure; very friable; nonsticky, nonplastic; many fine, medium, and coarse roots; few fine tubular pores; common medium faint dark brown (10YR 3/3) fillings in old root channels; common medium faint dark grayish brown (10YR 4/2) iron depletions; common fine flakes of mica; strongly acid; gradual wavy boundary.

Bw2—15 to 19 inches; strong brown (7.5YR 4/6) fine sandy loam; weak coarse angular blocky structure; friable; nonsticky, nonplastic; few fine and medium roots; few fine tubular pores; many coarse prominent dark grayish brown (10YR 4/2) iron depletions; common coarse prominent yellowish brown (10YR 5/4) masses of oxidized iron; common fine flakes of mica; 1 percent quartz gravel; strongly acid; clear wavy boundary.

Bg—19 to 26 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak coarse angular blocky structure; friable; nonsticky, nonplastic; few fine and medium roots; few fine tubular pores; many medium prominent yellowish red (5YR 4/6) masses of oxidized iron; common fine flakes of mica; 1 percent quartz gravel; strongly acid; clear wavy boundary.

Ab—26 to 30 inches; 85 percent black (10YR 2/1) and 15 percent very dark gray (10YR 3/1) loamy fine sand; weak coarse angular blocky structure; friable; nonsticky, nonplastic; few fine live roots and many fine dead roots; few fine tubular pores; common fine flakes of mica; 1 percent quartz gravel; strongly acid; gradual wavy boundary.

C1—30 to 49 inches; dark yellowish brown (10YR 4/4) very gravelly sand; massive; very friable; nonsticky, nonplastic; common coarse prominent very dark gray (10YR 3/1) fillings in old root channels; common fine flakes of mica; 35 percent quartz gravel; moderately acid; gradual wavy boundary.

C2—49 to 79 inches; dark yellowish brown (10YR 4/4) extremely gravelly sand; single grained; loose; nonsticky, nonplastic; common coarse distinct dark gray (10YR 4/1) iron depletions; common fine flakes of mica; 65 percent quartz gravel; moderately acid.

Range in Characteristics

Thickness of A and B horizons: 10 to 30 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: None to common throughout
Content and size of rock fragments: Commonly less than 15 percent but ranges to 35 percent in the A, B, and Cg horizons and more than 35 percent rock fragments in the C horizon; mostly gravel and cobbles
Reaction: Strongly acid to slightly acid, except where lime has been applied
Other distinctive features: The loamy material, from 10 to 40 inches, contains more than 50 percent fine and coarser sand.

A or Ap horizon:
Color—hue of 7.5YR to 2.5Y, value of 2 to 5, and chroma of 1 to 6
Texture (fine-earth fraction)—dominantly fine sandy loam; loamy sand, loamy fine sand, sandy loam, or loam in some pedons

Ab horizons:
Color—hue of 7.5YR to 2.5Y, value of 2 to 5, and chroma of 1 to 6
Texture (fine-earth fraction)—dominantly loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Bw horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8
Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam
Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow

Bg horizon:

Color—iron depleted matrix in hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2; or neutral in hue and has value of 4 to 7

Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Redoximorphic features—masses of oxidized iron in shades of brown, red, and yellow

Cg horizon (where present):

Color—iron depleted matrix in hue of 7.5YR to 5Y, value of 4 to 7, and chroma of 1 or 2

Texture (fine-earth fraction)—fine sandy loam, sand, fine sand, coarse sand, loamy sand, loamy coarse sand, or loamy fine sand

Redoximorphic features—masses of oxidized iron in shades of brown, red, and yellow

C horizon:

Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8

Texture (fine-earth fraction)—coarse sand, sand, fine sand, loamy coarse sand, loamy sand, or loamy fine sand

Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow

Bannertown Series

Depth class: Moderately deep
Agricultural drainage class: Somewhat excessively drained
Saturated hydraulic conductivity class: High
Landscape: Piedmont uplands
Landform: Interfluves, ridges, and low hills
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from granite and granite gneiss
Slope: 8 to 95 percent
Taxonomic class: Coarse-loamy, mixed, semiactive, mesic Typic Dystrudepts

Typical Pedon

Bannertown gravelly coarse sandy loam, in an area of Rhodhiss-Bannertown-Rock outcrop complex, 25 to 60 percent slopes, very bouldery; in Surry County; about 1.0 mile southwest of Mount Airy, 0.2 mile north of the intersection of Secondary Roads 1359 and 1363 on Secondary Road 1359, about 0.6 mile southeast on farm road (in county industrial park), 800 feet northeast across pasture in woodland; USGS Dobson topographic quadrangle; lat. 36 degrees 28 minutes 34 seconds N. and long. 80 degrees 38 minutes 47 seconds W.

A—0 to 4 inches; dark brown (10YR 3/3) gravelly coarse sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine and common medium and coarse roots; few fine flakes of mica; 20 percent quartz gravel; very strongly acid; clear wavy boundary.

BA—4 to 8 inches; brown (10YR 4/3) gravelly coarse sandy loam; weak fine subangular blocky structure; very friable; nonsticky, nonplastic; many fine and common medium and coarse roots; common fine pores; common fine flakes of mica; few fine grains of feldspar; 20 percent quartz gravel; strongly acid; gradual wavy boundary.

Bw1—8 to 14 inches; yellowish brown (10YR 5/4) gravelly coarse sandy loam; weak medium subangular blocky structure; very friable; nonsticky, nonplastic; common fine, medium, and coarse roots; common fine pores; common distinct brown (10YR 4/3) fillings of BA material between peds and in old root channels; common fine flakes of mica; common fine grains of feldspar; 15 percent quartz gravel; strongly acid; gradual wavy boundary.

Bw2—14 to 19 inches; light yellowish brown (10YR 6/4) gravelly coarse sandy loam; weak coarse subangular blocky structure; very friable; nonsticky, nonplastic; common fine, medium, and coarse roots; common fine pores; common fine flakes of mica; common fine grains of feldspar; 15 percent quartz gravel; very strongly acid; gradual wavy boundary.

C—19 to 27 inches; light yellowish brown (10YR 6/4) gravelly coarse sandy loam granite saprolite; massive; very friable; nonsticky, nonplastic; common coarse and few fine and medium roots; few fine pores; common distinct yellowish brown (10YR 5/4) clay fillings in old root channels and in relict rock fractures; common fine flakes of mica; common fine grains of feldspar; 15 percent granitic gravel; very strongly acid.

Cr—27 to 30 inches; light gray, soft granite.

R—30 inches; light gray, hard granite.

Range in Characteristics

Thickness of loamy Bw horizon: 6 to 24 inches
Depth to bedrock: 20 to 40 inches to hard bedrock
Content of mica flakes: Few or common throughout
Content and size of rock fragments: 5 to 35 percent throughout; mostly gravel, cobbles, and stones
Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 to 6
Texture (fine-earth fraction)—dominantly coarse sandy loam; sandy loam, fine sandy loam, or loam in some pedons

E horizon (where present):
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 6
Texture (fine-earth fraction)—coarse sandy loam, sandy loam, fine sandy loam, or loam

BA horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma 2 to 4
Texture (fine-earth fraction)—coarse sandy loam, sandy loam, fine sandy loam, or loam

Bw horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—coarse sandy loam, sandy loam, fine sandy loam, or loam; thin layers of sandy clay loam in some pedons

C horizon:
Color—hue of 7.5YR to 2.5Y, value of 3 to 8, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—loamy coarse sand, loamy sand, loamy fine sand, coarse sandy loam, sandy loam, or fine sandy loam

Cr layer:
Type of bedrock—gray to brown, soft granite or granite gneiss

R layer:
Type of bedrock—hard granite or granite gneiss

Braddock Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont and Blue Ridge foothills and Blue Ridge mountain valleys
Landform: Stream terraces, fans, and fan remnants
Geomorphic component: Treads, risers, base slopes, mountain bases, and interfluves
Parent material: Colluvium and alluvium derived mainly from felsic high-grade metamorphic or igneous rock
Slope: 2 to 45 percent
Taxonomic class: Fine, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Braddock fine sandy loam, 2 to 8 percent slopes; in Surry County; about 5.0 miles north of Elkin, 0.4 mile northwest of the intersection of Secondary Roads 1121 and 1112 on Secondary Road 1121, about 1,500 feet north on farm road, in small grain field; USGS Elkin North topographic quadrangle; lat. 36 degrees 18 minutes 27 seconds N. and long. 80 degrees 46 minutes 28 seconds W.

Ap—0 to 9 inches; brown (7.5YR 4/4) fine sandy loam; weak fine subangular blocky structure; friable; nonsticky, nonplastic; many fine roots; common fine tubular pores; few fine flakes of mica; 5 percent quartz gravel; strongly acid; abrupt wavy boundary.

Bt1—9 to 19 inches; yellowish red (5YR 4/6) clay; moderate medium subangular blocky structure; firm; moderately sticky, moderately plastic; few fine roots; few fine tubular pores; common continuous faint clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel; very strongly acid; gradual wavy boundary.

Bt2—19 to 34 inches; red (2.5YR 5/6) clay; moderate medium subangular blocky structure; firm; moderately sticky, moderately plastic; few fine tubular pores; common continuous faint clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel; strongly acid; gradual wavy boundary.

Bt3—34 to 56 inches; red (2.5YR 5/6) clay; common medium prominent yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; firm; moderately sticky, moderately plastic; few fine tubular pores; few continuous faint clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel; very strongly acid.

BC—56 to 70 inches; yellowish red (5YR 5/8) clay loam; common medium prominent strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; firm; moderately sticky, moderately plastic; common fine flakes of mica; 10 percent quartz gravel; very strongly acid.

C—70 to 79 inches; light brown (7.5YR 6/4) loam; massive; friable; nonsticky, nonplastic; common fine flakes of mica; 10 percent quartz gravel; very strongly acid.

Range in Characteristics

Thickness of clayey Bt horizon: 20 to 50 inches
Thickness of alluvium or colluvium: 3 to more than 20 feet
Depth to bedrock: More than 60 inches
Content of mica flakes: None to common throughout
Content and size of rock fragments: 0 to 35 percent in the A, E, and upper B horizons and 0 to 60 percent in the lower B and the C horizons; mostly cobbles and stones
Reaction: Extremely acid to strongly acid throughout, except where lime has been applied

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 2 to 5, and chroma of 1 to 6; hue of 5YR in some eroded areas
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons; sandy clay loam or clay loam where eroded

E horizon (where present):
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BE or BA horizon (where present):
Color—hue of 2.5YR to 7.5YR, value of 4 or 5, and chroma of 4 to 8
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

Bt horizon:
Color—hue of 10R or 2.5YR, value of 3 to 5, and chroma of 6 or 8; hue of 5YR in some pedons
Texture (fine-earth fraction)—clay loam, sandy clay, or clay
Mottles (where present)—relic redoximorphic features in shades of red, yellow, brown, and white in lower part of Bt horizon

BC horizon:
Color—hue of 10R or 2.5YR, value of 3 to 5, and chroma of 6 or 8; hue of 5YR in some pedons
Texture (fine-earth fraction)—sandy clay loam, clay loam, sandy clay, or clay
Mottles (where present)—relic redoximorphic features in shades of red, yellow, brown, and white

C or 2C horizon:
Color—hue of 10R to 7.5YR, value of 3 to 8, and chroma of 1 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; saprolite in 2C horizon
Mottles (where present)—relic redoximorphic features in shades of red, yellow, brown, and white

Note: Braddock soils in map units BpC and BpD exceed the range in the official series description by having more than 35 percent rock fragments in the A horizon.

Brevard Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Blue Ridge mountains and Blue Ridge foothill valleys
Landform: Fans, fan remnants, and stream terraces
Geomorphic component: Mountain bases, base slopes, treads, and risers
Parent material: Colluvium and alluvium derived mainly from felsic high-grade metamorphic or igneous rock
Slope: 8 to 60 percent
Taxonomic class: Fine-loamy, parasesquic, mesic Typic Hapludults

Typical Pedon

Brevard gravelly fine sandy loam, in an area of Brevard-Greenlee complex, 25 to 60 percent slopes, very bouldery; in Surry County; about 4.0 miles southwest of Low Gap, 1.4 miles west of intersection of State Roads 1411 and 1408 on State Road 1411, about 900 feet west of Eckerd Camp shop, and 200 feet west of campsite in hardwood forest; USGS Roaring Gap topographic quadrangle; lat. 36 degree 29 minutes 56 seconds N. and long. 80 degree 55 minutes 3 seconds W.

A1—0 to 4 inches; dark brown (7.5YR 3/2) gravelly fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; few fine flakes of mica; 25 percent quartz gravel, 2 percent cobbles, and 2 percent stones and gneiss boulders; very strongly acid; clear wavy boundary.

A2—4 to 8 inches; brown (7.5YR 4/4) gravelly fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; 25 percent quartz gravel and 2 percent gneiss cobbles; very strongly acid: clear wavy boundary.

BA—8 to 12 inches; strong brown (7.5YR 4/6) gravelly sandy clay loam; weak fine subangular blocky structure; friable; slightly sticky, slightly plastic; few fine flakes of mica; 20 percent quartz gravel; very strongly acid; clear wavy boundary.

Bt1—12 to 17 inches; yellowish red (5YR 4/6) gravelly sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few discontinuous faint clay films on faces of peds; few fine flakes of mica; 15 percent quartz gravel; very strongly acid; gradual wavy boundary.

Bt2—17 to 33 inches; red (2.5YR 4/6) gravelly sandy clay loam; moderate medium subangular blocky structure; friable; slightly sticky, slightly plastic; few discontinuous faint clay films on faces of peds; few fine flakes of mica; 15 percent quartz gravel; very strongly acid; gradual wavy boundary.

Bt3—33 to 48 inches; yellowish red (5YR 4/6) gravelly sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few fine flakes of mica; 15 percent quartz gravel; strongly acid; gradual wavy boundary.

C—48 to 79 inches; yellowish red (5YR 5/8) very gravelly fine sandy loam; massive; very friable; nonsticky, nonplastic; few fine flakes of mica; 35 percent quartz gravel; strongly acid.

Range in Characteristics

Thickness of loamy Bt horizon: 35 to 60 inches

Depth to bedrock: More than 60 inches

Content of mica flakes: Few or common throughout

Content and size of rock fragments: 0 to 50 percent in the A horizon, 0 to 35 percent in the B horizon, and 15 to 60 percent in the C horizon; ranging in size from gravel to boulders

Reaction: Very strongly acid or moderately acid throughout, except where lime has been applied

A horizon:

Color—hue of 5YR to 10YR, value of 2 to 5, and chroma of 2 to 4

Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons

E horizon (where present):

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 or 6

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BA or BE horizon:

Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or sandy clay loam

Bt horizon:

Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

BC horizon (where present):

Color—hue of 10R to 7.5YR, value of 4 to 6, and chroma of 4 to 8
Texture—sandy loam, fine sandy loam, loam, or sandy clay loam
Mottles—shades of red and brown

C or 2C horizon:

Color—variable
Texture (fine-earth fraction)—loamy fine sand, sandy loam, fine sandy loam, or loam; saprolite in 2C horizon

Chestnut Series

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: High
Landscape: Blue Ridge mountains and foothills
Landform: Mountains and spurs
Geomorphic component: Mountaintops, mountain flanks, crests, head slopes, side slopes, and nose slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic rock
Slope: 8 to 90 percent
Taxonomic class: Coarse-loamy, mixed, active, mesic Typic Dystrudepts (fig. 21)

Typical Pedon

Chestnut gravelly fine sandy loam, in an area of Chestnut-Peaks-Tuckasegee complex, 45 to 90 percent slopes, very rocky; in Surry County; about 3.0 miles northwest of Low Gap, 1.0 mile south of intersection of N.C. Highways 89 and 18 on N.C. Highway 89, about 150 feet downslope in woodland, west of hairpin curve on N.C. Highway 89; USGS Cumberland Knob topographic quadrangle; lat. 36 degrees 32 minutes 57 seconds N. and long. 80 degrees 53 minutes 48 seconds W.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) gravelly fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine and medium and few coarse roots; common fine tubular pores; common fine flakes of mica; 15 percent quartz gravel and 5 percent schist channers; very strongly acid; clear wavy boundary.

BA—3 to 8 inches; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; common medium faint yellowish brown (10YR 5/4) mottles; weak fine subangular blocky structure; very friable; nonsticky, nonplastic; common fine and medium and few coarse roots; common fine tubular pores; common medium faint brown (10YR 4/3) pore fillings; common fine flakes of mica; 15 percent quartz gravel; strongly acid; clear wavy boundary.

Bw—8 to 21 inches; light olive brown (2.5Y 5/4) gravelly fine sandy loam; common medium faint yellowish brown (10YR 5/4) mottles; weak fine subangular blocky structure; very friable; nonsticky, nonplastic; common fine and medium and few coarse roots; common fine tubular pores; common fine flakes of mica; 20 percent quartz gravel and 2 percent schist channers; strongly acid; gradual wavy boundary.

C—21 to 29 inches; light olive brown (2.5Y 5/4) gravelly fine sandy loam saprolite; common medium faint yellowish brown (10YR 5/4) mottles; massive; very friable; nonsticky, nonplastic; common fine and medium and few coarse roots; common fine flakes of mica; 18 percent quartz gravel and 2 percent schist channers; strongly acid; gradual wavy boundary.

Cr—29 to 45 inches; soft felsic schist.

R—45 inches; hard felsic schist.

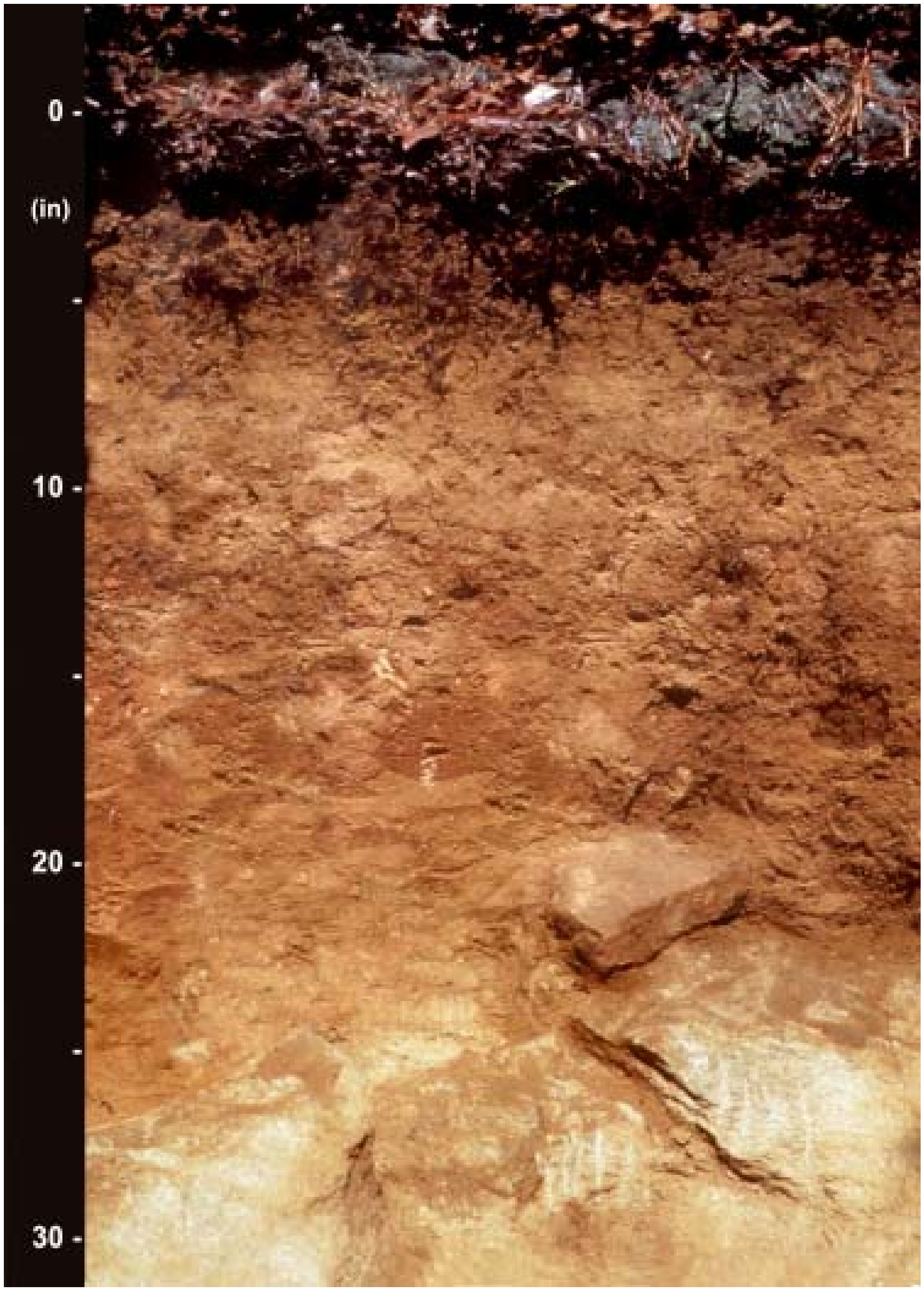

Figure 21.—A profile of Chestnut gravelly fine sandy loam in an area of Chestnut-Peaks complex, 8 to 25 percent slopes, very rocky.

Range in Characteristics

Thickness of A and B horizons: 15 to 39 inches
Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock
Content of mica flakes: Few or common throughout
Content and size of rock fragments: 5 to 35 percent; mostly gravel and channers and some cobbles, stones, and flagstones

Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A horizon:
Color—hue of 7.5YR to 2.5Y, value of 2 to 6, and chroma of 1 to 6
Texture—dominantly fine sandy loam; sandy loam or loam in some pedons

BA horizon (where present):
Color—hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 3 or 4
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam
Mottles—shades of brown

Bw horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam; thin subhorizons of sandy clay loam in some pedons
Mottles—shades of brown

C horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam
Mottles—shades of brown

Cr layer:
Type of bedrock—soft felsic to intermediate metamorphic rock

R layer:
Type of bedrock—hard felsic to intermediate metamorphic rock

Cleveland Series

Depth class: Shallow
Agricultural drainage class: Somewhat excessively drained
Saturated hydraulic conductivity class: High
Landscape: Blue Ridge mountains and Pilot Mountain
Landform: Mountains, escarpments, and spurs
Geomorphic component: Mountaintops and mountain flanks
Parent material: Residuum weathered from felsic and intermediate metamorphic rock
Slope: 10 to 90 percent
Taxonomic class: Loamy, mixed, active, mesic Lithic Dystrudepts (fig. 22)

Typical Pedon

Cleveland gravelly fine sandy loam, in an area of Cleveland-Rock outcrop-Peaks complex, windswept, 10 to 45 percent slopes, very bouldery; in Surry County; about 3.5 miles northeast of Low Gap, 0.1 mile southeast of the intersection of Virginia Road 612 and the Blue Ridge Parkway on Virginia Road 612, about 4.0 miles south on Fishers Peak Access Road into Surry County, 200 feet west of Fishers Peak, 20 feet south of road in hardwood forest; USGS Lambsburg topographic quadrangle; lat. 36 degrees 33 minutes 34 seconds N. and long. 80 degrees 49 minutes 29 seconds W.

A—0 to 4 inches; very dark grayish brown (10YR 3/2) gravelly fine sandy loam; weak medium granular structure; very friable; nonsticky, nonplastic; common fine, medium, and coarse roots; few fine flakes of mica; 20 percent gneiss gravel, 5 percent gneiss cobbles, 1 percent gneiss stones, and 1 percent gneiss boulders; strongly acid; clear smooth boundary.

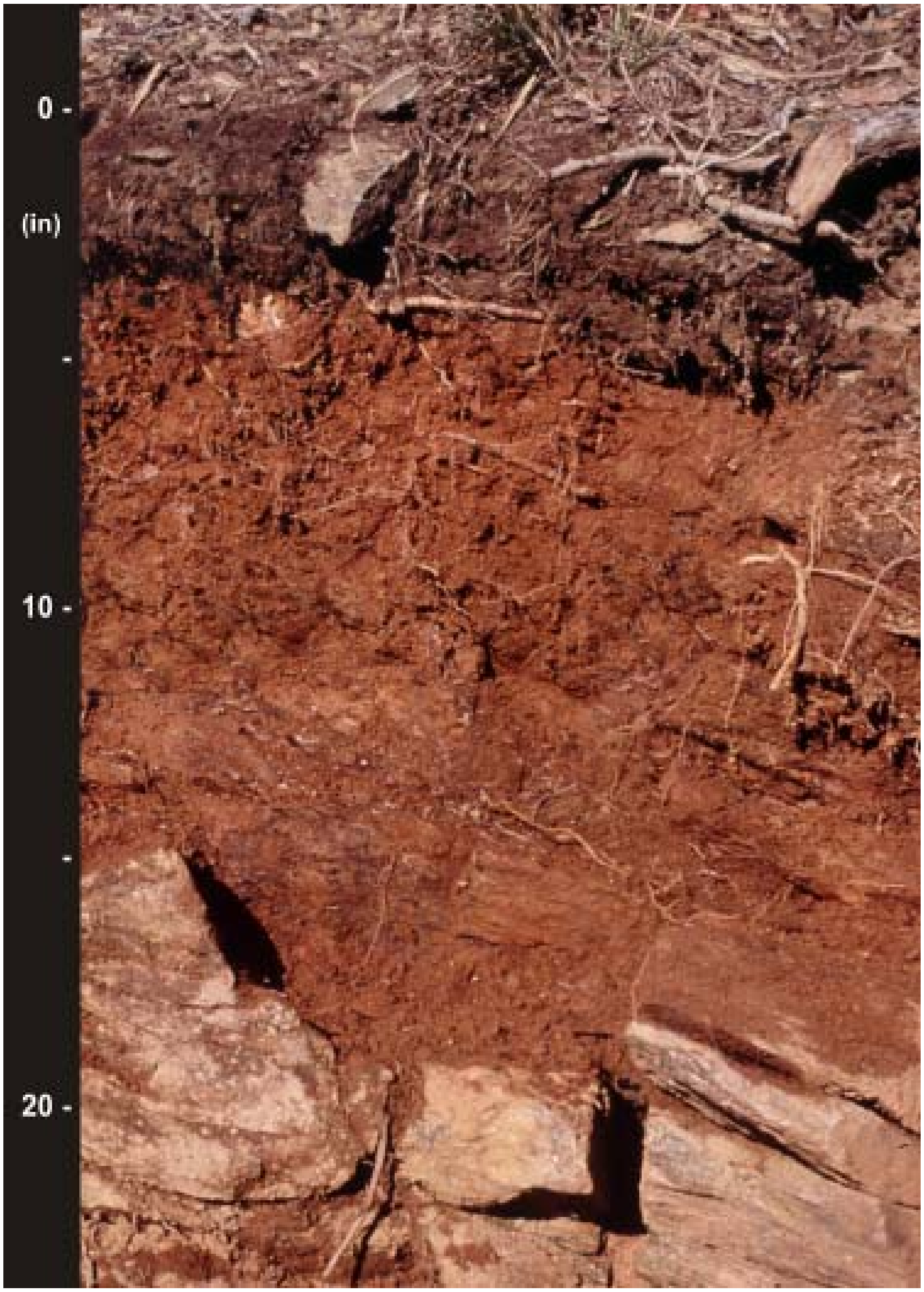

Figure 22.—A profile of Cleveland gravelly fine sandy loam in an area of Cleveland-Rock outcrop-Peaks complex, windswept, 10 to 45 percent slopes, very bouldery.

Bw1—4 to 12 inches; dark yellowish brown (10YR 4/6) gravelly fine sandy loam; weak fine subangular blocky structure; very friable; nonsticky, nonplastic; few fine and common medium and coarse roots; few fine flakes of mica; 25 percent gneiss gravel; strongly acid; clear smooth boundary.

Bw2—12 to 15 inches; dark yellowish brown (10YR 4/6) very gravelly fine sandy loam; weak medium angular blocky structure; very friable; nonsticky, nonplastic; few medium and coarse roots; few fine flakes of mica; 35 percent gneiss gravel; strongly acid; abrupt wavy boundary.

R—15 inches; hard felsic gneiss.

Range in Characteristics

Thickness of A and B horizons: 10 to 20 inches
Depth to bedrock: 10 to 20 inches to hard bedrock
Content of mica flakes: Few or common throughout
Content and size of rock fragments: 5 to 35 percent in the A and upper Bw horizons, 5 to 45 percent in the lower Bw and C horizons, and not to exceed an average of 35 percent in the control section; ranging in size from gravel to boulders
Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A horizon:
Color—hue of 7.5YR or 10YR, value of 2 to 5, and chroma of 1 to 4
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons

E horizon (where present):
Color—hue of 10YR, value of 3 or 4, and chroma of 2 to 4
Texture (fine-earth fraction)—fine sandy loam

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

C horizon (where present):
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 or 4; or variegated in shades of red, brown, and yellow
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

R layer:
Type of bedrock—hard felsic gneiss

Cliffield Series

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Blue Ridge mountains and foothills and Pilot Mountain
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops and mountain flanks
Parent material: Residuum weathered from felsic metamorphic rock, such as metaquartzite, gneiss, and schist
Slope: 8 to 45 percent
Taxonomic class: Loamy-skeletal, mixed, subactive, mesic Typic Hapludults

Typical Pedon

Cliffield extremely stony fine sandy loam, in an area of Cliffield-Sauratown complex, 25 to 45 percent slopes, rubbly; in Surry County; about 2.5 miles south of the town of Pilot Mountain in Pilot Mountain State Park, 1.7 miles west of intersection of U.S. Highway 52 and Secondary Road 2053 on Secondary Road 2053 to straight stretch of road just before sharp curve, about 100 feet north of the road in area of oak and pine forest; USGS Pinnacle topographic quadrangle; lat. 36 degrees 20 minutes 30 seconds N. and long. 80 degrees 29 minutes 01 seconds W.

A1—0 to 3 inches; very dark grayish brown (10YR 3/2) extremely stony fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; common fine and medium and few coarse roots; common fine tubular pores; 15 percent metaquartzite gravel, 20 percent metaquartzite cobbles, 25 percent metaquartzite stones, and 10 percent metaquartzite boulders; extremely acid; clear wavy boundary.

A2—3 to 7 inches; brown (10YR 4/3) extremely stony fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; common fine and medium and few coarse roots; common fine tubular pores; 15 percent metaquartzite gravel, 20 percent metaquartzite cobbles, 25 percent metaquartzite stones, and 5 percent metaquartzite boulders; very strongly acid; gradual wavy boundary.

Bt1—7 to 19 inches; dark yellowish brown (10YR 4/4) very cobbly sandy clay loam; weak fine subangular blocky structure; friable; moderately sticky, slightly plastic; common fine and medium and few coarse roots; common fine tubular pores; few discontinuous distinct clay films on vertical faces of peds; few fine flakes of mica; 15 percent metaquartzite gravel, 20 percent metaquartzite cobbles, and 10 percent metaquartzite stones; very strongly acid; gradual wavy boundary.

Bt2—19 to 27 inches; dark yellowish brown (10YR 4/6) very cobbly sandy clay loam; weak medium subangular blocky structure; friable; moderately sticky, slightly plastic; few fine, medium, and coarse roots; common fine tubular pores; few discontinuous distinct clay films on vertical faces of peds; few fine flakes of mica; 15 percent metaquartzite gravel, 30 percent metaquartzite cobbles, and 10 percent metaquartzite stones; very strongly acid; abrupt wavy boundary.

R—27 inches; hard metaquartzite rock.

Range in Characteristics

Thickness of loamy Bt horizon: 12 to 34 inches

Depth to bedrock: 20 to 40 inches to hard bedrock

Content of mica flakes: Few or common throughout

Content and size of rock fragments: 15 to 70 percent throughout and an average of more than 35 percent in the Bt horizon; mostly gravel, cobbles, and stones and some boulders

Reaction: Extremely acid to strongly acid, except where lime has been applied

A horizon:

Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 6

Texture (fine-earth fraction)—dominantly fine sandy loam, sandy loam, or loam; sandy clay loam, where eroded, in some pedons

E horizon (where present):

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 or 6

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BA or BE horizon (where present):

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 or 6

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

C horizon (where present):

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated

Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, or fine sandy loam

Cr layer (where present):
Type of bedrock—thin layer of variegated, soft metaquartzite, gneiss, or schist

R layer:
Type of bedrock—hard metaquartzite, gneiss, or schist

Clifford Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: Interfluves
Parent material: Residuum weathered from felsic and intermediate metamorphic or igneous rock
Slope: 2 to 8 percent
Taxonomic class: Fine, kaolinitic, mesic Typic Kanhapludults (fig. 23)

Typical Pedon

Clifford sandy clay loam, 2 to 8 percent slopes, moderately eroded; in Surry County; about 0.5 mile west of Dobson, 0.4 mile west of intersection of Secondary Roads 1001 and 1343 on Secondary Road 1001, about 0.2 mile south on farm road, 50 feet west of road in field; USGS Dobson topographic quadrangle; lat. 36 degrees 23 minutes 30 seconds N. and long. 80 degrees 44 minutes 13 seconds W.

Ap—0 to 6 inches; yellowish red (5YR 4/6) sandy clay loam; weak medium granular structure; friable; slightly sticky, slightly plastic; few fine roots; few fine flakes of mica; 5 percent quartz gravel; strongly acid; abrupt smooth boundary.
Bt1—6 to 41 inches; red (10R 4/8) clay; moderate medium subangular blocky structure; firm; moderately sticky, moderately plastic; few fine roots; few fine tubular pores; common discontinuous faint clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel; strongly acid; gradual wavy boundary.
Bt2—41 to 52 inches; red (10R 4/8) clay; weak medium subangular blocky structure; firm; moderately sticky, moderately plastic; few discontinuous faint clay films on faces of peds; common fine flakes of mica; very strongly acid; gradual wavy boundary.
C—52 to 79 inches; red (2.5YR 4/8) clay loam saprolite; massive; friable; slightly sticky, slightly plastic; common fine flakes of mica; very strongly acid.

Range in Characteristics

Thickness of clayey Bt horizon: 25 to 60 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: Few to many throughout
Content and size of rock fragments: 0 to 35 percent in the A and E horizons and 0 to 15 percent in the B and C horizons; mostly gravel and cobbles
Reaction: Very strongly acid or moderately acid throughout, except where lime has been applied

Ap or A horizon:
Color—hue of 5YR to 10YR, value of 3 to 5, and chroma 2 to 6
Texture (fine-earth fraction)—dominantly sandy clay loam; sandy loam, fine sandy loam, loam, or clay loam in some pedons

E horizon (where present):
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

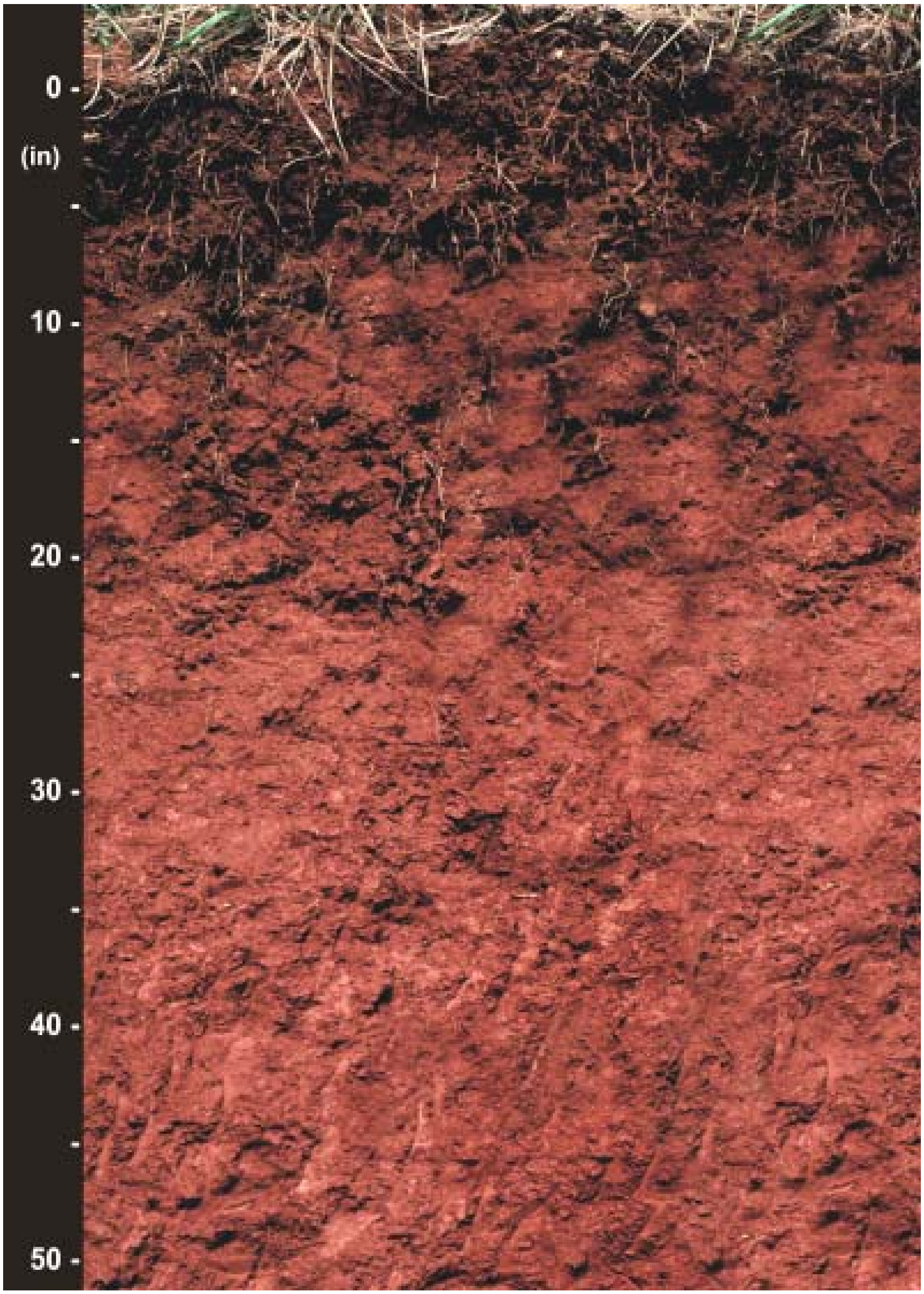

Figure 23.—A profile of Clifford sandy clay loam in an area of Clifford sandy clay loam, 2 to 8 percent slopes, moderately eroded.

BE or BA horizon (where present):
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

Bt horizon:
Color—hue of 10R or 2.5YR, value of 3 to 5, and chroma of 6 or 8; includes hue of 5YR when no mottling is present
Texture (fine-earth fraction)—clay loam or clay
Mottles (where present)—shades of red, yellow, and brown

BC horizon (where present):
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam
Mottles (where present)—shades of red, yellow, and brown

C horizon:
Color—hue of 10R to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated in shades of red, yellow, brown, black, and white
Texture (fine-earth fraction)—saprolite that is sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

Colvard Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: High
Landscape: Piedmont and Blue Ridge foothill valleys
Landform: Flood plains
Geomorphic component: Talfs, dips, and rises
Parent material: Recent alluvium
Slope: 0 to 3 percent
Taxonomic class: Coarse-loamy, mixed, active, nonacid, mesic Typic Udifluvents

Typical Pedon

Colvard fine sandy loam, in an area of Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded; in Surry County; about 12.0 miles west of Dobson, 0.4 mile west of the intersection of Secondary Roads 1330 and 1331 on Secondary Road 1330, about 50 feet south of road in field; USGS Roaring Gap topographic quadrangle; lat. 36 degrees 26 minutes 13 seconds N. and long. 80 degrees 52 minutes 47 seconds W.

Ap—0 to 10 inches; dark yellowish brown (10YR 3/6) fine sandy loam; weak medium granular structure; very friable; nonsticky, nonplastic; common fine roots; few fine tubular pores; few fine flakes of mica; moderately acid; abrupt smooth boundary.
C1—10 to 15 inches; strong brown (7.5YR 4/6) fine sandy loam; weak medium granular structure; very friable; nonsticky, nonplastic; few fine roots; few fine tubular pores; common fine flakes of mica; moderately acid; clear smooth boundary.
C2—15 to 50 inches; brown (7.5YR 4/4) fine sandy loam; massive; very friable; nonsticky, nonplastic; few fine roots; few fine tubular pores; common fine flakes of mica; moderately acid; gradual wavy boundary.
C3—50 to 79 inches; brown (7.5YR 4/4) gravelly loamy fine sand; massive; very friable; nonsticky, nonplastic; common fine flakes of mica; 10 percent gneiss gravel and 5 percent quartz gravel; moderately acid.

Range in Characteristics

Thickness of loamy sediments: 40 to 60 inches or more over deposits of stratified sandy, loamy, gravelly, or cobbly sediments
Depth to bedrock: More than 60 inches
Content of mica flakes: Few or common flakes of mica throughout
Content and size of rock fragments: 0 to 15 percent gravel above a depth of 40 inches and 0 to 80 percent gravel and cobbles below a depth of 40 inches
Reaction: Strongly acid to slightly alkaline, except where lime has been applied

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 6
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons

C horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam above a depth of 40 inches and may have thin strata, usually less than 5 inches thick, of sand, loamy sand, or loamy fine sand; stratified layers of loamy, sandy, gravelly, or cobbly sediments below a depth of 40 inches
Redoximorphic features (where present)—iron depletions in shades of gray and masses of oxidized iron in shades of yellow and brown below a depth of 40 inches

Cowee Series

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Blue Ridge mountains and foothills and Pilot Mountain
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops, mountain flanks, crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic rock
Slope: 8 to 90 percent
Taxonomic class: Fine-loamy, parasesquic, mesic Typic Hapludults (fig. 24)

Typical Pedon

Cowee gravelly loam, 15 to 25 percent slopes, stony; in Surry County; about 1.5 miles southwest of Low Gap, 0.75 mile south of the intersection of Secondary Roads 1410 and 1408 on Secondary Road 1410, about 0.65 mile west and south on private woods road, 200 feet north of road in woodland; USGS Roaring Gap topographic quadrangle; lat. 36 degrees 28 minutes 57 seconds N. and long. 80 degrees 54 minutes 8 seconds W.

A—0 to 3 inches; 95 percent dark brown (10YR 3/3) and 5 percent dark yellowish brown (10YR 4/4) gravelly loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine, medium, and coarse roots; few fine tubular pores; few fine flakes of mica; 10 percent quartz gravel and 10 percent gneissic gravel; very strongly acid; clear smooth boundary.

BA—3 to 6 inches; brown (7.5YR 4/4) loam; weak fine subangular blocky structure; very friable; slightly sticky, slightly plastic; common fine, medium, and coarse roots; few fine tubular pores; few fine flakes of mica; 10 percent quartz gravel; very strongly acid; clear smooth boundary.

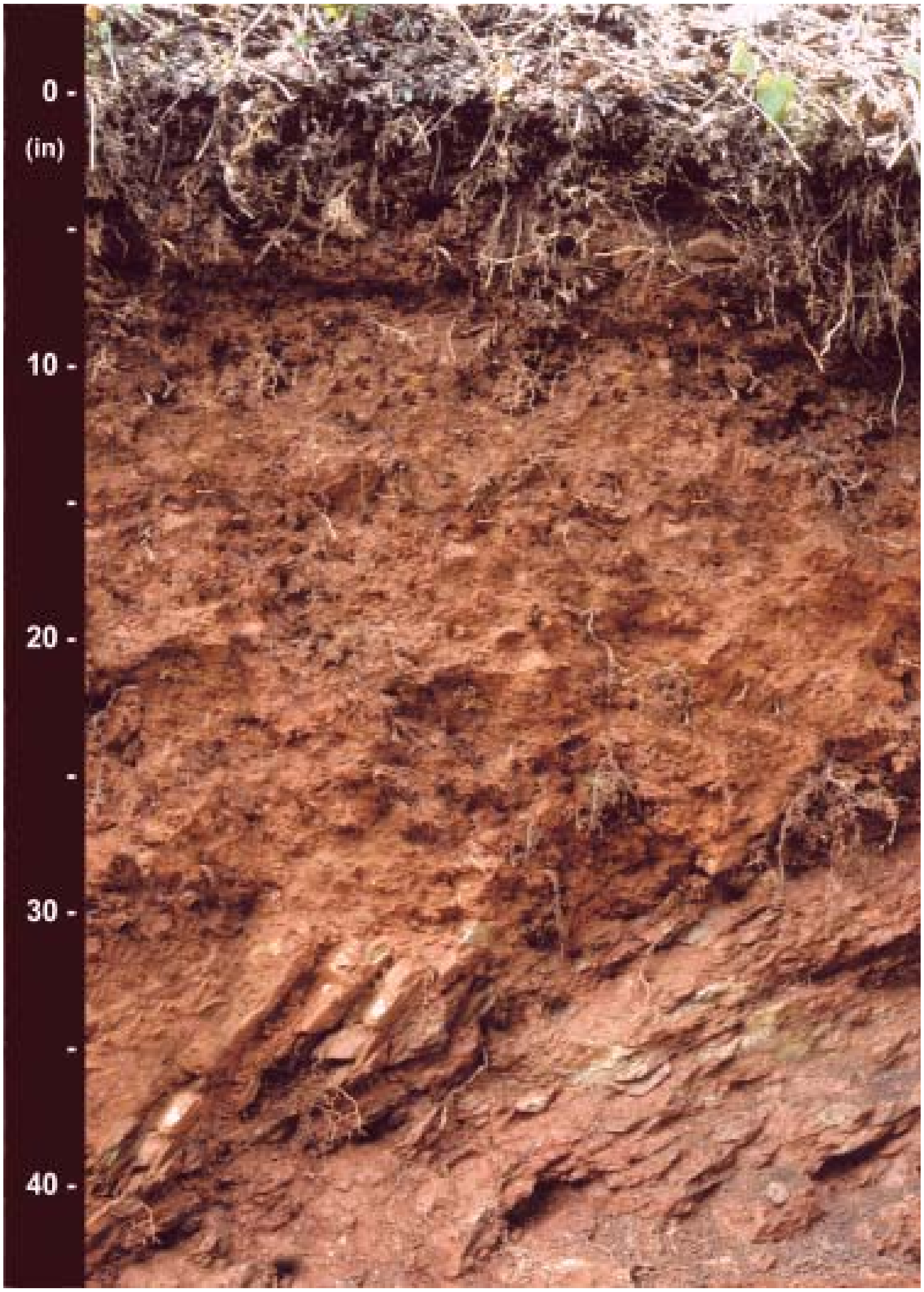

Figure 24.—A profile of Cowee gravelly loam in an area of Cowee gravelly loam, 15 to 25 percent slopes, stony.

Bt1—6 to 15 inches; strong brown (7.5YR 4/6) sandy clay loam; moderate fine and medium subangular blocky structure; friable; slightly sticky, slightly plastic; common fine, medium, and coarse roots; few fine tubular pores; few patchy faint clay films on faces of peds; few fine flakes of mica; 10 percent quartz gravel; very strongly acid; gradual wavy boundary.

Bt2—15 to 27 inches; yellowish red (5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; slightly sticky, moderately plastic; common fine and medium and few coarse roots; few fine tubular pores; few patchy faint clay films on faces of peds; few fine flakes of mica; 10 percent quartz gravel; strongly acid; gradual wavy boundary.

C/Bt—27 to 34 inches; 60 percent brownish yellow (10YR 6/6) gravelly fine sandy loam (C part) and 40 percent pockets of yellowish red (5YR 5/8) sandy clay loam (Bt part); C part is massive; friable; nonsticky, nonplastic; Bt part is weak fine subangular blocky structure; friable; slightly sticky, slightly plastic; few fine, medium, and coarse roots; few fine tubular pores; few fine flakes of mica; 10 percent quartz gravel and 5 percent gneissic gravel; strongly acid; abrupt wavy boundary.

Cr—34 to 79 inches; variegated, soft gneiss.

Range in Characteristics

Thickness of loamy Bt horizon: 10 to 28 inches

Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Content of mica flakes: Few or common throughout

Content and size of rock fragments: 0 to 35 percent throughout; mostly gravel, cobbles, and stones

Reaction: Extremely acid to moderately acid in the A and E horizons and very strongly acid or strongly acid in the B and C horizons, except where lime has been applied

A horizon:

Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 8

Texture (fine-earth fraction)—dominantly loam; sandy loam or fine sandy loam in some pedons

E horizon (where present):

Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BA or BE horizon:

Color—hue of 5YR or 7.5YR, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:

Color—hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 4 to 8; hue of 7.5YR in some pedons

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

BC horizon:

Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or sandy clay loam

C or C/Bt horizon:

Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam saprolite in C horizon or C part of horizon and loam or sandy clay loam in Bt part of horizon

Cr layer:

Type of bedrock—variegated, soft felsic to intermediate gneiss and schist

Devotion Series

Depth class: Moderately deep
Agricultural drainage class: Somewhat excessively drained
Saturated hydraulic conductivity class: High
Landscape: Piedmont uplands
Landform: Hills and ridges
Geomorphic component: Side slopes, nose slopes, and head slopes
Parent material: Felsic and intermediate metamorphic and igneous rock
Slope: 40 to 95 percent
Taxonomic class: Coarse-loamy, mixed, semiactive, mesic Typic Dystrudepts

Typical Pedon

Devotion gravelly fine sandy loam, in an area of Devotion-Rhodhiss-Bannertown complex, 40 to 95 percent slopes, very rocky; in Surry County; about 5.0 miles northeast of Elkin, 0.9 mile south of the intersection of Secondary Roads 1301 and 1307 on Secondary Road 1301, about 1.2 miles southeast on farm road into wooded area between the Mitchell River and the South Fork of the Mitchell River, 50 feet east of farm road in woodland; USGS Elkin North topographic quadrangle; lat. 36 degrees 20 minutes 34 seconds N. and long. 80 degrees 49 minutes 28 seconds W.

A—0 to 7 inches; dark yellowish brown (10YR 3/4) gravelly fine sandy loam; weak medium granular structure; very friable; nonsticky, nonplastic; many fine and medium and few coarse roots; few fine flakes of mica; 10 percent quartz gravel and 10 percent gneiss gravel; very strongly acid; clear wavy boundary.
Bw—7 to 20 inches; strong brown (7.5YR 4/6) gravelly fine sandy loam; weak medium subangular blocky structure parting to weak medium granular; very friable; nonsticky, nonplastic; common fine and medium and few coarse roots; few fine tubular pores; common fine flakes of mica; 10 percent quartz gravel and 5 percent gneiss gravel; very strongly acid; gradual wavy boundary.
C—20 to 24 inches; strong brown (7.5YR 4/6) gravelly fine sandy loam saprolite; massive; very friable; nonsticky, nonplastic; few fine, medium, and coarse roots; few fine tubular pores; common fine flakes of mica; 10 percent quartz gravel and 10 percent gneiss gravel; very strongly acid; abrupt irregular boundary.
Cr—24 to 45 inches; soft quartz mica gneiss
R—45 inches; hard quartz mica gneiss.

Range in Characteristics

Thickness of loamy Bw horizon: 6 to 30 inches
Depth to bedrock: 20 to 40 inches to soft bedrock and 40 to more than 60 inches to hard bedrock
Content of mica flakes: Few or common throughout
Content and size of rock fragments: 5 to 35 percent throughout; mostly gravel, cobbles, and stones
Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 2 to 4
Texture (fine-earth fraction)—dominantly fine sandy loam; loamy sand, loamy fine sand, sandy loam, or loam in some pedons

E horizon (where present):
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 or 4
Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

BA or BE horizon (where present):
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bw horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 7, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam; thin layers of loamy sand or sandy clay loam in some pedons

BC horizon (where present):
Color—hue of 5YR to 2.5Y, value of 4 to 7, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

C horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 6 or 8; or variegated
Texture (fine-earth fraction)—sand, fine sand, loamy sand, loamy fine sand, sandy loam, fine sandy loam

Cr layer:
Type of bedrock—gray to brown, soft gneiss, schist, or granite

R layer:
Type of bedrock—hard gneiss, schist, or granite

Dillard Series

Depth class: Very deep
Agricultural drainage class: Moderately well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont and Blue Ridge mountains and foothill valleys
Landform: Stream terraces and fans
Geomorphic component: Treads, risers, mountain bases, and base slopes
Parent material: Old alluvium
Slope: 2 to 8 percent
Taxonomic class: Fine loamy, mixed, semiactive, mesic Aquic Hapludults

Typical Pedon

Dillard fine sandy loam, 2 to 8 percent slopes, rarely flooded; in Surry County; about 6.0 miles north of Dobson, 0.1 mile northwest of intersection of Secondary Roads 1397 and 1399 on Secondary Road 1397, about 0.6 mile east on farm road holding to the right forks, 80 feet west of farm road in field; USGS Dobson topographic quadrangle; lat. 36 degrees 28 minutes 44 seconds N. and long. 80 degrees 44 minutes 32 seconds W.

Ap—0 to 10 inches; yellowish brown (10YR 5/4) fine sandy loam; moderate medium granular structure; very friable; nonsticky, nonplastic; many fine roots; few fine tubular pores; few fine flakes of mica; 5 percent rounded quartz gravel; moderately acid; abrupt wavy boundary.
Bt1—10 to 19 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate coarse angular blocky structure parting to weak medium subangular blocky; friable; slightly sticky, moderately plastic; common fine roots; common fine tubular pores; common continuous distinct yellowish brown (10YR 5/4) clay films on vertical faces of peds; common distinct yellowish brown (10YR 5/4) silt coats on vertical faces of some coarse peds; few fine flakes of mica; 1 percent rounded quartz gravel; moderately acid; gradual wavy boundary.
Bt2—19 to 24 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; slightly sticky, moderately plastic; few fine

roots; common fine tubular pores; few discontinuous distinct yellowish brown (10YR 5/4) clay films on vertical faces of peds; common medium prominent strong brown (7.5YR 5/8) irregularly shaped masses of oxidized iron that have clear boundaries in the matrix; common fine flakes of mica; 1 percent rounded quartz gravel; strongly acid; gradual wavy boundary.

Bt3—24 to 30 inches; light olive brown (2.5Y 5/4) sandy clay loam; moderate medium subangular blocky structure; friable; slightly sticky, moderately plastic; few fine roots; few fine tubular pores; few discontinuous faint clay films on faces of peds; many medium prominent yellowish red (5YR 5/8) irregularly shaped masses of oxidized iron that have clear boundaries in the matrix; common fine flakes of mica; strongly acid; gradual wavy boundary.

Bt4—30 to 48 inches; light olive brown (2.5Y 5/4) clay; moderate medium subangular blocky structure; firm; moderately sticky, moderately plastic; few fine roots; few fine tubular pores; common medium distinct light brownish gray (2.5Y 6/2) irregularly shaped iron depletions; common medium prominent red (2.5YR 4/8) and many medium prominent yellowish red (5YR 5/8) irregularly shaped masses of oxidized iron that have clear boundaries in the matrix; common fine flakes of mica; 1 percent rounded quartz gravel; strongly acid; gradual wavy boundary.

BCg—48 to 53 inches; light brownish gray (10YR 6/2) clay loam; weak coarse subangular blocky structure; firm; moderately sticky, moderately plastic; many coarse prominent strong brown (7.5YR 5/6) and reddish yellow (7.5YR 6/8) irregularly shaped masses of oxidized iron that have clear boundaries in the matrix; common fine flakes of mica; 1 percent rounded quartz gravel; very strongly acid; gradual wavy boundary.

Cg—53 to 79 inches; light gray (10YR 7/1) clay loam; common coarse prominent grayish brown (10YR 5/2) mottles; massive; firm; moderately sticky, moderately plastic; few medium prominent light yellowish brown (10YR 6/4) and red (2.5YR 5/8) irregularly shaped masses of oxidized iron that have clear boundaries; common fine flakes of mica; very strongly acid.

Range in Characteristics

Thickness of loamy Bt horizon: 14 to 50 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: Few or common throughout
Content and size of rock fragments: 0 to 5 percent in the A horizon, 0 to 15 percent in the Bt horizon, 0 to 5 percent in the Btg horizon, and 0 to 35 percent in the C, 2C, Cg, or 2Cg horizons; mostly rounded quartz pebbles
Reaction: Strongly acid or moderately acid in the A horizon and very strongly acid to moderately acid in the B and C horizons, except where lime has been applied

A or Ap horizon:
Color—hue of 10YR, value of 3 to 5, and chroma of 1 to 4
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam, loam, or sandy clay loam where eroded

E horizon (where present):
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 3 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BE or BA horizon (where present):
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam; clay in the lowest part of the Bt horizon in some pedons
Redoximorphic features (where present)—iron depletions in shades of gray and masses of oxidized iron in shades of brown, yellow, and red in the lower part of the Bt horizon

Btg, 2Btg, BCg, or 2BCg horizon:
Color—iron depleted matrix in hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 1 or 2
Texture (fine-earth fraction)—sandy clay loam, clay loam, sandy clay, or clay
Redoximorphic features—masses of oxidized iron in shades of brown, yellow, and red

C or 2C horizon (where present):
Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 3 to 8
Texture (fine-earth fraction)—stratified sandy, loamy, or clayey
Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of red, brown, and yellow

Cg or 2Cg horizon:
Color—iron depleted matrix in hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2
Texture (fine-earth fraction)—stratified sandy, loamy, or clayey
Redoximorphic features—masses of oxidized iron in shades of red, brown, and yellow

Evard Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Blue Ridge mountains and foothills and Pilot Mountain
Landform: Mountains, spurs, and high hills
Geomorphic component: Mountaintops, mountain flanks, crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic rock
Slope: 8 to 90 percent
Taxonomic class: Fine-loamy, parasesquic, mesic Typic Hapludults

Typical Pedon

Evard gravelly fine sandy loam, in an area of Evard-Cowee complex, 25 to 45 percent slopes, stony; in Surry County; about 12.0 miles west of Dobson, 0.8 mile west of the intersection of Secondary Roads 1330 and 1331 on Secondary Road 1330, about 0.8 mile south on timber road, 300 feet northeast of road in woodland; USGS Roaring Gap topographic quadrangle; lat. 36 degrees 25 minutes 33 seconds N. and long. 80 degrees 52 minutes 37 seconds W.

A—0 to 5 inches; dark yellowish brown (10YR 4/6) gravelly fine sandy loam; weak medium granular structure; very friable; nonsticky, nonplastic; many fine and medium roots; few fine flakes of mica; 15 percent quartz gravel and 5 percent schist channers; very strongly acid; clear smooth boundary.
E—5 to 8 inches; yellowish brown (10YR 5/6) gravelly fine sandy loam; weak medium granular structure; very friable; nonsticky, nonplastic; common fine and medium roots; few fine flakes of mica; 15 percent quartz gravel and 5 percent schist channers; very strongly acid; clear smooth boundary.

BE—8 to 13 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; common fine and medium roots; few fine flakes of mica; 4 percent quartz gravel and 1 percent schist channers; very strongly acid; gradual wavy boundary.

Bt—13 to 29 inches; red (2.5YR 4/8) clay loam; moderate medium subangular blocky structure; friable; slightly sticky, slightly plastic; few fine, medium, and coarse roots; few fine tubular pores; few patchy faint clay films on faces of peds; common fine flakes of mica; 4 percent quartz gravel and 1 percent schist channers; very strongly acid; gradual wavy boundary.

BC—29 to 35 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few fine roots; common fine flakes of mica; 4 percent quartz gravel and 1 percent schist channers; very strongly acid; gradual wavy boundary.

C1—35 to 45 inches; strong brown (7.5YR 5/8) fine sandy loam; massive; very friable; nonsticky, nonplastic; few fine roots; common fine flakes of mica; 4 percent quartz gravel and 1 percent schist channers; strongly acid; clear wavy boundary.

C2—45 to 55 inches; yellowish red (5YR 5/8) gravelly fine sandy loam; massive; very friable; nonsticky, nonplastic; few fine roots; common fine flakes of mica; 5 percent quartz gravel and 10 percent schist channers; strongly acid; clear wavy boundary.

C3—55 to 79 inches; yellowish brown (10YR 5/4) gravelly loamy fine sand; massive; very friable; nonsticky, nonplastic; common fine flakes of mica; 5 percent quartz gravel, 10 percent schist channers, and 5 percent schist parachanners; strongly acid.

Range in Characteristics

Thickness of loamy Bt horizon: 12 to 28 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: None to common throughout
Content and size of rock fragments: 0 to 35 percent in the A, E, and C horizons and 0 to 15 percent in the B horizon; mostly gravel and some cobbles and stones
Reaction: Extremely acid to moderately acid in the A and E horizons and very strongly acid or strongly acid in the B and C horizons, except where lime has been applied

A horizon:
Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 3 to 6
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons

E horizon:
Color—hue of 5YR to 10YR, value 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BE or BA horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 8, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

Bt horizon:
Color—hue of 2.5YR or 5YR, value of 4 or 5, and chroma of 4 to 8; hue of 7.5YR or 10YR, value of 4 to 8, and chroma of 4 to 8 in the upper part of the Bt horizon in pedons without a BE or BA horizon
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

BC horizon:
Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 or 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Mottles—shades of red, brown, and yellow

C horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam
Mottles—shades of red, brown, and yellow; shades of gray or black where relict rock material is present

Fairview Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: Interfluves, hills, and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic or igneous rock
Slope: 2 to 45 percent
Taxonomic class: Fine, kaolinitic, mesic Typic Kanhapludults (fig. 25)

Typical Pedon

Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded; in Surry County; about 2.5 miles west of Dobson, about 1,000 feet northwest of the intersection of Secondary Roads 1001 and 1124 in a pasture; USGS Bottom topographic quadrangle; lat. 36 degrees 24 minutes 3 seconds N. and long. 80 degrees 46 minutes 25 seconds W.

Ap1—0 to 4 inches; brown (7.5YR 4/4) and strong brown (7.5YR 4/6) sandy clay loam; weak medium granular structure; friable; slightly sticky, slightly plastic; many fine roots; 4 percent quartz gravel and 1 percent schist channers; moderately acid; clear wavy boundary.

Ap2—4 to 9 inches; strong brown (7.5YR 4/6) sandy clay loam; weak fine and medium subangular blocky structure; friable; slightly sticky, slightly plastic; common fine roots; few fine tubular pores; few fine prominent red (2.5YR 4/8) bodies of B material; few fine flakes of mica; 4 percent quartz gravel and 1 percent schist channers; moderately acid; clear wavy boundary.

Bt—9 to 24 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm; moderately sticky, moderately plastic; few fine roots; common fine tubular pores; few discontinuous faint clay films on faces of peds; common fine flakes of mica; 1 percent quartz gravel and 1 percent schist channers; moderately acid; gradual wavy boundary.

BC—24 to 29 inches; red (2.5YR 4/8) clay loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few fine roots; few fine tubular pores; common fine flakes of mica; 2 percent quartz gravel, 1 percent schist channers, and 5 percent prominent brownish yellow (10YR 6/6) schist parachanners; moderately acid; gradual wavy boundary.

C—29 to 79 inches; red (10R 5/6) loam saprolite; massive; friable; nonsticky, nonplastic; common fine flakes of mica; 2 percent quartz gravel and 1 percent schist channers; 10 percent brown, yellow, and black schist parachanners; strongly acid.

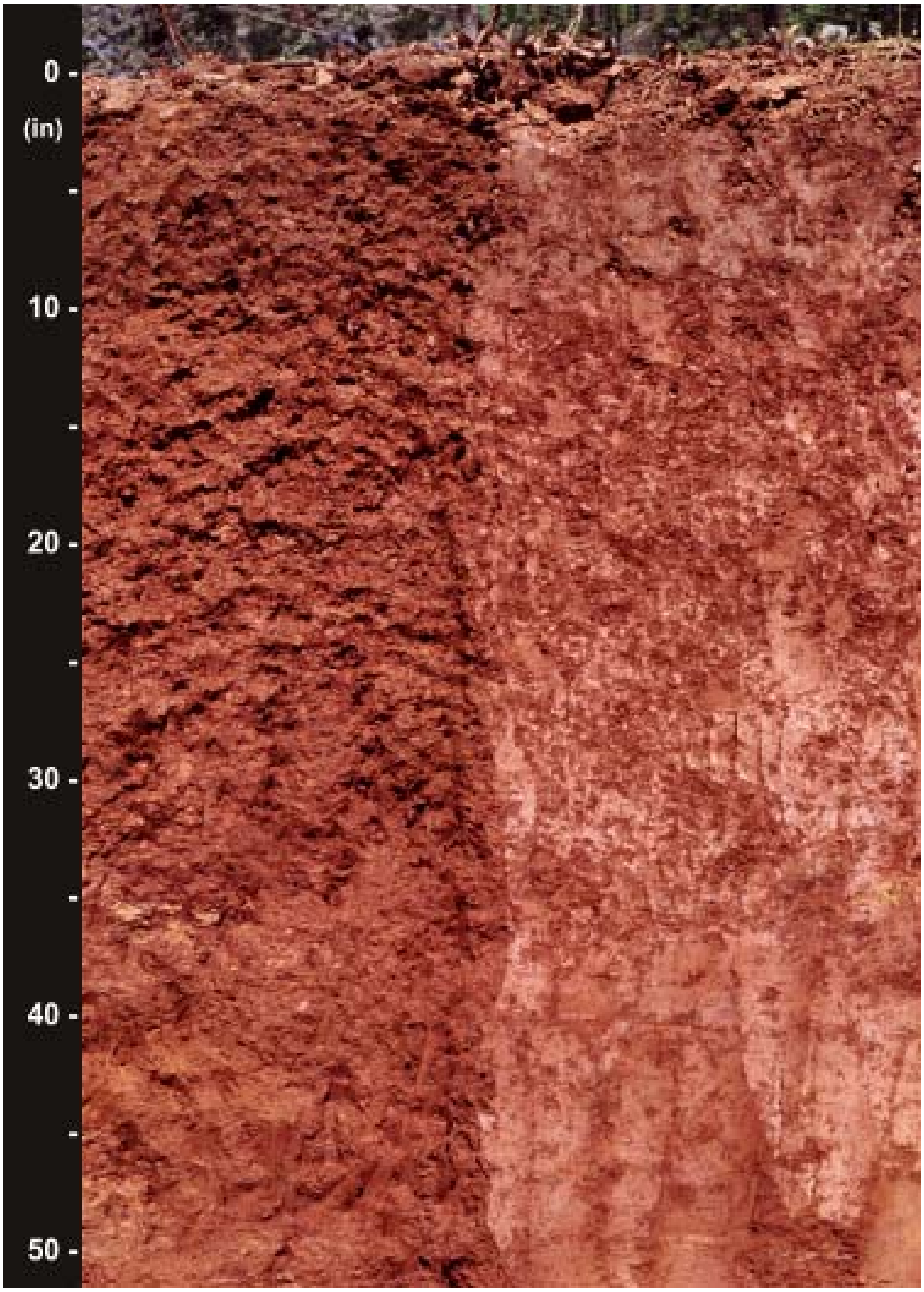

Figure 25.—A profile of Fairview sandy clay loam in an area of Fairview sandy clay loam, 2 to 8 percent slopes, moderately eroded.

Range in Characteristics

Thickness of clayey Bt horizon: 11 to 24 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: None to common in the A and upper B horizons and few to many in the lower B and C horizons

Content and size of rock fragments: 0 to 40 percent in the A and E horizons and 0 to 30 percent in the B and C horizons; mostly gravel and some cobbles, stones, channers, and flagstones
Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A or Ap horizon:
Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 to 8
Texture (fine-earth fraction)—dominantly sandy clay loam; sandy loam, fine sandy loam, loam, or clay loam in some pedons

E horizon (where present):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BE or BA horizon (where present):
Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

Bt horizon:
Color—hue of 10R to 5YR, value of 4 or 5, and chroma of 4 to 8
Texture (fine-earth fraction)—clay loam, sandy clay, or clay
Mottles (where present)—shades of yellow, brown, and red; more common in the lower Bt horizon

BC or CB horizon:
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Mottles (where present)—shades of yellow, brown, and red

C horizon:
Color—hue of 10R to 7.5YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam saprolite

Greenlee Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: High
Landscape: Pilot Mountain and Blue Ridge mountain and foothill valleys
Landform: Fans, fan remnants, and stream terraces
Geomorphic component: Mountain flanks, mountain bases, and base slopes
Parent material: Colluvium derived mainly from felsic and intermediate metamorphic rock; mostly metaquartzite
Slope: 8 to 60 percent
Taxonomic class: Loamy-skeletal, siliceous, semiactive, mesic Typic Dystrudepts

Typical Pedon

Greenlee extremely bouldery fine sandy loam, 25 to 60 percent slopes, rubbly; in Surry County; about 2.5 miles south of the town of Pilot Mountain in Pilot Mountain State Park, 1.8 miles west of intersection of U.S. Highway 52 and Secondary Road 2053 on Secondary Road 2053, about 1,100 feet west of the point where the road makes a sharp turn to the east in area of oak and pine forest; USGS Pinnacle topographic quadrangle; lat. 36 degrees 20 minutes 25 seconds N. and long. 80 degrees 29 minutes 22 seconds W.

A—0 to 5 inches; dark gray (10YR 4/1) extremely bouldery fine sandy loam; moderate fine granular structure; very friable; nonsticky, nonplastic; common fine, medium, and coarse roots; few fine tubular pores; 20 percent metaquartzite gravel, 20 percent metaquartzite cobbles, 15 percent metaquartzite stones, and 20 percent metaquartzite boulders; very strongly acid; gradual wavy boundary.

Ab—5 to 12 inches; brown (10YR 5/3) extremely stony fine sandy loam; weak coarse granular structure; very friable; nonsticky, nonplastic; common fine, medium, and coarse roots; common fine tubular pores; 15 percent metaquartzite gravel, 20 percent metaquartzite cobbles, 20 percent metaquartzite stones, and 5 percent metaquartzite boulders; strongly acid; gradual wavy boundary.

Bw1—12 to 34 inches; yellowish brown (10YR 5/4) very stony fine sandy loam; weak medium subangular blocky structure; very friable; nonsticky, nonplastic; few medium and coarse roots; few medium tubular pores; few fine flakes of mica; 15 percent metaquartzite gravel, 20 percent metaquartzite cobbles, and 20 percent metaquartzite stones; strongly acid; gradual wavy boundary.

Bw2—34 to 79 inches; yellowish brown (10YR 5/6) extremely stony fine sandy loam; weak medium subangular blocky structure; very friable; nonsticky, nonplastic; few medium and coarse roots; few medium tubular pores; few fine flakes of mica; 20 percent metaquartzite gravel, 20 percent metaquartzite cobbles, and 20 percent metaquartzite stones; strongly acid.

Range in Characteristics

Thickness of A and B horizons: 20 to 60 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: None to common throughout
Content and size of rock fragments: 35 to 80 percent throughout; ranging in size from gravel to boulders
Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A horizon:
Color—hue of 7.5YR or 10YR, value of 2 to 5, and chroma of 1 to 4
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam, loam, or sandy clay loam in some pedons; thin recent colluvial surface deposits of loamy fine sand in some pedons on Pilot Mountain

AB horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or sandy clay loam

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or sandy clay loam

BC horizon (where present):
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6
Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

C horizon (where present):
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6
Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Note: Greenlee soils in Surry County are a taxadjunct to the Greenlee series because they have a siliceous mineralogy. Greenlee soils generally have mixed mineralogy. In addition, Greenlee soils in Surry County generally have slightly more rock fragments throughout the profile than is common for the series.

Hatboro Series

Depth class: Very deep
Agricultural drainage class: Poorly drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont and Blue Ridge foothill valleys
Landform: Flood plains
Geomorphic component: Talfs and dips
Parent material: Recent alluvium
Slope: 0 to 2 percent
Taxonomic class: Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Hatboro loam, 0 to 2 percent slopes, frequently flooded; in Surry County; about 6.0 miles north of Dobson, 0.1 mile northwest of the intersection of Secondary Roads 1397 and 1399 on Secondary Road 1397, about 0.6 mile east on farm road into field, 0.2 mile southeast along ditch, 150 feet northeast in corn field; USGS Dobson topographic quadrangle; lat. 36 degrees 28 minutes 52 seconds N. and long. 80 degrees 44 minutes 29 seconds W.

Ap1—0 to 4 inches; dark grayish brown (10YR 4/2) loam; weak medium granular structure; friable; nonsticky, nonplastic; many fine and few medium roots; few fine tubular pores; few fine prominent strong brown (7.5YR 5/6) soft masses of oxidized iron; common fine flakes of mica; neutral; clear wavy boundary.

Ap2—4 to 8 inches; dark grayish brown (10YR 4/2) loam; moderate coarse angular blocky structure parting to weak medium granular; friable; nonsticky, nonplastic; common fine and medium roots; few fine tubular pores; common fine prominent strong brown (7.5YR 5/6) soft masses of oxidized iron; common fine flakes of mica; neutral; abrupt wavy boundary.

Bg1—8 to 15 inches; dark grayish brown (10YR 4/2) sandy clay loam; moderate coarse columnar structure parting to weak coarse angular blocky; friable; slightly sticky, slightly plastic; few fine roots; few fine tubular pores; many coarse faint very dark grayish brown (10YR 3/2) organically stained bodies; many coarse prominent strong brown (7.5YR 5/8) soft masses of oxidized iron; common fine flakes of mica; slightly acid; gradual wavy boundary.

Bg2—15 to 22 inches; gray (10YR 5/1) sandy clay loam; moderate coarse columnar structure parting to weak coarse subangular blocky; friable; slightly sticky, slightly plastic; few fine roots; few fine tubular pores; common medium prominent yellowish brown (10YR 5/6) and few coarse prominent strong brown (7.5YR 5/6) soft masses of oxidized iron; common fine flakes of mica; strongly acid; gradual wavy boundary.

Bg3—22 to 35 inches; gray (10YR 5/1) sandy clay loam that has lenses of sand and clay loam; moderate coarse columnar structure parting to weak coarse subangular blocky; friable; slightly sticky, slightly plastic; few fine roots; few fine tubular pores; few coarse prominent very dark gray (2.5Y 3/1) bodies; common medium prominent yellowish brown (10YR 5/6) soft masses of oxidized iron; common fine flakes of mica; strongly acid; clear wavy boundary.

Ab—35 to 41 inches; 90 percent very dark grayish brown (10YR 3/2) and 10 percent dark grayish brown (10YR 4/2) fine sandy loam that has lenses of sandy clay loam and clay loam; weak medium angular blocky structure; friable; nonsticky, nonplastic; many fine partially decayed roots; few fine tubular pores; common medium distinct yellowish brown (10YR 5/6) soft masses of oxidized iron; common fine flakes of mica; moderately acid; clear wavy boundary.

Cg—41 to 79 inches; 85 percent dark grayish brown (10YR 4/2) and 15 percent grayish brown (10YR 5/2) very gravelly loamy sand; massive; very friable; nonsticky, nonplastic; common fine flakes of mica; 25 percent rounded quartz gravel and 10 percent rounded quartz cobbles; moderately acid.

Range in Characteristics

Thickness of loamy B horizon: 25 to 50 inches; more than 40 inches to strongly contrasting sand and gravel
Depth to bedrock: More than 60 inches
Content of mica flakes: Common throughout
Content and size of rock fragments: 0 to 10 percent in the A and B horizons and 0 to 80 percent in the C horizon; mostly rounded quartz pebbles
Reaction: Very strongly acid to neutral to a depth of 30 inches and moderately acid or slightly acid below a depth of 30 inches, except where lime has been applied

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 to 4
Texture (fine-earth fraction)—dominantly loam; sandy loam, fine sandy loam, silt loam, or sandy clay loam in some pedons
Redoximorphic features—soft masses of oxidized iron in shades of brown

AB horizon:
Color—hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 to 4
Texture (fine-earth fraction)—loam, sandy loam, fine sandy loam, silt loam, or sandy clay loam
Redoximorphic features—soft masses of oxidized iron in shades of brown

Bg horizon:
Color—iron depleted matrix in hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2; or neutral in hue and has value of 4 to 7
Texture (fine-earth fraction)—sandy clay loam, clay loam, loam, silt loam, or silty clay loam
Redoximorphic features—soft masses of oxidized iron in shades of brown

Cg horizon:
Color—iron depleted matrix in hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2; or neutral in hue and has value of 4 to 7
Texture (fine-earth fraction)—sandy, loamy, or clayey sediments that may be stratified
Redoximorphic features (where present)—soft masses of oxidized iron in shades of brown

Meadowfield Series

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: High hills and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes

Parent material: Residuum weathered from high-grade metamorphic rock, such as sillimanite schist
Slope: 8 to 45 percent
Taxonomic class: Loamy-skeletal, mixed, subactive, mesic Typic Hapludults

Typical Pedon

Meadowfield very gravelly loam, in an area of Meadowfield-Stott Knob complex, 15 to 25 percent slopes, very stony; in Surry County; about 6.9 miles northeast of Mount Airy at the North Carolina-Virginia State line, 0.4 mile east of the intersection of Virginia Secondary Road 668 and N.C. Secondary Road 1742 on Virginia Secondary Road 668, about 0.4 mile southeast of Virginia Secondary Road 668 on farm and access road along power line right-of-way (into Surry County) to top of ridge, 0.1 mile east-northeast on woods road, 55 feet south of road in woodland; USGS Mount Airy North topographic quadrangle; lat. 36 degrees 33 minutes 01 seconds N. and long. 80 degrees 30 minutes 53 seconds W.

A—0 to 4 inches; dark yellowish brown (10YR 3/4) very gravelly loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine, medium, and coarse roots; many fine tubular pores; few fine flakes of mica; 15 percent schist gravel, 10 percent quartz gravel, 10 percent schist channers, 10 percent schist cobbles, 5 percent quartz cobbles, and 1 percent schist stones; extremely acid; clear wavy boundary.
Bt1—4 to 8 inches; strong brown (7.5YR 4/6) very gravelly loam; weak fine subangular blocky structure; very friable; slightly sticky, slightly plastic; many fine, medium, and coarse roots; common fine tubular pores; common fine distinct dark yellowish brown (10YR 3/4) fillings in old root channels and between peds; few fine flakes of mica; 10 percent schist gravel, 10 percent quartz gravel, 10 percent schist channers, 10 percent schist cobbles, and 5 percent quartz cobbles; very strongly acid; gradual wavy boundary.
Bt2—8 to 22 inches; yellowish red (5YR 4/6) very gravelly clay loam; moderate medium subangular blocky structure; friable; moderately sticky, moderately plastic; common fine, medium, and coarse roots; common fine tubular pores; few patchy faint clay films on vertical faces of peds; few fine flakes of mica; 10 percent schist gravel, 10 percent quartz gravel, 15 percent schist channers, 5 percent schist cobbles, 5 percent quartz cobbles, and 5 percent schist parachanners; very strongly acid; gradual irregular boundary.
C/Bt—22 to 28 inches; 80 percent red, yellow, and brown extremely gravelly loam saprolite that has 20 percent pockets of red (2.5YR 4/8) very gravelly clay loam; C part is massive; friable; nonsticky, nonplastic; Bt part is weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few fine, medium, and coarse roots; few fine flakes of mica; 20 percent schist gravel, 10 percent quartz gravel, 10 percent schist channers, 10 percent schist cobbles, 5 percent quartz cobbles, and 10 percent schist parachanners; very strongly acid; abrupt irregular boundary.
R—28 inches; variegated, hard sillimanite schist.

Range in Characteristics

Thickness of loamy Bt horizon: 10 to 30 inches
Depth to bedrock: 20 to 40 inches to soft bedrock, when present, and 20 to 40 inches to hard bedrock
Content of mica flakes: None or few in the A and upper Bt horizons and none to common in the lower Bt and C horizons
Content and size of rock fragments: 15 to 70 percent throughout and more than 35 percent, on average, in the Bt horizon; mostly gravel, cobbles, channers, and flagstones

Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A or Ap horizon:
Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 6
Texture (fine-earth fraction)—dominantly loam; sandy loam, fine sandy loam, or very fine sandy loam in some pedons; sandy clay loam or clay loam where eroded

E horizon (where present):
Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, very fine sandy loam, or loam

BA or BE horizon (where present):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 or 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, sandy clay loam, or clay loam

BC or Bt/C horizon (where present):
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—Bt part is loam, sandy clay loam, or clay loam and C part is sandy loam, fine sandy loam, or loam

C/Bt horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—C part is sandy loam, fine sandy loam, or loam and Bt part is loam, sandy clay loam, or clay loam

C horizon (where present):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam saprolite

Ct horizon (where present):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8, or variegated in these colors
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam; clay flows in fractures of moderately hard bedrock

Cr layer (where present):
Type of bedrock—variegated, soft schist or gneiss.

R layer:
Type of bedrock—hard schist or gneiss.

Nikwasi Series

Depth class: Very deep
Agricultural drainage class: Very poorly drained
Saturated hydraulic conductivity class: High in the A horizon and high or very high in the C horizon
Landscape: Blue Ridge mountain valleys
Landform: Flood plains

Geomorphic component: Dips
Parent material: Recent alluvium
Slope: 0 to 3 percent
Taxonomic class: Coarse-loamy over sandy or sandy-skeletal, mixed, superactive, nonacid, mesic Cumulic Humaquepts

Typical Pedon

Nikwasi loam, in an area of Bandana-Tate-Nikwasi complex, 0 to 15 percent slopes, frequently flooded; in Surry County; about 3.0 miles south of Low Gap, 0.3 mile west of intersection of Secondary roads 1421 and 1338 on Secondary Road 1421, in Ravens Knob Scout Camp, 1.6 miles northwest of gate on camp road (Valley Road), 30 feet north of road in hardwood forest; USGS Bottom topographic quadrangle; lat. 36 degrees 28 minutes 50 seconds N. and long. 80 degrees 51 minutes 49 seconds W.

A1—0 to 6 inches; very dark gray (10YR 3/1) loam; moderate medium granular structure; friable; nonsticky, nonplastic; many fine, medium, and coarse roots; few fine tubular pores; common fine flakes of mica; very strongly acid; clear wavy boundary.
A2—6 to 20 inches; very dark grayish brown (10YR 3/2) loam; weak medium granular structure; friable; nonsticky, nonplastic; many fine, medium, and coarse roots; few fine tubular pores; common fine flakes of mica; very strongly acid; clear wavy boundary.
A3—20 to 28 inches; dark brown (10YR 3/3) loam; weak medium granular structure; friable; nonsticky, nonplastic; few fine and medium roots; few fine tubular pores; common fine flakes of mica; very strongly acid; clear wavy boundary.
AC—28 to 31 inches; very dark gray (10YR 3/1) loamy fine sand; weak medium granular structure; friable; nonsticky, nonplastic; few fine and medium roots; few fine tubular pores; common fine flakes of mica; strongly acid; clear wavy boundary.
Cg1—31 to 37 inches; dark grayish brown (10YR 4/2) loamy fine sand; massive; very friable; nonsticky, nonplastic; common fine flakes of mica; 5 percent rounded quartz gravel; moderately acid; clear wavy boundary.
Cg2—37 to 79 inches; dark grayish brown (10YR 4/2) very gravelly loamy fine sand; massive; very friable; nonsticky, nonplastic; common fine flakes of mica; 30 percent rounded quartz gravel and 10 percent rounded quartz cobbles; moderately acid.

Range in Characteristics

Depth to sandy layers: 24 to 40 inches to sandy C horizons that contain more than 35 percent gravel and cobbles
Depth to bedrock: More than 60 inches
Content of mica flakes: None to many throughout
Content and size of rock fragments: Less than 35 percent in the A and AC horizons and more than 35 percent in the C horizon; mostly gravel and cobbles
Reaction: Very strongly acid to slightly acid throughout, except where lime has been applied; some part of control section must be moderately acid or slightly acid

A horizon:
Color—hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 to 3; or neutral in hue and has value of 2 or 3
Texture (fine-earth fraction)—dominantly loam; sandy loam or fine sandy loam in some pedons

AC horizon:
Color—hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 1 to 3; or neutral in hue and has value of 2 or 3

Texture (fine-earth fraction)—coarse sand, sand, loamy coarse sand, loamy sand, or loamy fine sand

Cg horizon:
Color—iron depleted matrix in hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2; or neutral in hue and has value of 4 to 7
Texture (fine-earth fraction)—coarse sand, sand, loamy coarse sand, loamy sand, or loamy fine sand

Peaks Series

Depth class: Moderately deep
Agricultural drainage class: Somewhat excessively drained
Saturated hydraulic conductivity class: High
Landscape: Blue Ridge mountains and foothills and Pilot Mountain
Landform: Mountains, escarpments, and spurs
Geomorphic component: Mountaintops, mountain flanks, crests, side slopes, head slopes, and nose slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic rock
Slope: 8 to 90 percent
Taxonomic class: Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Typical Pedon

Peaks very gravelly fine sandy loam, in an area of Chestnut-Peaks-Tuckasegee complex, 45 to 90 percent slopes, very rocky; in Surry County; about 2.0 miles northeast of Low Gap, 2.6 miles north of intersection of Blue Ridge Parkway and Virginia Highway 89 on Blue Ridge Parkway, 0.1 mile east on Virginia Secondary Road 612, about 2.1 miles south and east into Surry County on private access road for Fishers Peak, 1.3 miles south and west on woods road that intersects Fishers Peak Road, 0.5 mile south on woods road, 1,000 feet south downslope in woods; USGS Lambsburg topographic quadrangle; lat. 36 degrees 32 minutes 58 seconds N. and long. 80 degrees 50 minutes 46 seconds W.

A1—0 to 1 inch; very dark brown (10YR 2/2) very gravelly fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine and common medium and coarse roots; common fine and medium tubular pores; 20 percent gneiss gravel, 10 percent gneiss channers, and 10 percent gneiss cobbles; common fine flakes of mica; very strongly acid; abrupt irregular boundary.

A2—1 to 4 inches; 85 percent dark brown (10YR 3/3) and 15 percent brown (10YR 4/3) very gravelly fine sandy loam; weak granular structure; very friable; nonsticky, nonplastic; many fine and common medium and coarse roots; common fine and medium tubular pores; common fine flakes of mica; 10 percent fillings of very dark brown (10YR 2/2) in old root channels and pores; 20 percent gneiss gravel, 10 percent gneiss channers, and 10 percent gneiss cobbles; strongly acid; gradual wavy boundary.

Bw1—4 to 10 inches; dark yellowish brown (10YR 4/4) gravelly fine sandy loam; weak fine subangular blocky structure; very friable; slightly sticky, nonplastic; common fine, medium, and coarse roots; common fine and medium tubular pores; common fine flakes of mica; few medium faint dark brown (10YR 3/3) fillings in old root channels; 15 percent gneiss gravel, 10 percent gneiss channers, and 5 percent gneiss cobbles; strongly acid; clear irregular boundary.

Bw2—10 to 19 inches; dark yellowish brown (10YR 4/4) very gravelly fine sandy loam; weak fine subangular blocky structure; very friable; slightly sticky, nonplastic;

common fine, medium, and coarse roots; common fine and medium tubular pores; common fine flakes of mica; 30 percent gneiss gravel, 15 percent gneiss channers, and 10 percent gneiss cobbles; strongly acid; gradual irregular boundary.

C—19 to 27 inches; dark yellowish brown (10YR 4/4) extremely gravelly fine sandy loam; massive; very friable; nonsticky, nonplastic; few fine, medium, and coarse roots; common fine and medium tubular pores; common fine flakes of mica; 30 percent gneiss gravel, 15 percent gneiss channers, 15 percent gneiss cobbles, and 10 percent gneiss stones; strongly acid; abrupt irregular boundary.

R—27 inches; felsic, finely banded, hard gneiss.

Range in Characteristics

Thickness of loamy Bw horizon: 12 to 35 inches
Depth to bedrock: 20 to 40 inches to hard bedrock
Content of mica flakes: None to common throughout
Content and size of rock fragments: 15 to 55 percent in the A and E horizons, 35 to 60 percent in the Bw horizon, and 35 to 75 percent in the C horizon; mostly gravel, channers, cobbles, and stones
Reaction: Very strongly acid or moderately acid throughout, except where lime has been applied

A horizon:
Color—hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 2 to 4
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons

E horizon (where present):
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

C horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—loamy sand, sandy loam, fine sandy loam, or loam

Cr layer (where present):
Type of bedrock—soft gneiss or schist

R layer:
Type of bedrock—hard gneiss or schist

Pilot Mountain Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Pilot Mountain and Blue Ridge mountain valleys
Landform: Fans
Geomorphic component: Mountain bases
Parent material: Colluvium and alluvium derived mostly from metaquartzite rock
Slope: 8 to 45 percent
Taxonomic class: Loamy-skeletal, parasesquic, mesic Typic Hapludults

Typical Pedon

Pilot Mountain extremely cobbly fine sandy loam, in an area of Braddock-Pilot Mountain complex, 15 to 45 percent slopes, rubbly; in Surry County; about 2.7 miles south of the town of Pilot Mountain, 0.6 mile west of the intersection of Secondary Road 2053 and U.S. Highway 52 on Secondary Road 2053, 0.5 mile north of Secondary Road 2053 on campsite road, 500 feet southwest of campsite number 12 in hardwood forest; USGS Pinnacle topographic quadrangle; lat. 36 degrees 20 minutes 47 seconds N. and long. 80 degrees 28 minutes 27 seconds W.

Oi—0 to 2 inches; partially decomposed organic matter and hardwood litter.

A—2 to 4 inches; dark brown (10YR 3/3) extremely cobbly fine sandy loam; moderate fine granular structure; very friable; nonsticky, nonplastic; many fine, medium, and coarse roots; common fine and medium tubular pores; 15 percent metaquartzite gravel, 30 percent metaquartzite cobbles, 10 percent metaquartzite stones, and 5 percent metaquartzite boulders; extremely acid; clear wavy boundary.

Ab—4 to 12 inches; dark yellowish brown (10YR 4/4) very cobbly fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine, medium, and coarse roots; common fine tubular pores; 15 percent metaquartzite gravel, 25 percent metaquartzite cobbles, 10 percent metaquartzite stones, and 5 percent metaquartzite boulders; very strongly acid; clear wavy boundary.

Bt1—12 to 16 inches; strong brown (7.5YR 5/8) very cobbly fine sandy loam; common medium distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable; slightly sticky, nonplastic; common medium and few fine and coarse roots; few fine tubular pores; few patchy faint clay films on faces of peds and in old root channels; 15 percent metaquartzite gravel, 25 percent metaquartzite cobbles, 10 percent metaquartzite stones, and 5 percent metaquartzite boulders; very strongly acid; clear wavy boundary.

Bt2—16 to 22 inches; yellowish red (5YR 5/8) very cobbly sandy clay loam; common fine distinct reddish yellow (7.5 YR 6/8) mottles; moderate medium subangular blocky structure; friable; moderately sticky, moderately plastic; few fine and medium roots; few fine and medium tubular pores; few discontinuous faint clay films on faces of peds and in old root channels; 10 percent metaquartzite gravel, 25 percent metaquartzite cobbles, 10 percent metaquartzite stones, and 5 percent metaquartzite boulders; very strongly acid; gradual wavy boundary

Bt3—22 to 30 inches; red (2.5YR 4/8) very cobbly clay; moderate medium subangular blocky structure; friable; very sticky, moderately plastic; few fine and medium roots; few fine and medium tubular pores; few discontinuous faint clay films on faces of peds and in old root channels; few medium prominent brownish yellow (10YR 6/6) pockets of iron depletions; few fine flakes of mica; 10 percent metaquartzite gravel, 20 percent metaquartzite cobbles, 5 percent metaquartzite stones, and 5 percent metaquartzite boulders; strongly acid; gradual wavy boundary

BC—30 to 44 inches; red (2.5YR 4/8) extremely cobbly fine sandy loam; many coarse prominent yellowish brown (10YR 5/8) lithochromic mottles and common medium prominent dark red (10R 3/6) masses of oxidized iron; weak coarse subangular blocky structure; friable; slightly sticky, slightly plastic; few medium roots; few fine flakes of mica; 20 percent metaquartzite gravel, 30 percent metaquartzite cobbles, 10 percent stones, and 5 percent metaquartzite boulders; strongly acid; gradual wavy boundary.

C/Bt—44 to 79 inches; 45 percent red (2.5YR 4/8) and 45 percent yellowish brown (10YR 5/8) extremely stony fine sandy loam (C part) and 10 percent red (2.5YR 4/8) sandy clay loam (Bt part); C part is massive; very friable; nonsticky, nonplastic; Bt part is weak medium subangular blocky structure; friable; moderately sticky, slightly plastic; few fine flakes of mica; 20 percent metaquartzite gravel, 35 percent metaquartzite cobbles, 10 percent metaquartzite stones, and 5 percent metaquartzite boulders; strongly acid.

Range in Characteristics

Thickness of loamy Bt horizon: 14 to 60 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: Few or common throughout
Content and size of rock fragments: 35 to 80 percent in the A and E horizons and 35 to 70 percent in the B and C horizons; as low as 15 percent rock fragments are in individual subhorizons in some pedons; mostly gravel, cobbles, stones, and boulders
Reaction: Extremely acid to strongly acid throughout, except where lime has been applied

A horizon:
Color—hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons

AB or BA horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—dominantly fine sandy loam, loam, sandy clay loam, or clay loam; clay or sandy clay in some pedons
Redoximorphic features (where present)—iron depletions in shades of yellow and masses of oxidized iron in shades of red and brown in the lower Bt horizons; iron depletions in shades of gray below a depth of 36 inches

BC horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 or 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, clay loam, or sandy clay
Redoximorphic features (where present)—iron depletions in shades of yellow and masses of oxidized iron in shades of red and brown; iron depletions in shades of gray below a depth of 36 inches

C or C/Bt horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 6 or 8
Texture (fine-earth fraction)—C part is sandy loam, fine sandy loam, or loam and Bt part is loam, sandy clay loam, or clay loam
Redoximorphic features (where present)—iron depletions in shades of yellow and masses of oxidized iron in shades of red and brown; iron depletions in shades of gray below a depth of 36 inches

Redbrush Series

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high or moderately low
Landscape: Piedmont uplands
Landform: Interfluves, low hills, and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from mafic metamorphic or igneous rock

Slope: 8 to 45 percent
Taxonomic class: Fine, mixed, superactive, mesic Typic Hapludalfs (fig. 26)

Typical Pedon

Redbrush gravelly loam, in an area of Siloam-Redbrush complex, 6 to 15 percent slopes; in Surry County; about 5.1 miles northeast of Dobson, 0.3 mile east of the intersection of Secondary Roads 1356 and 1350 on Secondary Road 1356, about 40 feet south of road in grassland right-of-way; USGS Dobson topographic quadrangle; lat. 36 degrees 27 minutes 51 seconds N. and long. 80 degrees 41 minutes 34 seconds W.

Ap1—0 to 5 inches; very dark grayish brown (2.5Y 3/2) gravelly loam; moderate medium granular structure; friable; slightly sticky, slightly plastic; many fine and common medium roots; few fine tubular pores; few fine flakes of mica; 15 percent quartz gravel and 5 percent quartz cobbles; slightly acid; clear wavy boundary.
Ap2—5 to 8 inches; olive (5Y 4/4) gravelly loam; moderate fine subangular blocky structure parting to moderate fine granular; friable; slightly sticky, slightly plastic; common fine and few medium roots; few fine tubular pores; common medium prominent yellowish brown (10YR 5/6) bodies of clay loam Bt material; few fine flakes of mica; 15 percent quartz gravel and 5 percent quartz cobbles; slightly acid; abrupt irregular boundary.
Bt—8 to 18 inches; yellowish brown (10YR 5/8) and (10YR 5/6) clay; weak medium columnar structure parting to strong medium and coarse subangular blocky; firm; very sticky, very plastic; common fine and few medium roots between peds; common medium tubular pores; common continuous prominent light olive brown (2.5Y 5/3) clay films on faces of peds; common continuous prominent olive (5Y 4/4) silt coatings on vertical faces of peds; common fine manganese concretions; few fine flakes of mica; 5 percent quartz gravel and 5 percent quartz cobbles; neutral; clear irregular boundary.
C/Bt—18 to 25 inches; 60 percent black and green weathered gneissic loam saprolite (C part) and 40 percent yellowish brown (10YR 5/8) clay (Bt part); C part is massive; friable; slightly sticky, slightly plastic; Bt part is strong coarse angular blocky structure; firm; very sticky, very plastic; common fine roots between peds; few fine tubular pores; few patchy prominent light olive brown (2.5Y 5/3) clay films on faces of peds; few patchy prominent olive (5Y 4/4) silt coatings between peds; few fine flakes of mica; 5 percent quartz gravel, 5 percent quartz cobbles, and 5 percent gneiss paragravel; neutral; abrupt irregular boundary.
Cr—25 to 37 inches; soft mafic gneiss.
R—37 inches; hard mafic gneiss.

Range in Characteristics

Thickness of clayey Bt horizon: 6 to 30 inches
Depth to bedrock: 20 to 40 inches to soft bedrock, where present, and 20 to 40 inches to hard bedrock
Content of mica flakes: None to common throughout
Content and size of rock fragments: 0 to 50 percent in the A, E, BA, and BE horizons and 0 to 35 percent in the Bt, BC, B/C, C, and C/Bt horizons; mostly gravel, cobbles, and stones
Content of manganese concretions: None to common throughout
Reaction: Strongly acid to slightly acid in the upper horizons and moderately acid to slightly alkaline in the Bt and lower horizons, except where lime has been applied

A or Ap horizon:
Color—hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 2 to 6

Texture (fine-earth fraction)—dominantly loam; sandy loam or fine sandy loam in some pedons; sandy clay loam or clay loam where eroded

E horizon (where present):

Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6

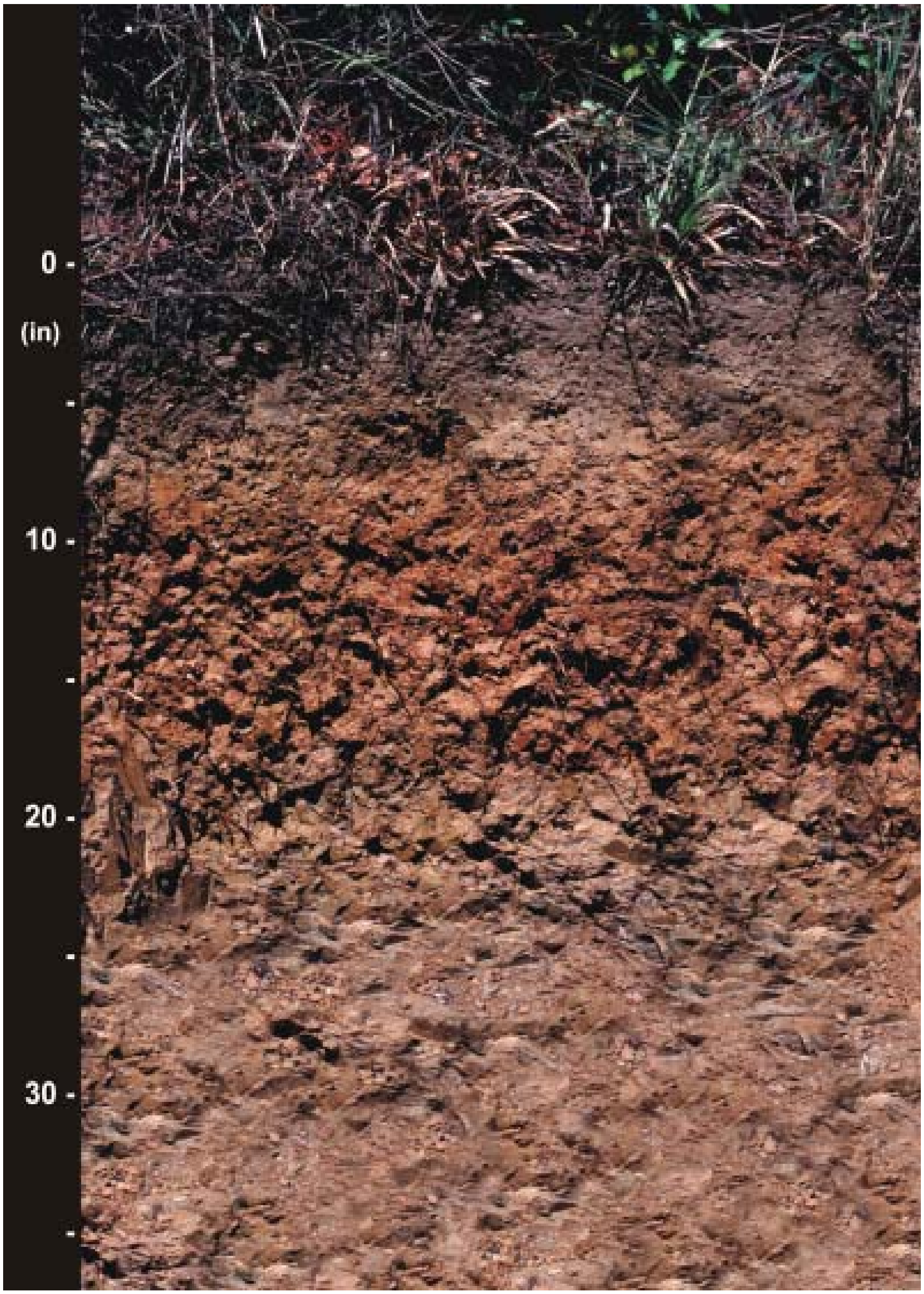

Figure 26.—A profile of Redbrush gravelly loam in an area of Siloam-Redbrush complex, 6 to 15 percent slopes.

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BE or BA horizon (where present):
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

Bt horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—clay loam, sandy clay, or clay
Mottles— Few or common bodies or streaks of black, greenish, grayish, or whitish saprolite or primary minerals

Bt/C horizon (where present):
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—Bt part is clay loam, sandy clay, or clay and C part is loamy saprolite
Mottles—shades of black, green, brown, yellow, white, and gray (lithochromic)

BC horizon (where present):
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam
Mottles—shades of black, green, brown, yellow, white, and gray (lithochromic)

C or C/Bt horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—C part is sandy loam, fine sandy loam, or loam saprolite and Bt part is loam, sandy clay loam, or clay loam pore linings that fill relict rock fractures and old root channels
Mottles—shades of black, green, brown, yellow, white, and gray (lithochromic)

Cr layer:
Type of bedrock—variegated, soft mafic to intermediate metamorphic and igneous rock

R layer:
Type of bedrock—hard mafic to intermediate metamorphic and igneous rock

Rhodhiss Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: Interfluves, low hills, and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic or igneous rock
Slope: 2 to 95 percent
Taxonomic class: Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Rhodhiss coarse sandy loam, in an area of Rhodhiss-Bannertown complex, 15 to 25 percent slopes, very rocky; in Surry County; in the town of Mount Airy, about 1.0 mile southwest of intersection of U.S. Highway 601 and U.S. Highway 52 on U.S. Highway 601, about 200 feet west of the intersection of U.S. Highway 601 and Secondary Road 1365 in woodland; USGS Mount Airy South topographic quadrangle; lat. 36 degrees 28 minutes 17 seconds N. and long. 80 degrees 37 minutes 27 seconds W.

A—0 to 6 inches; dark yellowish brown (10YR 4/4) coarse sandy loam; weak medium granular structure; very friable; nonsticky, nonplastic; common fine and medium and few coarse roots; few fine pores; few fine flakes of mica; 10 percent quartz gravel; very strongly acid; clear wavy boundary.

E—6 to 10 inches; yellowish brown (10YR 5/6) coarse sandy loam; weak medium granular structure; very friable; common fine and medium and few coarse roots; few fine pores; few fine flakes of mica; 10 percent quartz gravel; strongly acid; clear wavy boundary.

Bt1—10 to 14 inches; yellowish brown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; moderately sticky, slightly plastic; common fine, medium, and coarse roots; few patchy distinct yellowish brown (10YR 5/4) clay films on faces of peds; few fine and medium pores; few fine flakes of mica; 10 percent quartz gravel; strongly acid; gradual wavy boundary.

Bt2—14 to 19 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; moderately sticky, slightly plastic; few fine, medium, and coarse roots; few discontinuous distinct yellowish brown (10YR 5/4) clay films on faces of peds; common fine grains of feldspar; common fine flakes of mica; 10 percent quartz gravel; strongly acid; gradual wavy boundary.

Bt3—19 to 27 inches; brownish yellow (10YR 6/8) sandy clay loam that has 5 percent pockets of clay loam; moderate medium subangular blocky structure; friable; moderately sticky, slightly plastic; few fine and medium roots; few discontinuous distinct yellowish brown (10YR 5/4) clay films on faces of peds; common fine grains of feldspar; few fine flakes of mica; 10 percent quartz gravel; strongly acid; gradual wavy boundary.

BC—27 to 33 inches; reddish yellow (7.5YR 6/8) coarse sandy loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; common fine grains of feldspar; common fine flakes of mica; 10 percent quartz gravel; strongly acid; gradual wavy boundary.

C1—33 to 46 inches; brownish yellow (10YR 6/6) coarse sandy loam granite saprolite; common medium distinct reddish yellow (7.5YR 6/8) mottles; massive; friable; nonsticky, nonplastic; common fine grains of feldspar; common fine flakes of mica; 10 percent quartz gravel; strongly acid; gradual wavy boundary.

C2—46 to 79 inches; brownish yellow (10YR 6/6) coarse sandy loam granite saprolite; common fine distinct reddish yellow (7.5YR 6/8) and common coarse distinct very pale brown (10YR 7/3) mottles; massive; friable; nonsticky, nonplastic; common fine grains of feldspar; common fine flakes of mica; 10 percent quartz gravel; strongly acid.

Range in Characteristics

Thickness of loamy Bt horizon: 10 to 40 inches

Depth to bedrock: More than 60 inches

Content of mica flakes: Few or common throughout; many flakes in some C horizons below 40 inches

Content and size of rock fragments: 0 to 35 percent throughout; mostly gravel and cobbles

Reaction: Very strongly acid to slightly acid throughout, except where lime has been applied

A or Ap horizon:

Color—hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 6

Texture (fine-earth fraction)—dominantly coarse sandy loam; loamy coarse sand, loamy sand, sandy loam, fine sandy loam, or loam in some pedons; sandy clay loam or clay loam where eroded

E horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)— loamy coarse sand, loamy sand, loamy fine sand, coarse sandy loam, sandy loam, fine sandy loam, or loam

Bt horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—fine sandy loam, loam, sandy clay loam, or clay loam
Mottles (where present)—shades of brown, red, yellow, and gray (lithochromic)

BC horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—coarse sandy loam, sandy loam, fine sandy loam, loam, or sandy clay loam
Mottles—shades of brown, red, yellow, gray (lithochromic), and white

C/Bt horizon (where present):
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—C part is loamy sand, coarse sandy loam, sandy loam, fine sandy loam, or loam and Bt part is loam, sandy clay loam, or clay loam in relict rock fractures and old root channels
Mottles—shades of brown, red, yellow, gray (lithochromic), and white

C horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—loamy sand, coarse sandy loam, sandy loam, fine sandy loam, or loam
Mottles—shades of brown, red, yellow, gray (lithochromic), and white

Saluda Series

Depth class: Shallow
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Blue Ridge mountains
Landform: Mountains, escarpments, and spurs
Geomorphic component: Mountaintops and mountain flanks
Parent material: Residuum weathered from felsic and intermediate metamorphic rock
Slope: 45 to 90 percent
Taxonomic class: Loamy, mixed, active, mesic, shallow Typic Hapludults

Typical Pedon

Saluda gravelly loam, in an area of Cowee-Saluda-Evard complex, 45 to 90 percent slopes, rocky; in Surry County; about 2.4 miles southwest of Low Gap, 0.7 mile west of intersection of Secondary Roads 1408 and 1409 on Secondary Road 1408, about 0.1 mile south of Secondary Road 1408 on gravel driveway, on wooded slope east of gravel drive; USGS Roaring Gap topographic quadrangle; lat. 36 degrees 29 minutes 42 seconds N. and long. 80 degrees 53 minutes 18 seconds W.

A—0 to 4 inches; brown (10YR 4/3) gravelly loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine and common medium and coarse roots; few fine tubular pores; common fine flakes of mica; 10 percent schist gravel and 5 percent quartz gravel; very strongly acid; clear wavy boundary.

BA—4 to 8 inches; dark yellowish brown (10YR 4/4) gravelly loam; weak fine subangular blocky structure; very friable; slightly sticky, slightly plastic; common fine, medium, and coarse roots; few fine tubular pores; common fine flakes of mica; 10 percent schist gravel and 5 percent quartz gravel; very strongly acid; clear wavy boundary.

Bt1—8 to 14 inches; strong brown (7.5YR 5/6) gravelly clay loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; common fine, medium, and coarse roots; few fine tubular pores; few discontinuous faint clay films on faces of peds; common fine flakes of mica; 10 percent schist gravel, 5 percent quartz gravel, and 5 percent fine schist paragravel; very strongly acid; gradual wavy boundary.

Bt2—14 to 18 inches; strong brown (7.5YR 5/6) gravelly sandy clay loam; many medium faint strong brown (7.5YR 5/8) mottles; weak medium angular blocky structure; friable; slightly sticky, slightly plastic; few fine, medium, and coarse roots; few fine tubular pores; few patchy faint clay films on vertical faces of peds; common fine flakes of mica; 15 percent schist gravel, 5 percent quartz gravel, and 15 percent schist paragravel; very strongly acid; abrupt wavy boundary.

Cr—18 to 79 inches; soft schist rock.

Range in Characteristics

Thickness of loamy Bt horizon: 8 to 16 inches

Depth to bedrock: 10 to 20 inches to soft bedrock and more than 40 inches to hard bedrock

Content of mica flakes: Few or common throughout

Content and size of rock fragments: 0 to 35 percent in the A horizon and 0 to 20 percent in the B horizon; ranging in size from gravel to boulders

Reaction: Very strongly acid to slightly acid throughout, except where lime has been applied

A horizon:

Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6

Texture (fine-earth fraction)—dominantly loam; sandy loam or fine sandy loam in some pedons

BA or BE horizon:

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

BC horizon (where present):

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Cr layer:

Type of bedrock—variegated, soft gneiss or schist

R layer (where present):

Type of bedrock—hard gneiss or schist

Sauratown Series

Depth class: Moderately deep

Agricultural drainage class: Well drained

Saturated hydraulic conductivity class: Moderately high

Landscape: Pilot Mountain
Landform: Mountains
Geomorphic component: Mountaintops and mountain flanks
Parent material: Residuum weathered from felsic metamorphic rock; mostly metaquartzite
Slope: 8 to 45 percent
Taxonomic class: Fine-loamy, mixed, subactive, mesic Typic Hapludults (fig. 27)

Typical Pedon

Sauratown very stony fine sandy loam, in an area of Cliffield-Sauratown complex, 25 to 45 percent slopes, rubbly; in Surry County; about 3.0 miles southwest of the town of Pilot Mountain, 0.5 mile northwest of Pilot Mountain State Park entrance at U.S. Highway 52 on the park road (Secondary Road 2053), 0.2 mile north on campsite road, 1,800 feet west of campground in woodland; USGS Pinnacle topographic quadrangle; lat. 36 degrees 20 minutes 57 seconds N. and long. 80 degrees 28 minutes 49 seconds W.

A—0 to 3 inches; very dark grayish brown (10YR 3/2) very stony fine sandy loam; moderate fine granular structure; very friable; nonsticky, nonplastic; many fine and medium and few coarse roots; few fine flakes of mica; 10 percent metaquartzite gravel, 10 percent metaquartzite cobbles, 25 percent metaquartzite stones, and 5 percent metaquartzite boulders; very strongly acid; clear smooth boundary.

E—3 to 9 inches; yellowish brown (10YR 5/4) very stony fine sandy loam; weak medium granular structure; very friable; nonsticky, nonplastic; common fine and medium and few coarse roots; common fine and medium tubular pores; few fine flakes of mica; 10 percent metaquartzite gravel, 10 percent metaquartzite cobbles, 20 percent metaquartzite stones, and 5 percent metaquartzite boulders; very strongly acid; clear wavy boundary.

BE—9 to 12 inches; yellowish brown (10YR 5/4) stony fine sandy loam; weak fine subangular blocky structure; friable; nonsticky, nonplastic; common fine and medium and few coarse roots; common fine and medium tubular pores; few fine flakes of mica; 5 percent metaquartzite gravel, 10 percent metaquartzite cobbles, and 15 percent metaquartzite stones; very strongly acid; clear wavy boundary.

Bt1—12 to 19 inches; dark yellowish brown (10YR 4/6) cobbly sandy clay loam; moderate medium subangular blocky structure; friable; moderately sticky, slightly plastic; common fine and few medium and coarse roots; common fine and few medium tubular pores; few patchy faint clay films on faces of peds; few fine flakes of mica; 5 percent metaquartzite gravel, 10 percent metaquartzite cobbles, and 5 percent metaquartzite stones; very strongly acid; gradual wavy boundary.

Bt2—19 to 26 inches; dark yellowish brown (10YR 4/6) cobbly sandy clay loam; moderate medium subangular blocky structure; friable; moderately sticky, slightly plastic; few fine and medium roots; few fine tubular pores; few patchy faint clay films on faces of peds; few fine flakes of mica; 5 percent metaquartzite gravel, 15 percent metaquartzite cobbles, and 5 percent metaquartzite stones; very strongly acid; abrupt smooth boundary.

Cr—26 to 29 inches; soft metaquartzite.

R—29 inches; hard metaquartzite.

Range in Characteristics

Thickness of loamy Bt horizon: 11 to 33 inches
Depth to bedrock: 20 to 40 inches to soft bedrock, where present, and 20 to 40 inches to hard bedrock
Content of mica flakes: None to common throughout

Content and size of rock fragments: 10 to 65 percent in the A and E horizons, 10 to 50 percent in the C horizon, and 5 to 35 percent in the BE, Bt, and BC horizons; mostly cobbles, gravel, and stones

Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

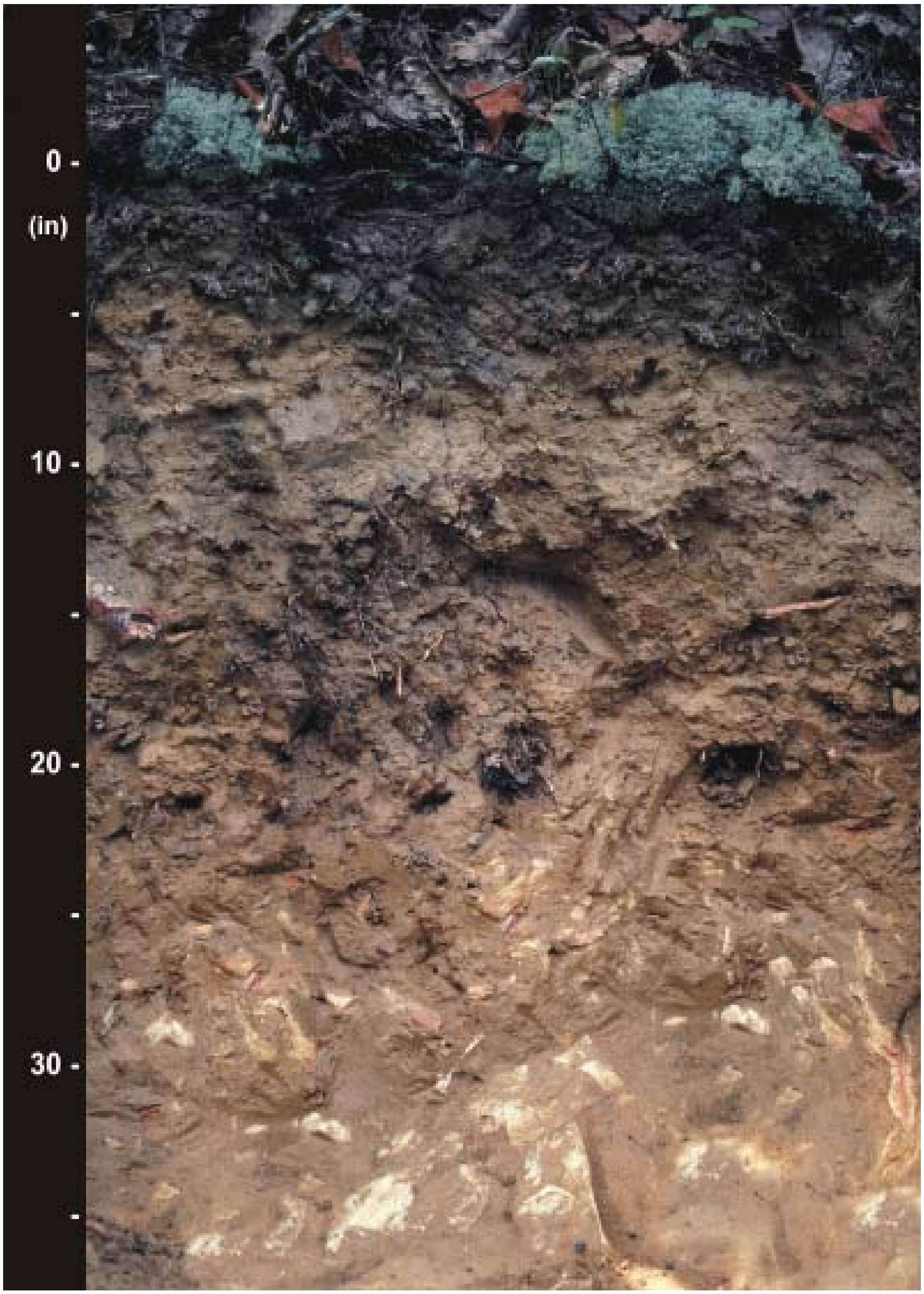

Figure 27.—A profile of Sauratown very stony fine sandy loam in an area of Cliffield-Sauratown complex, 25 to 45 percent slopes, rubbly.

A horizon:
Color—hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 6
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons

E horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 4 or 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BA or BE horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—fine sandy loam, loam, or sandy clay loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 4 to 8
Texture (fine-earth fraction)—fine sandy loam, loam, sandy clay loam, or clay loam

BC horizon (where present):
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8
Texture (fine-earth fraction)— fine sandy loam, loam, sandy clay loam, or clay loam

C horizon (where present):
Color—hue of 7.5YR or 10YR, value of 6 or 7, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Cr layer:
Type of bedrock—thin layer of gray, white, or pale brown, soft metaquartzite

R layer:
Type of bedrock—gray, white, or pale brown, hard metaquartzite

Siloam Series

Depth class: Shallow
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: Interfluves, low hills, and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from mafic metamorphic or igneous rock
Slope: 8 to 45 percent
Taxonomic class: Loamy, mixed, superactive, mesic, shallow Typic Hapludalfs

Typical Profile

Siloam fine sandy loam, in an area of Siloam-Redbrush complex, 6 to 15 percent slopes; in Surry County; about 1.3 miles north-northwest of Siloam, 0.8 mile southeast of the intersection of Secondary Roads 1003 and 2085 on Secondary Road 1003, about 0.6 mile east of Secondary Road 1003 in fescue hayland; USGS Siloam topographic quadrangle; lat. 36 degrees 18 minutes 10 seconds N. and long. 80 degrees 34 minutes 19 seconds W.

Ap—0 to 8 inches; dark yellowish brown (10YR 3/4) fine sandy loam; weak medium granular structure; friable; nonsticky, nonplastic; many fine roots; common fine tubular pores; common coarse distinct dark yellowish brown (10YR 4/4) bodies of B material; common fine flakes of mica; 10 percent quartz gravel; neutral; clear wavy boundary.

Bt—8 to 13 inches; dark yellowish brown (10YR 4/6) sandy clay loam; rock-controlled moderate coarse angular blocky structure; friable; moderately sticky, moderately plastic; common fine roots; few fine tubular pores; common discontinuous distinct yellowish brown (10YR 5/4) clay films on vertical faces of peds; common continuous distinct dark brown (10YR 3/3) fillings in old root channels and between peds; common fine distinct yellowish brown (10YR 5/8) masses of oxidized iron between peds; common fine flakes of mica; 5 percent quartz gravel and 5 percent gneiss gravel; neutral; clear irregular boundary.

Bt/C—13 to 15 inches; 80 percent dark yellowish brown (10YR 4/6) sandy clay loam (Bt part); 20 percent pockets of green, brown, gray, white, and black loamy saprolite (C part); rock-controlled moderate coarse angular blocky structure; friable; moderately sticky, moderately plastic; common fine roots; few fine tubular pores; common discontinuous distinct yellowish brown (10YR 5/4) clay films on vertical faces of peds; common continuous distinct dark brown (10YR 3/3) fillings in old root channels and between peds; common fine distinct yellowish brown (10YR 5/8) masses of oxidized iron between peds; common fine flakes of mica; 5 percent quartz gravel and 5 percent gneiss gravel; neutral; abrupt irregular boundary.

Cr—15 to 26 inches; soft mafic gneiss.

R—26 to 79 inches; hard mafic gneiss.

Range in Characteristics

Thickness of loamy Bt horizon: 5 to 15 inches

Depth to bedrock: 10 to 20 inches to soft bedrock and 20 to 40 inches to hard bedrock

Content of mica flakes: None to common throughout

Concretions of dark manganese: None to common throughout

Content and size of rock fragments: 0 to 35 percent throughout; mostly gravel, cobbles, and stones

Reaction: Strongly acid to slightly acid in the A, E, and upper B horizons, except where lime has been applied, and moderately acid to slightly alkaline in the lower B and C horizons

A horizon:

Color—hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 2 to 6

Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons; sandy clay loam or clay loam where eroded

E horizon (where present):

Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:

Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—loam, sandy clay loam, clay loam, or clay

Bt/C horizon:

Color—Bt part is hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8 and C part is mottles, bodies, or streaks of black, greenish, grayish, or whitish saprolite or primary minerals

Texture (fine-earth fraction)—Bt part is loam, sandy clay loam, clay loam, or clay and C part is sandy loam, fine sandy loam, or loam saprolite

C horizon (where present):

Color—variegated, in shades of black, green, brown, yellow, and gray

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam saprolite

C/Bt horizon (where present):

Color—C part is variegated in shades of black, green, brown, yellow, and gray and Bt part is hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—C part is sandy loam, fine sandy loam, or loam saprolite and Bt part is loam, sandy clay loam, clay loam, or clay that fills relict rock fractures and old root channels

Cr layer:

Type of bedrock—variegated, soft mafic to intermediate metamorphic and igneous rock

R layer:

Type of bedrock—hard mafic to intermediate metamorphic and igneous rock

Stott Knob Series

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: High hills and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic or igneous rock
Slope: 2 to 45 percent
Taxonomic class: Fine-loamy, parasesquic, mesic Typic Hapludults

Typical Pedon

Stott Knob fine sandy loam, in an area of Fairview-Stott Knob complex, 25 to 45 percent slopes; in Surry County; about 4.0 miles southeast of Dobson, 900 feet north of the intersection of Secondary Roads 2210 and 2200 on Secondary Road 2210 to New Hope Church, 1,200 feet northwest of church in woodland; USGS Copeland topographic quadrangle; lat. 36 degrees 21 minutes 51 seconds N. and long. 80 degrees 39 minutes 42 seconds W.

A—0 to 3 inches; dark yellowish brown (10YR 4/2) fine sandy loam; weak fine granular structure; friable; nonsticky, nonplastic; many fine and medium and few coarse roots; few fine tubular pores; few fine flakes of mica; 10 percent quartz gravel; very strongly acid; clear wavy boundary.

E—3 to 7 inches; brown (7.5YR 5/4) fine sandy loam; weak fine granular structure; friable; nonsticky, nonplastic; many fine and medium and common coarse roots; few fine tubular pores; few fine flakes of mica; 5 percent quartz gravel; strongly acid; gradual wavy boundary.

Bt—7 to 19 inches; yellowish red (5YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; common fine, medium, and coarse roots; common fine tubular pores; few patchy faint clay films on faces of peds; few fine flakes of mica; 5 percent quartz gravel; strongly acid; gradual wavy boundary.

BC—19 to 24 inches; reddish yellow (5YR 6/8) fine sandy loam; weak medium subangular blocky structure; friable; slightly sticky, nonplastic; few fine, medium, and coarse roots; few fine tubular pores; common fine flakes of mica; 10 percent fine quartz gravel; very strongly acid; gradual wavy boundary.

C—24 to 30 inches; strong brown (7.5YR 5/6) fine sandy loam saprolite; massive; friable; nonsticky, nonplastic; few fine and medium roots; common fine flakes of mica; 5 percent quartz gravel and 5 percent fine gneiss gravel; very strongly acid; abrupt wavy boundary.

Cr—30 to 47 inches; soft gneiss.

R—47 to 79 inches; hard gneiss.

Range in Characteristics

Thickness of loamy Bt horizon: 10 to 28 inches
Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock
Content of mica flakes: Few or common throughout
Content and size of rock fragments: 0 to 35 percent throughout; mostly gravel and cobbles
Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A horizon:
Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 8
Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons; sandy clay loam or clay loam where eroded

E horizon:
Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BA or BE horizon (where present):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

Bt horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

BC horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or sandy clay loam

C horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam saprolite

Cr layer:
Type of bedrock—soft felsic to intermediate gneiss, schist, or phyllite

R layer:
Type of bedrock—hard gneiss, schist, or phyllite

Suches Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont and Blue Ridge foothill valleys
Landform: Flood plains
Geomorphic component: Talfs and dips
Parent material: Recent alluvium
Slope: 0 to 3 percent
Taxonomic class: Fine-loamy, mixed, semiactive, mesic Fluventic Dystrudepts (fig. 28)

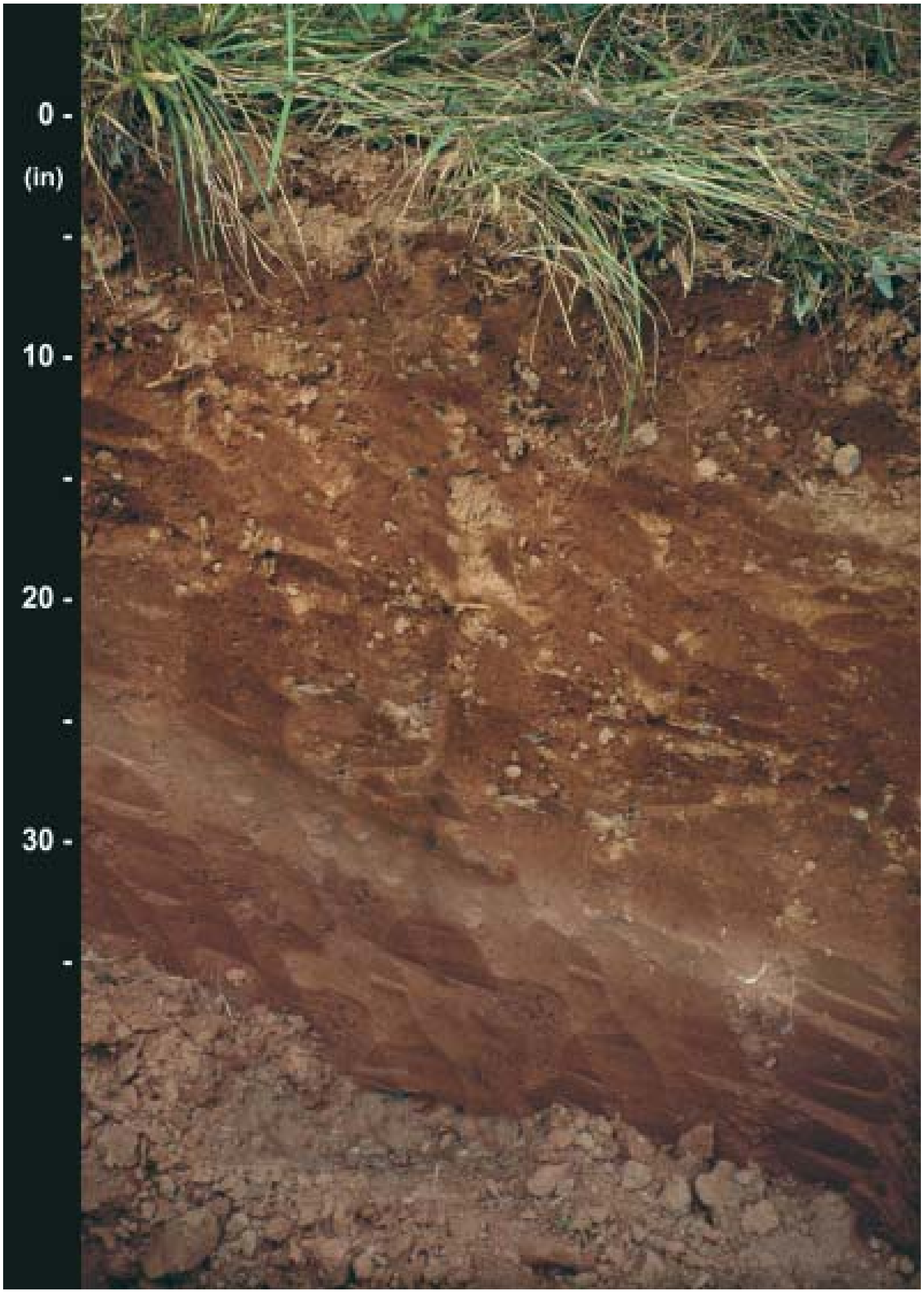

Figure 28.—A profile of Suches loam in an area of Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded.

Typical Pedon

Suches loam, in an area of Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded; in Surry County; about 9.5 miles south of Dobson on U.S. Highway 601, about 0.7 mile east of the intersection of U.S. 601 and railroad tracks at

Crutchfield on private farm road, 160 feet south of railroad tracks and 270 feet north of Yadkin River in field; USGS Copeland topographic quadrangle; lat. 36 degrees 16 minutes 4 seconds N. and long. 80 degrees 42 minutes 44 seconds W.

Ap1—0 to 8 inches; brown (10YR 4/3) loam; weak medium granular structure; very friable; nonsticky, nonplastic; many fine and few medium and coarse roots; few fine tubular pores; common fine flakes of mica; moderately acid; clear smooth boundary.

Ap2—8 to 12 inches; brown (10YR 4/3) loam that has common medium prominent strong brown (7.5YR 5/6) pockets of clay loam; weak medium subangular blocky structure parts to weak medium granular; very friable; nonsticky, nonplastic; common fine roots; few fine tubular pores; common fine flakes of mica; moderately acid; clear wavy boundary.

Bw1—12 to 33 inches; strong brown (7.5YR 4/6) clay loam; many coarse faint strong brown (7.5YR 5/6) mottles in the matrix; weak medium subangular blocky structure; friable; slightly sticky, moderately plastic; few fine roots; common fine tubular pores; many coarse prominent brown (10YR 4/3) fillings of surface material in old root channels, worm holes, and between peds; common fine flakes of mica; moderately acid; gradual wavy boundary.

Bw2—33 to 41 inches; variegated brown (7.5YR 4/4) and strong brown (7.5YR 5/6) loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few fine roots; common fine tubular pores; few medium distinct grayish brown (10YR 5/2) iron depletions in old root channels; many coarse prominent brown (10YR 4/3) fillings of surface material between peds; common fine flakes of mica; moderately acid; gradual wavy boundary.

Bw3—41 to 54 inches; dark yellowish brown (10YR 4/6) loam; weak medium subangular blocky structure; friable; nonsticky, nonplastic; few fine roots; many medium faint dark yellowish brown (10YR 4/4) masses of oxidized iron; common fine flakes of mica; moderately acid; gradual wavy boundary.

C—54 to 79 inches; dark yellowish brown (10YR 4/4) loam; massive; friable; nonsticky, nonplastic; common medium faint dark yellowish brown (10YR 4/6) and few medium distinct yellowish brown (10YR 5/4) pockets of iron depletions and few medium prominent yellowish red (5YR 5/8) masses of oxidized iron; common fine flakes of mica; moderately acid.

Range in Characteristics

Thickness of loamy Bw horizon: 34 to 54 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: Few to many throughout
Content and size of rock fragments: 0 to 15 percent in the A and B horizons and 0 to 35 percent in the C and Cg horizons; mostly gravel
Reaction: Very strongly acid or moderately acid throughout, except where lime has been applied

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 2 to 4
Texture (fine-earth fraction)—dominantly loam; fine sandy loam in some pedons

Bw horizon (upper part):
Color—hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, clay loam, or silty clay loam
Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown and yellow below a depth of 24 inches

Bw horizon (lower part):
Color—hue of 7.5YR or 10YR, value of 3 to 7, and chroma of 3 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam
Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow

BC horizon (where present):
Color—hue of 7.5YR or 10YR, value of 3 to 7, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam
Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow

Bg horizon (where present):
Color—iron depleted matrix in hue of 7.5YR or 10YR, value of 3 to 7, and chroma of 1 or 2
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, red, and yellow

C horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 7, and chroma of 3 to 8
Texture (fine-earth fraction)—loamy sand, sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam
Redoximorphic features—iron depletions in shades of gray and masses of oxidized iron in shades of brown, red, and yellow

Cg horizon (where present):
Color—iron depleted matrix in hue of 7.5YR or 10YR, value of 4 to 7, and chroma of 1 or 2; or neutral in hue and has value of 4 to 7
Texture (fine-earth fraction)—loamy sand, sandy loam, fine sandy loam, loam, silt loam, sandy clay loam, or clay loam
Redoximorphic features—masses of oxidized iron in shades of brown, red, and yellow

Tate Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Blue Ridge mountains and foothills and Pilot Mountain
Landform: Mountains, fans, and stream terraces
Geomorphic component: Mountain bases, base slopes, treads, and risers
Parent material: Colluvium and alluvium derived mainly from felsic and intermediate metamorphic rock
Slope: 2 to 25 percent
Taxonomic class: Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Tate fine sandy loam, in an area of Tate-Colvard complex, 0 to 15 percent slopes, frequently flooded; in Surry County; about 3.0 miles south of Low Gap, 0.3 mile west of intersection of Secondary roads 1421 and 1338 on Secondary Road 1421, in Ravens Knob Scout Camp, 2.0 miles northwest of gate on camp road (Valley Road), 10 feet southwest of road in mixed pine and hardwood forest; USGS Bottom topographic quadrangle; lat. 36 degrees 29 minutes 2 seconds N. and long. 80 degrees 52 minutes 6 seconds W.

A—0 to 5 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak fine granular structure; very friable; nonsticky, nonplastic; many fine and common medium and coarse roots; 13 percent quartz gravel; very strongly acid; clear wavy boundary.

BA—5 to 8 inches; yellowish brown (10YR 5/4) sandy clay loam; weak fine subangular blocky structure; friable; slightly sticky, slightly plastic; common fine, medium, and coarse roots; few fine tubular pores; few fine flakes of mica; 11 percent quartz gravel; strongly acid; clear wavy boundary.

Bt1—8 to 14 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; moderately sticky, slightly plastic; common coarse and medium and few fine roots; few fine tubular pores; common continuous distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine flakes of mica; 4 percent quartz gravel; moderately acid; gradual wavy boundary.

Bt2—14 to 33 inches; brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; moderately sticky, slightly plastic; common medium and coarse and few fine roots; few fine tubular pores; few discontinuous faint clay films on faces of peds; few fine flakes of mica; 9 percent quartz gravel; moderately acid; gradual wavy boundary.

Bt3—33 to 41 inches; light yellowish brown (2.5Y 6/4) sandy clay loam; weak medium subangular blocky structure; friable; moderately sticky, slightly plastic; common medium and coarse and few fine roots; few fine tubular pores; few patchy faint clay films on faces of peds; common medium distinct brownish yellow (10YR 6/6) masses of oxidized iron; few fine flakes of mica; 9 percent quartz gravel; strongly acid; gradual wavy boundary.

BC—41 to 47 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak fine subangular blocky structure; friable; nonsticky, nonplastic; few fine roots; few medium distinct light yellowish brown (2.5Y 6/3) iron depletions; common medium distinct brownish yellow (10YR 6/6) masses of oxidized iron; few fine flakes of mica; 11 percent quartz gravel; strongly acid; gradual wavy boundary.

C1—47 to 52 inches; brownish yellow (10YR 6/6) very gravelly sandy loam; massive; very friable; nonsticky, nonplastic; few fine roots; few fine flakes of mica; 45 percent quartz gravel and 10 percent quartz cobbles; strongly acid; clear wavy boundary.

C2—52 to 79 inches; mottled pale brown (10YR 6/3), brownish yellow (10YR 6/6), and very pale brown (10YR 8/3) gravelly loamy fine sand; massive; loose; nonsticky, nonplastic; common fine flakes of mica; 30 percent quartz gravel; strongly acid.

Range in Characteristics

Thickness of loamy Bt horizon: 15 to 40 inches

Depth to bedrock: More than 60 inches

Content of mica flakes: None to common throughout

Content and size of rock fragments: 0 to 50 percent in the A horizon, 0 to 35 percent in the Bt horizon, and 5 to 60 percent in the BC and C horizons; mostly gravel and cobbles

Reaction: Very strongly acid to slightly acid throughout, except where lime has been applied

A horizon:

Color—hue of 10YR, value of 3 to 6, and chroma of 2 to 4

Texture (fine-earth fraction)—dominantly fine sandy loam; sandy loam or loam in some pedons

E horizon (where present):

Color—hue of 10YR, value of 4 to 6, and chroma of 3 to 6

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BA or BE horizon:
Color—hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or sandy clay loam

Bt horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam
Redoximorphic features (where present)—iron depletions in shades of gray at a depth of 24 inches or more below the top of the argillic horizon and masses of oxidized iron in shades of brown, red, and yellow

BC horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
Redoximorphic features (where present)—iron depletions in shades of gray at a depth of 24 inches or more below the top of the argillic horizon and masses of oxidized iron in shades of brown, red, and yellow

C horizon:
Color—variable
Texture (fine-earth fraction)—sandy or loamy; sandy textures below a depth of 40 inches

Note: Tate soils in map unit TaD have a slightly higher content of coarse fragments in the surface layer than the series allows.

Toast Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: Interfluves, hills, and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from granite and granite gneiss
Slope: 2 to 15 percent
Taxonomic class: Fine, kaolinitic, mesic Typic Kanhapludults (fig. 29)

Typical Pedon

Toast coarse sandy loam, 2 to 8 percent slopes, rocky; in Surry County; about 4.0 miles southwest of Mount Airy, 1.0 mile west of the intersection of Interstate 74 and U.S. Highway 601 on Interstate 74, about 40 feet south in the grassland right-of-way; USGS Dobson topographic quadrangle; lat. 36 degrees 27 minutes 37 seconds N. and long. 80 degrees 39 minutes 30 seconds W.

Ap—0 to 8 inches; brown (10YR 5/3) coarse sandy loam that has few fine prominent strong brown (7.5YR 5/6) bodies of B material; weak coarse granular structure; very friable; nonsticky, nonplastic; many fine roots; common fine tubular pores; common fine flakes of mica; 5 percent quartz gravel; very strongly acid; abrupt wavy boundary.

Bt1—8 to 14 inches; 70 percent yellowish brown (10YR 5/6), 15 percent strong brown (7.5YR 5/6), and 15 percent red (2.5YR 5/8) clay; strong coarse angular blocky structure parting to moderate medium angular blocky; friable; slightly sticky,

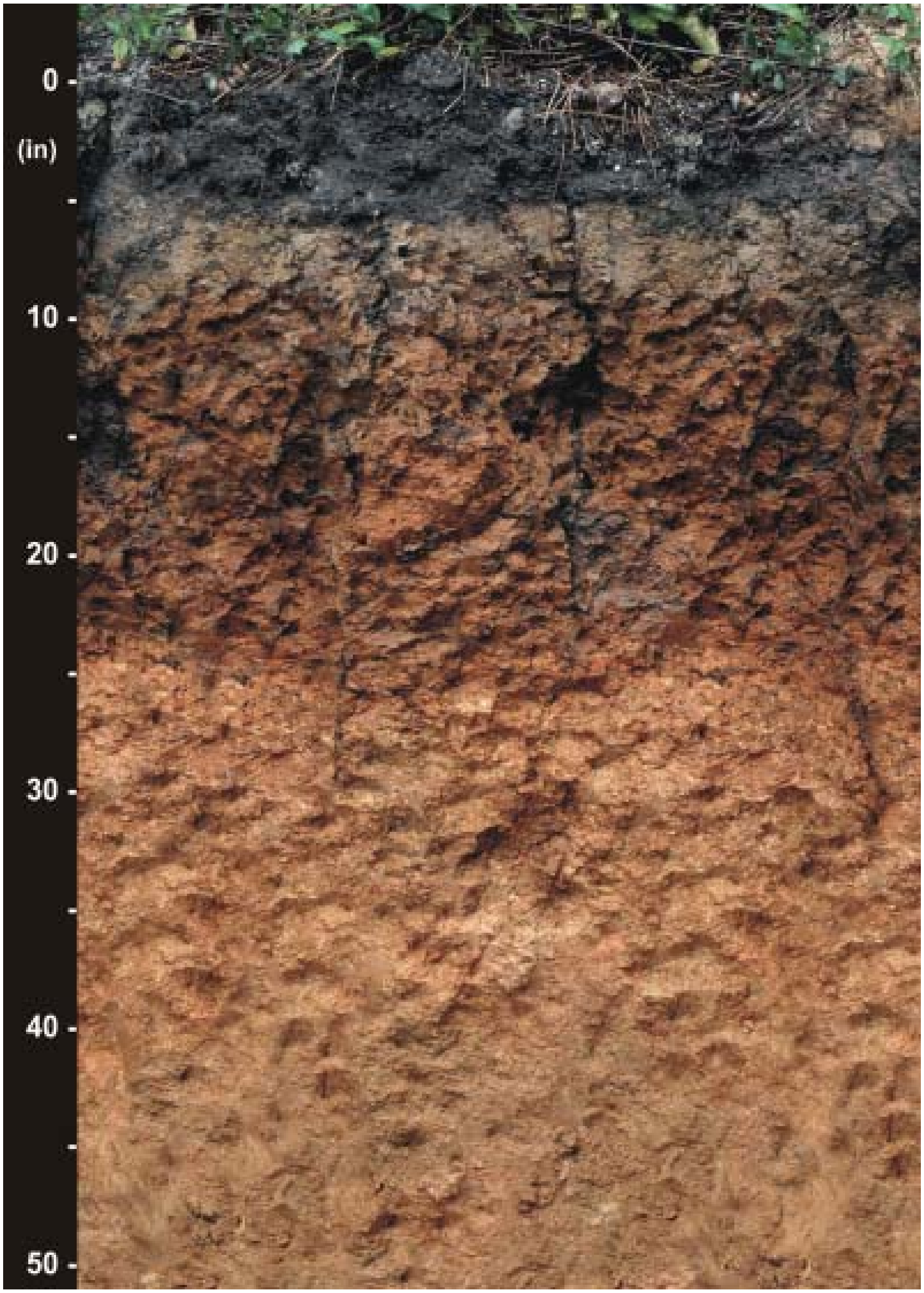

Figure 29.—A profile of Toast coarse sandy loam in an area of Toast-Bannertown complex, 8 to 15 percent slopes, very rocky.

moderately plastic; many fine roots; common fine tubular pores; common discontinuous distinct yellowish brown (10YR 5/4) clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel; strongly acid; gradual wavy boundary.

Bt2—14 to 23 inches; 70 percent yellowish brown (10YR 5/6), 15 percent strong brown (7.5YR 5/6), and 15 percent red (2.5YR 4/8) clay; strong coarse angular blocky structure parting to moderate medium platy; friable; slightly sticky, moderately plastic; many fine roots; common fine tubular pores; common discontinuous distinct yellowish brown (10YR 5/4) clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel; strongly acid; gradual wavy boundary.

BC—23 to 29 inches; 50 percent yellowish brown (10YR 5/6), 25 percent brownish yellow (10YR 6/6), and 25 percent light red (2.5YR 6/8) sandy clay that has pockets of sandy clay loam; moderate medium platy rock-controlled structure along rock spalls; friable; slightly sticky, slightly plastic; few fine roots; few fine tubular pores; common discontinuous distinct yellowish brown (10YR 5/4) clay films on horizontal faces of peds; common medium and many fine flakes of mica; 5 percent quartz gravel; strongly acid; gradual wavy boundary.

C—29 to 79 inches; variegated, in shades of brown, red, yellow, and gray granitic saprolite that is coarse sandy loam and has pockets of sandy clay loam; massive; friable; nonsticky, nonplastic; many fine and medium flakes of mica; 5 percent quartz gravel; strongly acid.

Range in Characteristics

Thickness of clayey Bt horizon: 10 to 24 inches
Depth to bedrock: More than 60 inches
Content of mica flakes: None to common in the A and upper B horizons and few to many in the lower B and C horizons
Content and size of rock fragments: 0 to 30 percent throughout; mostly gravel
Reaction: Extremely acid to strongly acid throughout, except where lime has been applied

A or Ap horizon:
Color—hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 8
Texture (fine-earth fraction)—dominantly coarse sandy loam; sandy loam or loam in some pedons; sandy clay loam or clay loam where eroded

E horizon (where present):
Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8
Texture (fine-earth fraction)—coarse sandy loam, sandy loam, or loam

BE or BA horizon (where present):
Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 3 to 8
Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 4 to 8; hue of 2.5YR or 5YR in some pedons
Texture (fine-earth fraction)—sandy clay loam, clay loam, sandy clay, or clay
Mottles—shades of brown, yellow, and red in most pedons (nonredoximorphic)

BC horizon:
Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 4 to 8; hue of 2.5YR in some pedons
Texture (fine-earth fraction)—loam, sandy clay loam, clay loam, or sandy clay
Mottles—shades of brown, yellow, and red in most pedons (nonredoximorphic)

C/Bt horizon (where present):
Color—hue of 5YR to 10YR, value of 5 to 6, and chroma of 4 to 8; or variegated
Texture (fine-earth fraction)—C part is coarse sandy loam, sandy loam, or sandy clay loam and Bt part is clay loam, sandy clay, or clay in relict rock fractures (Bt part)

C horizon:
Color—variegated
Texture (fine-earth fraction)—loamy coarse sand, loamy sand, coarse sandy loam, sandy loam, loam, or sandy clay loam

Tuckasegee Series

Depth class: Very deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: High
Landscape: Blue Ridge mountains
Landform: Mountains and fans
Geomorphic component: Mountain flanks and mountain bases
Parent material: Colluvium derived from felsic to intermediate metamorphic or igneous rock
Slope: 45 to 90 percent
Taxonomic class: Fine-loamy, isotic, mesic Humic Dystrudepts

Typical Pedon

Tuckasegee gravelly loam, in an area of Chestnut-Peaks-Tuckasegee complex, 45 to 90 percent slopes, very rocky; in Surry County; about 4.0 miles southwest of Low Gap, 0.6 mile south of intersection of Alleghany County Secondary Roads 1462 and 1461 on Secondary Road 1462 into Surry County, south 1.3 miles on woods road, 0.8 mile east on adjoining woods road, 500 feet east of road in hardwood forest; USGS Roaring Gap topographic quadrangle; lat. 36 degrees 29 minutes 15 seconds N. and long. 80 degrees 54 minutes 50 seconds W.

A1—0 to 8 inches; very dark brown (10YR 2/2) gravelly loam, brown (10YR 4/3) when dry; weak medium granular structure; friable; nonsticky, nonplastic; many fine, medium, and coarse roots; few fine tubular pores; few fine flakes of mica; 10 percent gneiss gravel, 5 percent quartz gravel, and 1 percent gneiss stones; moderately acid; clear wavy boundary.
A2—8 to 13 inches; very dark grayish brown (10YR 3/2) gravelly loam, dark yellowish brown (10YR 4/4) when dry; weak medium granular structure; friable; nonsticky, nonplastic; common fine, medium, and coarse roots; few fine tubular pores; few fine flakes of mica; 10 percent gneiss gravel and 5 percent quartz gravel; moderately acid; gradual wavy boundary.
Bw1—13 to 28 inches; brown (7.5YR 4/4) gravelly loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few medium and coarse roots; few fine tubular pores; common fine flakes of mica; 10 percent gneiss gravel and 5 percent quartz gravel; moderately acid; gradual wavy boundary.
Bw2—28 to 47 inches; strong brown (7.5YR 4/6) gravelly loam; weak medium subangular blocky structure; friable; slightly sticky, slightly plastic; few medium and coarse roots; few fine tubular pores; common fine flakes of mica; 15 percent gneiss gravel and 5 percent quartz gravel; strongly acid; gradual wavy boundary.
BC—47 to 79 inches; strong brown (7.5YR 5/6) very gravelly loam; weak fine subangular blocky structure; friable; slightly sticky, slightly plastic; few medium and coarse roots; common fine flakes of mica; 20 percent gneiss gravel, 5 percent quartz gravel, 5 percent schist channers, and 5 percent gneiss cobbles; strongly acid.

Range in Characteristics

Thickness of loamy Bw horizon: 30 to 51 inches
Depth to bedrock: More than 72 inches

Content of mica flakes: Few or common throughout
Content and size of rock fragments: 0 to 35 percent in the upper 40 inches and 0 to 60 percent below 40 inches; ranging in size from gravel to stones
Reaction: Very strongly acid to slightly acid in the A horizon and very strongly acid or moderately acid in the B and C horizons, except where lime has been applied

A or Ap horizon:
Color—hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 to 3
Texture (fine-earth fraction)—dominantly loam; sandy loam or fine sandy loam in some pedons

Bw horizon:
Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or sandy clay loam

BC horizon:
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, or sandy clay loam

C horizon (where present):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8
Texture (fine-earth fraction)—loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam

Westfield Series

Depth class: Deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: Interfluves, hills, and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic rock; commonly mica schist
Slope: 2 to 45 percent
Taxonomic class: Fine, kaolinitic, mesic Typic Kanhapludults

Typical Pedon

Westfield gravelly sandy clay loam, in an area of Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, moderately eroded; in Surry County; about 4.5 miles northeast of Elkin, 1.0 mile northeast of the intersection of Secondary Roads 1302 and 1133 on Secondary Road 1302, about 600 feet east of Secondary Road 1302 in cultivated field; USGS Elkin North topographic quadrangle; lat. 36 degrees 19 minutes 25 seconds N. and long. 80 degrees 50 minutes 34 seconds W.

Ap—0 to 9 inches; yellowish red (5YR 5/6) gravelly sandy clay loam; weak medium granular structure; friable; slightly sticky, slightly plastic; many fine roots; common fine tubular pores; few fine flakes of mica; 10 percent quartz gravel and 5 percent schist gravel; moderately acid; clear wavy boundary.
BA—9 to 13 inches; yellowish red (5YR 5/6) clay loam; weak fine and medium subangular blocky structure; friable; slightly sticky, slightly plastic; few fine roots; common fine tubular pores; few fine flakes of mica; 5 percent quartz gravel and 5 percent schist gravel; moderately acid; clear wavy boundary.

Bt—13 to 28 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm; slightly sticky, moderately plastic; few fine roots; common fine tubular pores; few discontinuous faint clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel and 5 percent schist gravel; strongly acid; gradual wavy boundary.

BC—28 to 35 inches; red (2.5YR 4/8) gravelly sandy clay loam that has pockets of clay loam; weak medium angular blocky structure; friable; slightly sticky, slightly plastic; few fine tubular pores; common fine flakes of mica; 5 percent quartz gravel, 5 percent schist gravel, and 10 percent olive and brown schist paragravel; strongly acid; gradual wavy boundary.

C—35 to 48 inches; yellow, brown, and red gravelly loam saprolite; massive; friable; nonsticky, nonplastic; common fine flakes of mica; 5 percent quartz gravel, 15 percent schist gravel, and 10 percent olive and brown schist paragravel; strongly acid; abrupt wavy boundary.

Cr—48 to 79 inches; soft mica schist.

Range in Characteristics

Thickness of clayey Bt horizon: 10 to 40 inches

Depth to bedrock: 40 to 60 inches to soft bedrock

Content of mica flakes: None to common in the A and upper part of the B horizons and few to many in the lower part of the B and the C horizons

Content and size of rock fragments: 0 to 45 percent in the A and E horizons, 0 to 35 percent in the B horizon, and 0 to 90 percent in the C horizon; mostly gravel, cobbles, and stones but some channers and flagstones

Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A or Ap horizon:

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 to 8; hue of 2.5YR, where eroded, in some pedons

Texture (fine-earth fraction)—dominantly sandy clay loam; sandy loam, fine sandy loam, loam, or clay loam in some pedons

E horizon (where present):

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BE or BA horizon:

Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

Bt horizon:

Color—hue of 10R to 5YR, value of 4 or 5, and chroma of 4 to 8

Texture (fine-earth fraction)—clay loam, sandy clay, or clay

Mottles (where present)—shades of yellow, red, and brown (lithochromic); more common in the lower Bt horizon

BC or CB horizon:

Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, sandy clay loam, or clay loam

Mottles (where present)—shades of yellow, brown, and red (lithochromic); few or common

C horizon:

Color—hue of 10R to 10YR, value of 4 to 6, and chroma of 4 to 8; or variegated

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam saprolite

Cr layer:

Type of bedrock—soft felsic to intermediate gneiss, schist, or phyllite

Woolwine Series

Depth class: Moderately deep
Agricultural drainage class: Well drained
Saturated hydraulic conductivity class: Moderately high
Landscape: Piedmont uplands
Landform: Interfluves, hills, and ridges
Geomorphic component: Crests, side slopes, nose slopes, and head slopes
Parent material: Residuum weathered from felsic and intermediate metamorphic rock; commonly mica schist
Slope: 2 to 45 percent
Taxonomic class: Fine, kaolinitic, mesic Typic Kanhapludults (fig. 30)

Typical Pedon

Woolwine gravelly loam, in an area of Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, moderately eroded; in Surry County; about 8.5 miles northwest of Dobson, 0.5 mile east of intersection of Secondary Roads 1331 and 1330 on Secondary Road 1331, about 630 feet north on woods trail, 120 feet east of trail in woods; USGS Bottom topographic quadrangle; lat. 36 degrees 26 minutes 19 seconds N. and long. 80 degrees 51 minutes 57 seconds W.

A—0 to 4 inches; strong brown (7.5YR 4/6) gravelly loam; weak medium granular structure; very friable; nonsticky, nonplastic; many fine, medium, and coarse roots; common fine tubular pores; common medium prominent brown (7.5YR 4/2) fillings in old root channels and in macropores; few fine flakes of mica; 10 percent quartz gravel and 5 percent schist gravel; very strongly acid; gradual wavy boundary.

Bt1—4 to 8 inches; yellowish red (5YR 5/6) clay loam; weak fine subangular blocky structure; friable; slightly sticky, slightly plastic; many fine, medium, and coarse roots; common fine tubular pores; few patchy faint clay films on faces of peds; few fine flakes of mica; 5 percent quartz gravel and 5 percent schist gravel; very strongly acid; clear wavy boundary.

Bt2—8 to 17 inches; red (2.5YR 5/6) clay; moderate medium subangular blocky structure; friable; moderately sticky, moderately plastic; common fine, medium, and coarse roots; few fine tubular pores; common discontinuous faint clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel and 5 percent schist gravel; very strongly acid; gradual wavy boundary.

Bt3—17 to 22 inches; red (2.5YR 4/8) gravelly clay; moderate medium subangular blocky structure; friable; moderately sticky, moderately plastic; few discontinuous faint clay films on faces of peds; common fine and medium and few coarse roots; few fine tubular pores; common fine flakes of mica; 5 percent quartz gravel, 10 percent schist gravel, and 5 percent schist paragravel; very strongly acid; gradual wavy boundary.

Bt4—22 to 30 inches; red (2.5YR 4/6) gravelly clay; weak medium angular blocky and platy rock-controlled structure; friable; slightly sticky, slightly plastic; few fine and medium roots; few patchy faint clay films on faces of peds; common fine flakes of mica; 5 percent quartz gravel, 10 percent schist gravel, 5 percent schist channers, and 10 percent schist paragravel; very strongly acid; abrupt irregular boundary.

Cr—30 to more than 79 inches; soft mica schist.

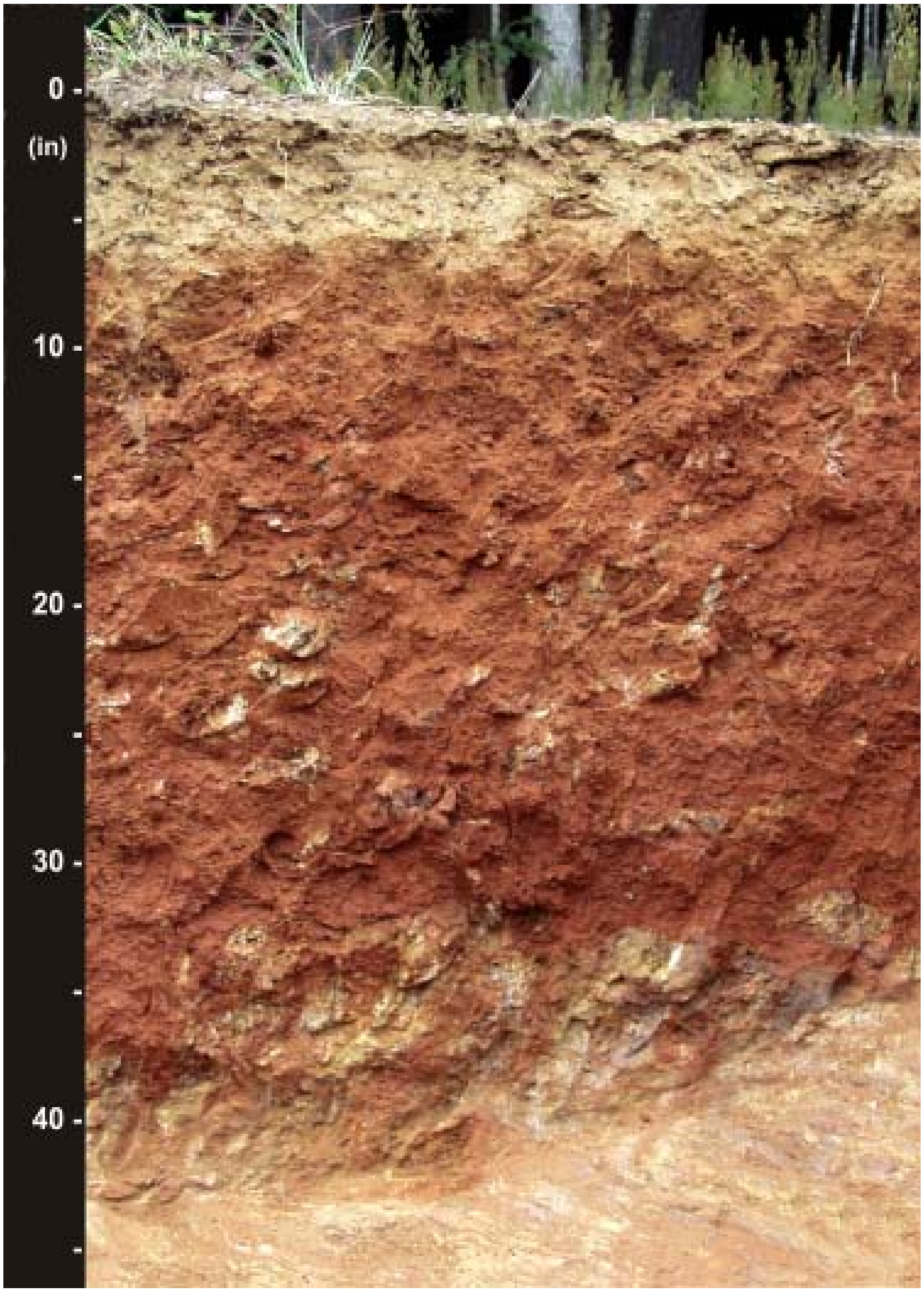

Figure 30.—A profile of Woolwine gravelly loam in an area of Woolwine-Fairview-Westfield complex, 2 to 8 percent slopes, moderately eroded.

Range in Characteristics

Thickness of clayey Bt horizon: 6 to 30 inches

Depth to bedrock: 20 to 40 inches to soft bedrock and more than 40 inches to hard bedrock

Content of mica flakes: None to common in the A and upper B horizons and few to many in the lower B and C horizons

Content and size of rock fragments: 5 to 45 percent in the A and E horizons, 0 to 35 percent in the B horizon, and 5 to 65 percent in the C horizon; mostly gravel, cobbles, and stones but some channers and flagstones

Reaction: Extremely acid to moderately acid throughout, except where lime has been applied

A horizon:

Color—hue of 5YR to 10YR, value of 3 to 6, and chroma of 2 to 8

Texture (fine-earth fraction)—dominantly loam; sandy loam or fine sandy loam in some peons; sandy clay loam or clay loam where eroded

E horizon (where present):

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8

Texture (fine-earth fraction)—sandy loam, fine sandy loam, or loam

BA or BE horizon (where present):

Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8

Texture (fine-earth fraction)—loam, sandy clay loam, or clay loam

Bt horizon:

Color—hue of 10R to 5YR, value of 4 or 5, and chroma of 4 to 8

Texture (fine-earth fraction)—clay loam, sandy clay, or clay

Mottles (where present)—shades of yellow, brown, and red (lithochromic); more common in the lower Bt horizon

BC horizon (where present):

Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8; or variegated in these colors without a dominant matrix color

Texture (fine-earth fraction)—fine sandy loam, loam, sandy clay loam, or clay loam

Mottles (where present)—shades of yellow, brown, and red (lithochromic); few or common

C horizon (where present):

Color—hue of 2.5YR to 7.5YR, value of 4 to 7, and chroma of 4 to 8; or variegated in these colors without a dominant matrix color

Texture (fine-earth fraction)—sandy loam, fine sandy loam, loam, silt loam, or sandy clay loam saprolite

Cr layer:

Type of bedrock—soft felsic gneiss, schist, or phyllite

Formation of the Soils

This section describes the factors of soil formation and relates them to the soils in the survey area.

Factors of Soil Formation

Soils are formed by processes of the environment acting upon geologic materials, such as metamorphic, igneous, and sedimentary rocks, and fluvial stream sediments. The characteristics of a soil are determined by the combined influence of parent material, climate, plant and animal life, relief, and time. These five factors are responsible for the profile development and chemical properties that differentiate soils (Buol and others, 1980).

Parent Material

Parent material is the unconsolidated mass in which a soil forms. In Surry County, parent material is a major factor in determining what kind of soil forms and can be correlated to some degree to geologic formations. The general soil map can be used as an approximate guide to the geology of the county.

Parent material is largely responsible for the chemical and mineralogical composition of soils and for the major differences among the soils of the county. Major differences in parent material, such as differences in texture, can be observed in the field. Less distinct differences, such as differences in mineralogical composition, can be determined only by careful laboratory analysis.

Climate

Climate, particularly precipitation and temperature, affects the physical, chemical, and biological relationships in the soil. It influences the rate at which rocks weather and organic matter decomposes. The amount of leaching in a soil is related to the amount of rainfall and the movement of water through the soil. The effects of climate also control the kinds of plants and animals living in and on the soil. Temperature influences the kind and growth of organisms and the speed of chemical and physical reactions in the soil.

Surry County has a warm, humid climate. Most of the county is in the Piedmont Physiographic Province and occupies a moderate plateau that ranges in elevation from about 700 to 1,400 feet. The northwestern part of the county is in the Blue Ridge Physiographic Province. This area includes the Blue Ridge foothills, escarpment, and mountains. The elevation in this area ranges from about 1,400 to 3,100 feet. The climate favors rapid chemical processes, which result in the decomposition of organic matter and the weathering of rocks. The effects of climate are reflected in the soils of the county. Mild temperatures throughout the year and abundant rainfall have resulted in the depletion of organic matter and considerable leaching of soluble bases. Because variations in the climate of the county are small, climate has probably not caused major local differences among soils. Climate has mainly affected the formation of soils in Surry County by altering the parent material through changes in temperature and in the amount of precipitation and through influences by plant and animal life.

Plant and Animal Life

Plants and animals influence the formation and differentiation of soil horizons. The type and number of organisms in and on the soil are determined in part by climate; in part by the nature of the soil material, relief, and the age of the soil; and in part by current and past agricultural practices. Bacteria, fungi, and other micro-organisms aid in the weathering of rocks and in the decomposition of organic matter. The plants and animals that live on a soil are the primary source of organic material.

Plants largely determine the kinds and amounts of organic matter that are added to a soil under normal conditions and the way in which the organic matter is added. They also are important for the changes of base status and for the leaching process of a soil.

Animals convert complex compounds into simpler forms, add organic matter to the soil, and modify certain chemical and physical properties of soil. In Surry County, most of the organic material accumulates on the surface. It is acted upon by micro-organisms, fungi, earthworms, and other forms of life and by direct chemical reaction. It is mixed with the uppermost mineral part of the soil by the activities of earthworms and other small invertebrates.

Under the native forest of this county, not enough bases are brought to the surface by plants to counteract the effects of leaching. Generally, the soils of the county developed under a hardwood forest. Trees took up elements from the subsoil and added organic matter to the soil by depositing leaves, roots, twigs, and other plant remains on the surface. The material deposited on the surface was acted upon by organisms and underwent chemical reaction.

Organic material decomposes rapidly in the county because of the moderate temperature, the abundant moisture supply, and the character of the organic material. It decays so rapidly that little of it accumulates in the soil.

Relief

Relief causes differences in free drainage, surface runoff, soil temperature, and the extent of geologic erosion. Relief in Surry County is largely determined by the kind of underlying bedrock, the geology of the area, and the extent to which the landscape is dissected by streams.

Relief affects the percolation of water through the profile. Water movement through the profile is important in soil development because it aids chemical reactions and is necessary for leaching.

Slopes in the county range from 0 to 95 percent. The upland soils that have slopes of less than 8 percent generally have deeper, better defined profiles than the steeper soils. Examples are the well developed Clifford, Fairview, and Toast soils. Relief affects the depth of soils. On some soils that have slopes of more than 15 percent, geologic erosion removes soil material almost as fast as it forms. As a result, most of the strongly sloping to very steep soils have a thin solum. Examples are Chestnut and Devotion soils. These soils are not so deep to saprolite nor so well developed as the less sloping soils.

Relief also affects drainage. For example, upland soils generally are gently sloping to very steep and have convex surfaces. These soils generally have good internal and external drainage and are mostly well drained.

Soils at the lower elevations, adjacent to or near drainageways, are less sloping and receive runoff from the adjacent higher areas. This runoff tends to accumulate in the nearly level to slightly concave areas. The somewhat poorly drained Arkaqua soils and the poorly drained Hatboro soils on flood plains are in these areas.

Time

The length of time that soil material has been exposed to the soil-forming processes accounts for some differences between soils. The formation of a well defined profile, however, also depends on other factors. Less time is required for a profile to develop in coarse textured material than in similar but finer textured material, even if the environment is the same for both materials. Less time is required for a profile to develop in the survey area, which is warm and humid and has a dense plant cover, than in a cold, dry area that has a sparse plant cover.

Soils vary considerably in age. The length of time that a soil has been forming is generally reflected in the profile. Old soils generally have better defined horizons than young soils. In Surry County, the effects of time as a soil-forming factor are more apparent in the older soils that are in the broader parts of the uplands. Examples are Clifford and Fairview soils. These soils have well defined horizons. In contrast, young soils, such as Colvard and Bandana soils, formed in recent alluvium on flood plains and have not been in place long enough to develop as completely as Clifford and Fairview soils.

Processes of Horizon Differentiation

The results of the soil-forming processes are evidenced by the different layers, or soil horizons, in a profile. The soil profile extends from the surface down to materials that are little altered by the soil-forming processes.

Most soils have three major horizons—the A, B, and C horizons. Some soils, particularly those in forests, also have an O (organic) horizon at the surface. This horizon is an accumulation of organic material, such as twigs and leaves, or of humified organic material that has little mineral material. The major horizons can be subdivided to indicate differences within the horizon. For example, the Bt horizon has an accumulation of clay from overlying horizons and represents the best developed part of a B horizon. Braddock soils, for example, have a Bt horizon.

The A horizon is a mineral surface layer. It commonly is darkened by humified organic matter. An Ap horizon is a plow layer commonly darkened by organic matter. The maximum extent of leaching or eluviation of clay and iron occurs in the A horizon. If uneroded or plowed and mixed with material from lower horizons, the A horizon commonly has a granular structure. In an E horizon, considerable leaching has occurred and organic matter has not darkened the soil material. The E horizon, where it occurs, commonly is the lightest colored horizon in the profile and is most likely between the A and B horizons.

The B horizon commonly underlies the A horizon and is called the subsoil. The maximum extent of accumulation, or illuviation, of clay, iron, aluminum, or other compounds leached from the surface layer occurs in this horizon. The B horizon commonly has a blocky structure. It generally is firmer and lighter colored than the A horizon, but it is darker than the C or E horizons.

The C horizon underlies the A and B horizons. It consists of materials that are little altered by the soil-forming processes, but it may be modified by weathering. The C horizon generally is presumed to be the parent material in which the A and B horizons above it have formed. Young soils, such as those that formed in recent alluvium or in manmade deposits of fill materials, may have a C horizon that extends nearly to the surface. In such cases, there may not be a B horizon.

The R layer is continuous hard bedrock and generally is below the other horizons. It is commonly the parent rock in which the overlying layer or horizon was formed.

One or more soil-forming processes are involved in the formation of soil horizons. These processes are the accumulation of organic matter; the leaching of carbonates and other soluble material; the chemical weathering, mainly by hydrolysis, of primary minerals into silicate clay minerals; the translocation of silicate clay and some silt-sized particles from one horizon to another; and the reduction and transfer of iron.

These processes have been active in the formation of most of the soils in the survey area. The interaction of the first four processes is indicated by the strongly expressed horizons in Clifford and Toast soils. All five processes have probably been active in the formation of the moderately well drained Dillard soils.

Some organic matter has accumulated in all of the soils in the survey area. Most of the soils contain moderate amounts of organic matter in the surface layer. The content of organic matter ranges from low, as in Fairview soils, to high, as in Nikwasi soils.

Most of the soils in the survey area are acid in the upper layers, unless the surface layer has been limed, because the bases released during the weathering of the soil and saprolite have been leached.

The translocation of clay minerals is an important process in the development of many soils in the survey area. As clay minerals are removed from the A horizon, they accumulate as clay films on the faces of peds, in pores, and in root channels in the B horizon.

As silicate clay forms from primary minerals, some iron is commonly released as hydrated oxides. These oxides are generally red. Even if they occur in small amounts, they give the soil material a reddish or brownish color. These colors are best expressed in the subsoil.

The reduction and transfer of iron has occurred in all of the soils that are not characterized by good natural drainage. This process, known as gleying, is evidenced by a gray matrix color and by iron or clay depletions. Some of the iron may be reoxidized and segregated and thus form yellow, brown, red, or other brightly colored masses of iron accumulation in an essentially gray matrix in the subsoil. Nodules or concretions of iron ore or manganese also commonly form as a result of this process. Soil features associated with chemically reduced iron are referred to as redoximorphic features (Vepraskas, 1992).

Geology and Soils

For the most part, the rock formations of Surry County are metamorphic in origin. The general strike of these formations is northeast-southwest, and the dip is northwest in most places. Most of the rocks are in the form of gneisses and schists.

The metamorphic rocks in the northwestern two-fifths of the county formed during the Precambrian Geologic Period (USDI, 1975). These rock are in the Alligator Back Formation of the Blue Ridge Geologic Belt and primarily are felsic gneisses and schists and phyllites and some amphibolites.

There is a roughly oval-shaped granitic intrusion in the north-central part of the county from the Devonian Geologic Period (USDI, 1975). The town of Mt. Airy is located within this geologic unit, and the rock unit is known as the Mt. Airy granite.

There is a band of metamorphic rocks that cut diagonally through the central part of the county and make up about one-fifth of the county. This band of rocks, which is fairly wide in the northeastern part of the county and narrows to the southwest, is part of the Smith River Allochthon (USDI, 1975). These rocks are late Precambrian to Cambrian in geologic age and are mostly banded gneiss interlayered with other rocks, including amphibolite, sillimanite-mica schist, and granitic rock. There is a metamorphosed granitic rock unit that was intruded into this band along the Stokes county line; it is Cambrian to Ordivician in geologic age (USDI, 1975).

Most of the rocks in the southeastern two-fifths of the county are part of the Sauratown Mountains Anticlinorium (USDI, 1975). The biotite-muscovite gneisses and schists that contain some amphibolite, phyllite, and small areas of ultramafic rock are Cambrian in geologic age, and the granitic gneiss that contains some amphibolite is Precambrian in geologic age. Much of the mica schist also contains garnet, kyanite, sillimanite, and staurolite. There is a small rock unit of metaquartzite along the southeastern edge of the county. This area, known as Pilot Mountain, rises 1,000 feet or more above the surrounding landscape. It is very similar to the geologic unit that forms the Sauratown Mountains in adjacent Stokes County.

There is a small band of rocks in the southwestern part of the county along the Yadkin River that is part of the Inner Piedmont Geologic Belt (USDI, 1975). These rocks are Cambrian or Precambrian in geologic age and are mostly biotite gneiss and schist and include some amphibolite and granitic rock.

Faulting has occurred along the boundary of the Sauratown Mountains Anticlinorium and the Smith River Allochthon (USDI, 1975). None of these faults have been active in recent times.

Soil formation and development in Surry County generally can be grouped into five categories. The first and largest group consists of the soils that formed in residuum on interfluves and side slopes throughout the Piedmont. The second group consists of the soils that formed in residuum on the Blue Ridge escarpment, the Blue Ridge foothills, and Pilot Mountain. The third group consists of the soils that formed in residuum on resistant Piedmont hills. The fourth group consists of the soils that formed in recent alluvium along stream channels of the Piedmont and Blue Ridge foothills. The fifth group consists of the soils that formed in colluvium and old alluvium on footslopes and toeslopes throughout the county. Although this last group formed on footslopes and toeslopes, due to geologic erosion, small isolated areas of these soils can be found on summits throughout the Piedmont.

The residual soils of the Piedmont have formed primarily from felsic metamorphic gneisses and schists. The soils of this group include the Clifford, Fairview, Westfield, and Woolwine soils, which have a red clayey subsoil, and the Devotion, Rhodhiss, and Stott Knob soils, which have a red, yellow, or brown loamy subsoil. There are some small areas of soils that formed from mafic metamorphic rocks in the Piedmont. The soils of this group are the Redbrush soils, which have a yellow or brown clayey subsoil, and the Siloam soils, which have a yellow or brown loamy subsoil. Also in the Piedmont are soils that formed in the residuum of granite (fig. 31), which is an intrusive igneous rock. In places, the granite has been metamorphosed to granitic gneiss. The soils of this group include the Toast soils, which have a yellow or brown clayey subsoil, and the Rhodhiss and Bannertown soils, which have a yellow or brown loamy subsoil.

The residual soils of the Blue Ridge and of Pilot Mountain formed primarily from felsic metamorphic gneisses and schists. The soils of this group are the Chestnut, Cleveland, Cliffield, Peaks, and Sauratown soils, which have a yellow loamy subsoil, and the Evard and Cowee soil, which have a red loamy subsoil.

The residual soils of the resistant Piedmont hills formed primarily from felsic metamorphic rocks, such as mica-sillimanite schist, which are slightly more resistant to weathering. The soils of this group are the Rhodhiss, Stott Knob, and Meadowfield soils, which have a red, yellow, or brown loamy subsoil.

The soils that formed in recent alluvium adjacent to stream channels are subject to flooding, if not protected. The soils of this group all have a loamy subsoil or a loamy substrata and include the well drained Colvard and Suches soils, the somewhat poorly drained Arkaqua and Bandana soils, the poorly drained Hatboro soils, and the very poorly drained Nikwasi soils.

The loamy Dillard soils occur in the older alluvium on low terraces and rarely flood. The clayey Braddock soils developed in the oldest alluvium and do not flood because they are above the present flood level of most of the streams that deposited them.

The residual and colluvial soils of the mountains and foothills can be divided into two groups. The residual soils include the Chestnut, Cleveland, Cliffield, Cowee, Evard,

Figure 31.—Exposure of the Mt. Airy granite on an excavated site in the town of Mt. Airy in an area of Toast-Urban land complex, 2 to 8 percent slopes, rocky.

Fairview, Peaks, Sauratown, and Woolwine soils. The Chestnut, Peaks, and Cleveland soils are the dominant soils along the top of the Blue Ridge escarpment and include some smaller areas of the Cliffield and Cowee soils. On Pilot Mountain, the dominant soils are the Sauratown, Cliffield, Cleveland, Peaks, and Chestnut soils. The dominant soils of the foothills are the Cowee, Evard, Fairview, and Woolwine soils. The Fairview and Woolwine soils have a clayey subsoil, and the rest of these soils have a loamy subsoil.

The colluvial soils of the mountains include Braddock soils, which have a clayey subsoil, and Tate, Brevard, Greenlee, Pilot Mountain, and Tusquitee soils, which have a loamy subsoil.

The alluvial soils of the mountains can be divided into two groups—those which formed in recent alluvium and flood and those which formed in old alluvium and do not flood. The loamy Colvard and Suches soils on flood plains are soils that flood. The soils that rarely flood are the loamy Tate, Brevard, and Dillard soils. The clayey Braddock soils have developed in the oldest alluvium and do not flood because they are above the present flood level of most streams. The Tate, Brevard, and Braddock soils actually transcend the two groups of mountain soils because they formed in colluvium on the lower mountain slopes that often coalesce with old alluvium of second bottoms.

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Bates, Robert L., and Julia A. Jackson, editors. 1984. Dictionary of geological terms. 3rd edition. The American Geological Institute.

Bonner, W.R. 1983. Survey and classification of state-managed trout streams. North Carolina Wildlife Resources Commission, District 7 Final Report F-24-S.

Buol, S.W., F.D. Hole, and R.J. McCracken. 1980. Soil genesis and classification. 3rd edition.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Davis, W.A. and E.F. Goldston. 1937. Soil Survey of Surry County, North Carolina. United Stated Department of Agriculture, Bureau of Chemistry and Soils.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hollingsworth, J.B., editor. 1935. The Surry County book. Bicentennial Commission Book Committee.

Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 5.0, 2002. Field indicators of hydric soils in the United States.

Illick, J.S., and J.E. Aughanbaugh. 1930. Pitch pine in Pennsylvania. Pennsylvania Department of Forest and Waters Research Bulletin 2.

Jackson, Hester Bartlett. 1983. The heritage of Surry County. Volume 1. Surry County Genealogical Association. Hunter Publishing Company: Winston Salem.

Menhinick, E.F. 1991. The freshwater fishes of North Carolina. University Press, UNC Charlotte.

Mickey, J.H. 1980. Survey and evaluation of selected smallmouth bass and marginal smallmouth bass streams located in District 7, North Carolina. North Carolina Wildlife Resources Commission Final Report F-24.

Mickey, J.H. 1993. Monitoring of wild trout populations in the upper Mitchell Ri8ver impacted by accelerated sedimentation caused by the “Olde Beau” development, Alleghany County. North Carolina Wildlife Resources Wildlife Commission Summary Report.

Mickey, J.H. 1980-1994. Unpublished survey reports, District 7 files. North Carolina Wildlife Resources Commission.

Mickey, J.H., and J.A. Simpson. 1988. Survey of Ictalurid populations in the upper Yadkin and South Yadkin Rivers. North Carolina Wildlife Resources Commission Final Report F-24-12.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and W.D. Broderson, editors. 2002. Field book for describing and sampling soils. Version 2.0. U.S. Department of Agriculture, Natural Resources Conservation Service.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://soils.usda.gov/technical/.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Forest Service. 1991. Forest statistics for North Carolina, 1990. Southeast. Forest Experiment Station. Resource Bulletin SE-120.

United States Department of the Interior, Geological Survey. 1927. Lambsburg topographic quadrangle, Virginia-North Carolina, 7.5 minute series. 1927 North American Datum.

United States Department of the Interior, Geological Survey. 1927. Pinnacle topographic quadrangle, North Carolina, 7.5 minute series. 1927 North American Datum.

United States Department of the Interior, Geological Survey. 1975. Geologic map of the eastern half of the Winston-Salem quadrangle, North Carolina-Virginia. Miscellaneous Investigation Series.

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210.

Vepraskas, Michael J. 1992. Redoximorphic features for identifying aquic conditions. N.C. State University., N.C. Agricultural Research Service. Bulletin 301.

Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

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.

Allochthon. A mass of rock that has been moved a long distance from its place of origin, commonly by a tectonic process, such as overthrusting.

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.

Amphibole. A mineral group, most commonly hornblende, tremolite-actinolite, and cummingtonite-grunerite, that exhibits good prismatic cleavage in two directions. Color varies and is most commonly black to dark green.

Amphibolite. A metamorphic rock consisting mainly of amphibole and plagioclase with little or no quartz. As the content of quartz increases, the rock grades into hornblende plagioclase gneiss.

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.

Anticline (landform). A unit of folded strata that is convex upward, has a core that contains the stratigraphically oldest rocks, and occurs at the earth’s surface. In a single anticline, beds forming the opposing limbs of the fold dip away from its axial plane.

Anticline (structural geology). A fold, at any depth, generally convex upward, which has a core that contains the stratigraphically older rocks.

Anticlinorium. A series of anticlines and synclines arranged structurally so that together they form a general arch or anticline.

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. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

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).

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.

Biotite. A common rock-forming mineral consisting primarily of ferromagnesian silicate minerals. Biotite is commonly referred to as “black mica” because of the natural black color.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Borrow pit. An open excavation from which soil and underlying material have been removed, usually for construction purposes.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

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.

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.

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.

Cliff. Any high, very steep to perpendicular or overhanging face of rock or earth; a precipice.

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.

Colluvial. Pertaining to material or processes associated with transportation and/or deposition by mass movement (e.g., direct gravitational action) and local, unconcentrated runoff (overland flow) on side slopes and/or at the base of slopes.

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, 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. See Redoximorphic features.

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.

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.

Cove. The steep or very steep, concave colluvial area at the head of drainageways in Piedmont and mountainous areas. Coves commonly have higher tree site indexes than surrounding slopes.

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.

Crest. The generally linear, narrow top of a ridge, hill, or mountain. It is appropriately applied to elevated areas where retreating backslopes are converging so that these high areas are almost exclusively composed of convex shoulders.

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.

Cut (geology). A passage, incision, or space from which material has been excavated, such as a road cut or a railroad cut.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

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.

Depression. Any relatively sunken part of the earth's surface, especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage (e.g. a sinkhole). An open depression has a natural outlet for surface drainage.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Dip. A geomorphic component of flat plains (e.g., lake plain, low coastal plain, low-relief till plain) that consists of a shallow, and generally a closed, depression that tends to be an area of focused groundwater recharge but is not a permanent water body. It lies slightly lower and is wetter than the adjacent talf and favors the accumulation of fine sediments and organic materials.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

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.

Earthy fill. See Mine spoil.

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.

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 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.

Escarpment, bedrock. A relatively continuous and short, steep slope or cliff produced by erosion or faulting, which breaks the general bedrock continuity of more gently sloping land surfaces. Exposed material is hard or soft bedrock.

Fan (geomorphology). A gently sloping, fan-shaped mass of detritus that forms a section of a low-angle cone, generally at a place where there is a notable decrease in gradient; specifically an alluvial fan. It can also be a fan-shaped mass of congealed lava that formed on a steep slope by the continually changing direction of flow.

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.

Felsic rock. A general term for light colored igneous rock and some metamorphic crystalline rock that have an abundance of quartz, feldspars, feldspathoids, and muscovite mica.

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.

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. Deposits of natural earth materials (e.g., soil, gravel, and rock) and waste materials (e.g., tailings or spoil from dredging) constructed by humans to fill a depression, to extend shore land into a body of water, or to build dams. It can also refer to soil or loose rock used to raise the surface level of low-lying land, such as an embankment to fill a hollow or ravine in the construction of a road.

Fine textured soil. Sandy clay, silty clay, or clay.

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).

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.

Formation. The basic lithostratigraphic unit in the local classification of rocks. A body of rock, generally a sedimentary stratum or strata but also igneous and metamorphic rock. It generally is characterized by some degree of internal lithologic homogeneity or has distinctive lithologic features, such as chemical composition, structure, texture, or general kind of fossils. It has a prevailing (but not necessarily tabular) shape and is mappable at the earth's surface (at scales of the order of 1:25,000) or traceable in the subsurface. Formation may be combined into groups or subdivided into members.

Garnet. A common group of minerals that occurs as crystals in metamorphic rocks and has a variety of colors, though dark red is the characteristic color.

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.

Geomorphic component. A fundamental, three-dimensional piece or area of a geomorphic setting (i.e., hills, mountains, terraces, flat plains) that has unique and prevailing kinetic energy dynamics and sediment transport conditions that result in characteristic form, patterns of sedimentation, and soil development.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Gneiss. A coarse grained metamorphic rock in which bands rich in granular minerals alternate with bands that are predominantly schistose minerals. It is commonly formed by the metamorphism of granite.

Granite. A coarse grained igneous rock dominated by light colored minerals, consisting of about 50 percent orthoclase and 25 percent quartz, with the balance being plagioclase feldspars and ferromagnesian silicates. Granites and granodiorites comprise 95 percent of all intrusive rocks.

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.

Gravelly spot. A spot where the surface layer has more than 35 percent, by volume, rock fragments that are mostly less than 3 inches in diameter in an area with less than 15 percent fragments.

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.

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.

High hill. A generic name for an elevated, generally rounded land surface that has high local relief. It rises between 90 meters (approx. 300 ft.) to as much as 300 m (approx. 1,000 ft.) above surrounding lowlands.

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.

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 include depth to a seasonal high water table, the infiltration rate, and depth to a layer that significantly restricts the downward movement of water. 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).

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.

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.

Intermediate rock. Igneous or metamorphic crystalline rock that is intermediate in composition between mafic and felsic rock.

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.

Intrusive (geologic). Of or pertaining to intrusion, both the process and the rock that is formed.

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.

Ksat. See Saturated hydraulic conductivity.

Landform. Any physical, recognizable form or feature on the earth’s surface that has a characteristic shape and range in composition and is produced by natural causes. It can span a wide range in size. Landforms provide an empirical description of similar portions of the earth’s surface.

Landscape. An assemblage, group, or family of spatially related, natural landforms over a relatively large area; the land surface that the eye can comprehend in a single view.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

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.

Low hill. A generic name for an elevated, generally rounded land surface that has low local relief and rises between 30 meters (100 ft.) to as much as 90 m (approx. 300 ft.) above surrounding lowlands.

Low strength. The soil is not strong enough to support loads.

Mafic rock. A dark rock composed predominantly of magnesium silicates. It can contain small amounts of quartz, feldspar, or muscovite mica.

Masses. See Redoximorphic features.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

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.

Metaquartzite. A granoblastic metamorphic rock that consists mainly of quartz, which was formed by recrystallization of sandstone by regional or thermal metamorphism.

Mica. A group of silicate minerals characterized by sheet or scale cleavage. Biotite is the ferromagnesian black mica. Muscovite is the potassic white mica.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Monadnock. A hill or mountain rising conspicuously above the general level of a peneplain in a temperate climate. It represents an isolated remnant in a region that has been largely beveled to its base level.

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.

Mountain base. A geomorphic component of mountains that consists of the lowermost area. It is characterized by the strongly to slightly concave colluvial apron or wedge at the bottom of mountain slopes. It is composed of long-transport colluvium and slope alluvium sediment. It can extend out onto more level valley areas where it ultimately interfingers with alluvium, is buried by alluvium, or is replaced by re-emergent residuum.

Mountain flank. A geomorphic component of mountains that consists of the side area of mountains. It is characterized by very long, complex backslopes that have comparatively high slope gradients and it is composed of highly diverse colluvial sediment mantles. It has complex, near-surface hydrology and mass movement processes and features (e.g., creep, landslides). Rock outcrops or structural benches may be present. The mountain flank can be subdivided by the general location along the mountainside (i.e., upper third, middle third, or lower third mountain flank).

Mountaintop. A geomorphic component of mountains that consists of the uppermost, comparatively level or gently sloped area of mountains. It is characterized by relatively short, simple slopes composed of bare rock, residuum, or short-transport colluvial sediments. In humid environments, mountaintop soils can be quite thick and well developed.

Mountain valley. Any small, externally drained, V-shaped depression (in cross-section) cut or deepened by a stream and floored with alluvium or a broader, U-shaped depression modified by an alpine glacier and floored with either till or alluvium that occurs on a mountain or within mountains. Several types of mountain valleys can be recognized based on their form and valley floor sediments (i.e., V-shaped valley, U-shaped valley).

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.

Muscovite. A mineral in the mica group that is colorless to pale brown and is common in gneisses, schists, granites, pegmatites, and in many sedimentary rocks, especially sandstones.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

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).

No-till. A conservation farming method in which the soil is never tilled and successive crops are planted into the remaining stubble or residue from the preceding crop. Weeds and the preceding cover crops are killed prior to or at planting by the use of chemical herbicides.

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.

Paleozoic era. An era of geologic time from the end of the Precambrian to the beginning of the Mesozoic or from about 570 to about 225 million years ago.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

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.

Perennial stream. A stream, or reach of a stream, that flows continuously throughout the year.

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.

Phyllite. A metamorphic rock that is intermediate between slate and mica schist.

Physiographic province. A region where all parts are similar in geologic structure and climate and has a unified geomorphic history. The patterns of relief, features, or landforms differ significantly from those of adjacent regions. Examples are the Valley and Ridge, Blue Ridge, and Piedmont provinces in the eastern U.S. and the Basin and Range, Rocky Mountains, and Great Plains provinces in the western U.S.

Piedmont The physiographic region of central North Carolina characterized by rolling landscapes formed from the weathering of residual rock material.

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.

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.

Precambrian. All geologic time, and its corresponding rocks, before the beginning of the Paleozoic era.

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.

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

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 that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:

   A. Nodules and concretions, which 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; *and*

   B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*

   C. Pore linings, i.e., 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, including:

A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*

B. Clay depletions, i.e., 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.

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 having a sharp crest and steep sides.

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.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. An exposure of bedrock at the surface of the earth.

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.

Sanitary landfill. A land area where municipal solid waste is buried in a manner engineered to minimize environmental degradation. Commonly, the waste is compacted and ultimately covered with soil or other earthy material.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandy spot. A spot where the surface layer is loamy fine sand or coarser in areas where the surface layer of the named soils of the surrounding map unit is very fine sandy loam or finer.

Saturated hydraulic conductivity (Ksat). The ease with which pores of a saturated soil transmit water. Formally, the proportionality coefficient that expresses the relationship of the rate of water movement to hydraulic gradient in Darcy's Law, a law that describes the rate of water movement through porous media. Commonly abbreviated as "Ksat." Terms describing saturated hydraulic conductivity are *very high*, 100 or more micrometers per second (14.17 or more inches per hour); *high*, 10 to 100 micrometers per second (1.417 to 14.17 inches per hour); *moderately high*, 1 to 10 micrometers per second (0.1417 inch to 1.417 inches per hour); *moderately low*, 0.1 to 1 micrometer per second (0.01417 to 0.1417 inch per hour); *low*, 0.01 to 0.1 micrometer per second (0.001417 to 0.01417 inch per hour); and *very low*, less than 0.01 micrometer per second (less than 0.001417 inch per hour). To convert inches per hour to micrometers per second, multiply inches per hour by 7.0572. To convert micrometers per second to inches per hour, multiply micrometers per second by 0.1417.

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.

Schist. A metamorphic rock that is dominantly fibrous or platy minerals. It has schistose cleavage and is a product of regional metamorphism.

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.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Short, steep slope. Narrow soil area that has slopes that are at least two slope classes steeper than the slope class of the surrounding map unit.

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.

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.

Sillimanite. A mineral formed by high temperature, high pressure contact metamorphism. It is trimorphous with kyanite and andalusite. It occurs in long, slender crystals, often as wisplike or fibrous aggregates in schists and gneisses.

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.

Silviculture. The practice of producing and managing a forest.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

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 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 45 percent
Very steep	45 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 water transmission in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

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.

Staurolite. A brown to black mineral formed by medium-grade metamorphism that occurs as crystals in mica schists and gneisses. Twined crystals resemble a cross and are known as fairy stones.

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.

Stony spot. A spot where 0.01 to 0.1 percent of the surface cover is rock fragments that are greater than 10 inches in diameter in areas where the surrounding soil has no surface stones.

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.

Strike (geologic). The direction taken by a structural surface, such as a bedding or fault plain, as it intersects the horizontal.

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 grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Syncline (landform). A unit of folded strata that is concave upward, has a core that contains the stratigraphically younger rocks, and occurs at the earth's surface. In a single syncline, beds forming the opposing limbs of the fold dip toward its axial plane.

Syncline (structural geology). A fold, at any depth, generally concave upward; its core contains the stratigraphically younger rocks.

Talf. A geomorphic component of flat plains (e.g., lake plain, low coastal plain, low-gradient till plain) that consists of an essentially flat (e.g. 0-1% slopes) and broad area dominated by closed depressions and a nonintegrated or poorly integrated drainage system. Precipitation tends to pond locally, and lateral transport is slow both above and below ground, which favors the accumulation of soil organic matter and a retention of fine-earth sediments; better drained soils are commonly adjacent to drainageways.

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.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

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.

Topography. The relative positions and elevations of the natural or manmade features of an area that describe the configuration of its surface.

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.

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 step-like landforms, such as successive stream terraces.

Ultramafic. Igneous rock composed chiefly of mafic minerals.

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 elongated, relatively large, externally drained depression of the earth's surface that is primarily formed by stream erosion or glacial activity.

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.

Wet spot. A somewhat poorly drained to very poorly drained area that is at least two drainage classes wetter than the named soils in the surrounding map unit.

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

Temperature and Precipitation

(Recorded in the period 1961-1990 at Mount Airy, North Carolina)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January-----	46.9	25.1	36.0	68	-1	6	3.24	1.91	4.43	7	3.9
February----	51.4	27.2	39.3	74	7	15	3.44	1.71	4.95	6	4.1
March-------	61.7	35.0	48.4	82	16	80	4.18	2.58	5.62	7	1.3
April-------	71.0	42.5	56.8	89	24	229	3.73	2.33	4.98	6	0.0
May---------	78.5	51.7	65.1	91	31	468	4.35	2.68	5.86	8	0.0
June--------	84.8	59.6	72.2	95	42	666	3.71	1.77	5.39	7	0.0
July--------	87.6	63.8	75.7	97	49	797	4.54	2.73	6.16	7	0.0
August------	86.5	63.0	74.8	96	48	767	3.82	1.54	5.75	7	0.0
September---	80.8	56.4	68.6	92	37	559	4.20	1.60	6.38	5	0.0
October-----	71.1	44.2	57.7	85	24	258	3.78	1.40	5.76	5	0.0
November----	60.7	36.0	48.4	79	16	80	3.23	1.84	4.46	5	0.3
December----	50.5	28.8	39.7	71	7	16	3.42	1.57	5.01	6	1.4
Yearly:											
Average---	69.3	44.4	56.9	---	---	---	---	---	---	---	---
Extreme---	101	-10	---	98	-1	---	---	---	---	---	---
Total-----	---	---	---	---	---	3940	45.64	39.07	51.53	76	11.0

* 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 (50 degrees F).

Freeze Dates in Spring and Fall

(Recorded in the period 1961-1990 at Mount Airy, NC)

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--	Apr. 5	Apr. 20	May 10
2 year in 10 later than--	Mar. 30	Apr. 16	May 5
5 year in 10 later than--	Mar. 19	Apr. 8	Apr. 24
First freezing temperature in fall:			
1 yr in 10 earlier than--	Oct. 26	Oct. 10	Oct. 2
2 yr in 10 earlier than--	Oct. 31	Oct. 15	Oct. 7
5 yr in 10 earlier than--	Nov. 11	Oct. 26	Oct. 16

Growing Season

(Recorded for the period 1961-1990 at Mount Airy, NC)

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	212	183	157
8 years in 10	220	189	163
5 years in 10	236	200	174
2 years in 10	252	210	186
1 year in 10	261	216	192

Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
ArA	Arkaqua loam, 0 to 2 percent slopes, frequently flooded	3,509	1.0
BaC	Bandana-Tate-Nikwasi complex, 0 to 15 percent slopes, frequently flooded	1,036	0.3
BbB	Braddock fine sandy loam, 2 to 8 percent slopes	4,595	1.3
BbC	Braddock fine sandy loam, 8 to 15 percent slopes	4,158	1.2
BbD	Braddock fine sandy loam, 15 to 25 percent slopes	630	0.2
BcB	Braddock cobbly fine sandy loam, 2 to 8 percent slopes	1,059	0.3
BdC	Braddock cobbly fine sandy loam, 8 to 15 percent slopes, stony	1,194	0.3
BdD	Braddock cobbly fine sandy loam, 15 to 25 percent slopes, stony	650	0.2
BpC	Braddock-Pilot Mountain complex, 8 to 15 percent slopes, rubbly	284	*
BpD	Braddock-Pilot Mountain complex, 15 to 45 percent slopes, rubbly	519	0.2
BrD	Brevard-Greenlee complex, 8 to 25 percent slopes, very bouldery	652	0.2
BrE	Brevard-Greenlee complex, 25 to 60 percent slopes, very bouldery	528	0.2
CeD	Chestnut-Peaks complex, 8 to 25 percent slopes, very rocky	818	0.2
CeE	Chestnut-Peaks complex, 25 to 45 percent slopes, very rocky	1,221	0.4
CfF	Chestnut-Peaks-Tuckasegee complex, 45 to 90 percent slopes, very rocky	4,388	1.3
ChE	Cleveland-Rock outcrop-Peaks complex, windswept, 10 to 45 percent slopes, very bouldery	167	*
CkF	Cleveland-Rock outcrop-Peaks complex, windswept, 45 to 90 percent slopes, extremely bouldery	627	0.2
CmD	Cliffield-Cowee complex, 8 to 25 percent slopes, very stony	99	*
CnE	Cliffield-Cowee complex, 25 to 45 percent slopes, very rocky	91	*
CoD	Cliffield-Sauratown complex, 8 to 25 percent slopes, rubbly	214	*
CoE	Cliffield-Sauratown complex, 25 to 45 percent slopes, rubbly	320	*
CrB2	Clifford sandy clay loam, 2 to 8 percent slopes, moderately eroded	7,588	2.2
CsA	Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded	18,777	5.4
CwC	Cowee gravelly loam, 8 to 15 percent slopes, stony	137	*
CwD	Cowee gravelly loam, 15 to 25 percent slopes, stony	2,782	0.8
CwE	Cowee gravelly loam, 25 to 45 percent slopes, stony	7,275	2.1
CxF	Cowee-Saluda-Evard complex, 45 to 90 percent slopes, rocky	2,609	0.8
DAM	Dam	2	*
DeF	Devotion-Rhodhiss-Bannertown complex, 40 to 95 percent slopes, very rocky	4,010	1.2
DrB	Dillard fine sandy loam, 2 to 8 percent slopes, rarely flooded	1,254	0.4
EcC	Evard-Cowee complex, 8 to 15 percent slopes, stony	825	0.2
EcD	Evard-Cowee complex, 15 to 25 percent slopes, stony	1,678	0.5
EcE	Evard-Cowee complex, 25 to 45 percent slopes, stony	4,676	1.4
FeB2	Fairview sandy clay loam, 2 to 8 percent slopes, moderately eroded	25,609	7.4
FeC2	Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded	45,933	13.3
FeD2	Fairview sandy clay loam, 15 to 25 percent slopes, moderately eroded	30,632	8.9
FfD	Fairview cobbly fine sandy loam, 15 to 25 percent slopes, stony	7,820	2.3
FnB2	Fairview cobbly sandy clay loam, 2 to 8 percent slopes, moderately eroded, stony	4,314	1.2
FnC2	Fairview cobbly sandy clay loam, 8 to 15 percent slopes, moderately eroded, stony	9,430	2.7
FrC2	Fairview-Siloam complex, 8 to 15 percent slopes, moderately eroded	1,097	0.3
FrD2	Fairview-Siloam complex, 15 to 25 percent slopes, moderately eroded	922	0.3
FsE	Fairview-Stott Knob complex, 25 to 45 percent slopes	12,814	3.7
FtE	Fairview-Stott Knob complex, 25 to 45 percent slopes, stony	2,802	0.8
FuB2	Fairview-Urban land complex, 2 to 8 percent slopes, moderately eroded	1,723	0.5
FuC2	Fairview-Urban land complex, 8 to 15 percent slopes, moderately eroded	2,145	0.6
GrE	Greenlee extremely bouldery fine sandy loam, 25 to 60 percent slopes, rubbly	198	*
HaA	Hatboro loam, 0 to 2 percent slopes, frequently flooded	288	*
MsC	Meadowfield-Stott Knob complex, 8 to 15 percent slopes, very stony	294	*
MsD	Meadowfield-Stott Knob complex, 15 to 25 percent slopes, very stony	672	0.2
MsE	Meadowfield-Stott Knob complex, 25 to 45 percent slopes, very stony	1,113	0.3
Pt	Pits, quarry	315	*
RbD	Rhodhiss-Bannertown complex, 15 to 25 percent slopes, very rocky	3,421	1.0
RrE	Rhodhiss-Bannertown-Rock outcrop complex, 25 to 60 percent slopes, very bouldery	922	0.3
RsB	Rhodhiss-Stott Knob complex, 2 to 8 percent slopes, stony	175	*
RsC	Rhodhiss-Stott Knob complex, 8 to 15 percent slopes, stony	1,649	0.5
RsD	Rhodhiss-Stott Knob complex, 15 to 25 percent slopes, stony	1,602	0.5

See footnote at end of table.

Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
RsE	Rhodhiss-Stott Knob complex, 25 to 45 percent slopes, stony	2,906	0.8
SrC	Siloam-Redbrush complex, 6 to 15 percent slopes	419	0.1
SrE	Siloam-Redbrush complex, 15 to 45 percent slopes	443	0.1
StC	Stott Knob gravelly loam, 8 to 15 percent slopes, stony	557	0.2
StD	Stott Knob gravelly loam, 15 to 25 percent slopes, stony	1,080	0.3
StE	Stott Knob gravelly loam, 25 to 45 percent slopes, stony	3,040	0.9
TaD	Tate extremely gravelly fine sandy loam, 8 to 25 percent slopes, extremely stony	201	*
TcC	Tate-Colvard complex, 0 to 15 percent slopes, frequently flooded	2,612	0.8
ToB	Toast coarse sandy loam, 2 to 8 percent slopes, rocky	1,153	0.3
TtC	Toast-Bannertown complex, 8 to 15 percent slopes, very rocky	3,816	1.1
TuB	Toast-Urban land complex, 2 to 8 percent slopes, rocky	1,055	0.3
TwC	Toast-Urban land-Bannertown complex, 8 to 15 percent slopes, very rocky	1,556	0.5
Ud	Udorthents, loamy	1,094	0.3
Ur	Urban land	1,554	0.5
W	Water	2,289	0.7
WfB2	Woolwine-Fairview-Westfield complex, 2 to 8 percent slopes, moderately eroded	9,416	2.7
WfC2	Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, moderately eroded	32,992	9.6
WoD	Woolwine-Fairview-Westfield complex, 15 to 25 percent slopes, stony	25,418	7.4
WoE	Woolwine-Fairview-Westfield complex, 25 to 45 percent slopes, stony	19,398	5.6
	Total	345,261	100.0

* Less than 0.1 percent.

Nonirrigated Yields by Map Unit Component

(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	Corn	Corn silage	Soybeans	Burley tobacco	Wheat
		Bu	Tons	Bu	Lbs	Bu
ArA:						
Arkaqua, undrained------	3w	150.00	19.60	60.00	2,200.00	35.00
BaC:						
Bandana-----------------	3w	150.00	23.00	60.00	2,200.00	35.00
Tate--------------------	3e	122.00	22.00	35.00	2,090.00	65.00
Nikwasi, undrained------	6w	70.00	11.00	---	996.00	---
BbB:						
Braddock----------------	2e	113.00	18.00	44.00	2,940.00	74.00
BbC:						
Braddock----------------	3e	92.00	14.40	36.00	2,400.00	60.00
BbD:						
Braddock----------------	4e	81.00	12.60	32.00	1,960.00	53.00
BcB:						
Braddock----------------	2e	109.00	17.10	43.00	2,650.00	71.00
BdC:						
Braddock, stony---------	3s	92.00	14.40	36.00	2,240.00	60.00
BdD:						
Braddock, stony---------	4s	81.00	12.60	32.00	1,960.00	53.00
BpC, BpD:						
Braddock, rubbly--------	7s	---	---	---	---	---
Pilot Mountain, rubbly--	7s	---	---	---	---	---
BrD, BrE:						
Brevard, very bouldery--	7s	---	---	---	---	---
Greenlee, very bouldery-	7s	---	---	---	---	---
CeD:						
Chestnut, very rocky----	6s	---	---	---	---	---
Peaks, very rocky-------	6s	---	---	---	---	---
CeE:						
Chestnut, very rocky----	7s	---	---	---	---	---
Peaks, very rocky-------	7s	---	---	---	---	---
CfF:						
Chestnut, very rocky----	7s	---	---	---	---	---
Peaks, very rocky-------	7s	---	---	---	---	---
Tuckasegee, very rocky--	7s	---	---	---	---	---
ChE:						
Cleveland, windswept----	7s	---	---	---	---	---

Nonirrigated Yields by Map Unit Component—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Soybeans	Burley tobacco	Wheat
		Bu	Tons	Bu	Lbs	Bu
Rock outcrop------------	8s	---	---	---	---	---
Peaks, windswept--------	7s	---	---	---	---	---
CkF:						
Cleveland, windswept----	7s	---	---	---	---	---
Rock outcrop------------	8s	---	---	---	---	---
Peaks, windswept--------	7s	---	---	---	---	---
CmD:						
Cliffield, very stony---	6s	---	---	---	---	---
Cowee, very stony-------	6s	---	---	---	---	---
CnE:						
Cliffield, very rocky---	7s	---	---	---	---	---
Cowee, very rocky-------	7s	---	---	---	---	---
CoD, CoE:						
Cliffield, rubbly-------	8s	---	---	---	---	---
Sauratown, rubbly-------	8s	---	---	---	---	---
CrB2:						
Clifford, moderately eroded-----------------	2e	123.00	22.50	49.00	---	59.00
CsA:						
Colvard-----------------	2w	155.00	24.00	55.00	2,200.00	40.00
Suches------------------	2w	155.00	24.00	55.00	2,200.00	40.00
CwC:						
Cowee, stony------------	3e	88.00	14.00	32.00	2,090.00	49.00
CwD:						
Cowee, stony------------	4e	77.00	13.00	28.00	1,837.00	42.00
CwE:						
Cowee, stony------------	6e	---	---	---	---	---
CxF:						
Cowee, rocky------------	7e	---	---	---	---	---
Saluda, rocky-----------	7e	---	---	---	---	---
Evard, rocky------------	7e	---	---	---	---	---
DAM:						
Dam---------------------	8s	---	---	---	---	---
DeF:						
Devotion, very rocky----	7e	---	---	---	---	---
Rhodhiss, very rocky----	7e	---	---	---	---	---
Bannertown, very rocky--	7s	---	---	---	---	---

Nonirrigated Yields by Map Unit Component—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Soybeans	Burley tobacco	Wheat
		Bu	Tons	Bu	Lbs	Bu
DrB:						
Dillard	2e	172.00	27.40	59.00	2,548.00	59.00
EcC:						
Evard, stony	3e	98.00	16.00	36.00	2,322.00	54.00
Cowee, stony	3e	88.00	14.00	32.00	2,090.00	49.00
EcD:						
Evard, stony	4e	86.00	14.00	31.00	2,041.00	47.00
Cowee, stony	4e	77.00	13.00	28.00	1,837.00	42.00
EcE:						
Evard, stony	6e	---	---	---	---	---
Cowee, stony	6e	---	---	---	---	---
FeB2:						
Fairview, moderately eroded	2e	95.00	17.00	34.00	---	43.00
FeC2:						
Fairview, moderately eroded	3e	85.00	16.00	31.00	---	39.00
FeD2:						
Fairview, moderately eroded	4e	64.00	10.90	23.00	---	30.00
FfD:						
Fairview, stony	4e	---	---	---	---	---
FnB2:						
Fairview, moderately eroded	2e	86.00	15.00	31.00	---	39.00
FnC2:						
Fairview, moderately eroded	3e	77.00	14.50	28.00	---	35.00
FrC2:						
Fairview, moderately eroded	3e	85.00	16.00	31.00	---	39.00
Siloam, moderately eroded	4s	71.00	11.00	27.00	---	39.00
FrD2:						
Fairview, moderately eroded	4e	64.00	10.90	23.00	---	30.00
Siloam, moderately eroded	6e	65.00	10.00	24.00	---	32.00
FsE:						
Fairview	6e	---	---	---	---	---
Stott Knob	6e	---	---	---	---	---
FtE:						
Fairview, stony	6e	---	---	---	---	---

Nonirrigated Yields by Map Unit Component—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Soybeans	Burley tobacco	Wheat
		Bu	Tons	Bu	Lbs	Bu
Stott Knob, stony	6e	---	---	---	---	---
FuB2:						
Fairview, moderately eroded	2e	---	---	---	---	---
Urban land	8s	---	---	---	---	---
FuC2:						
Fairview, moderately eroded	3e	---	---	---	---	---
Urban land	8s	---	---	---	---	---
GrE:						
Greenlee, rubbly	8s	---	---	---	---	---
HaA:						
Hatboro, drained	3w	80.00	12.00	---	---	---
Hatboro, undrained	6w	---	---	---	---	---
MsC, MsD:						
Meadowfield, very stony	6s	---	---	---	---	---
Stott Knob, very stony	6s	---	---	---	---	---
MsE:						
Meadowfield, very stony	7s	---	---	---	---	---
Stott Knob, very stony	7s	---	---	---	---	---
Pt:						
Pits, quarry	8s	---	---	---	---	---
RbD:						
Rhodhiss, very rocky	6s	---	---	---	---	---
Bannertown, very rocky	6s	---	---	---	---	---
RrE:						
Rhodhiss, very bouldery	7s	---	---	---	---	---
Bannertown, very bouldery	7s	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---
RsB:						
Rhodhiss, stony	2e	98.00	16.00	34.00	---	49.00
Stott Knob, stony	2e	60.00	9.20	21.00	---	31.00
RsC:						
Rhodhiss, stony	3e	80.00	13.00	28.00	---	40.00
Stott Knob, stony	3e	56.00	7.00	20.00	---	28.00
RsD:						
Rhodhiss, stony	4e	70.00	11.20	25.00	---	35.00
Stott Knob, stony	4e	49.00	6.30	18.00	---	25.00

Nonirrigated Yields by Map Unit Component—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Soybeans	Burley tobacco	Wheat
		Bu	Tons	Bu	Lbs	Bu
RsE:						
Rhodhiss, stony	6e	---	---	---	---	---
Stott Knob, stony	6e	---	---	---	---	---
SrC:						
Siloam	4s	71.00	11.00	27.00	---	39.00
Redbrush	3e	85.00	14.00	31.00	---	40.00
SrE:						
Siloam	7e	---	---	---	---	---
Redbrush	7e	---	---	---	---	---
StC:						
Stott Knob, stony	3e	56.00	7.00	20.00	---	28.00
StD:						
Stott Knob, stony	4e	49.00	6.30	18.00	---	25.00
StE:						
Stott Knob, stony	6e	---	---	---	---	---
TaD:						
Tate, extremely stony	7s	---	---	---	---	---
TcC:						
Tate	3e	122.00	22.00	35.00	2,090.00	65.00
Colvard	3w	155.00	24.00	55.00	2,200.00	40.00
ToB:						
Toast, rocky	2e	108.00	20.00	39.00	---	49.00
TtC:						
Toast, very rocky	4s	98.00	17.90	36.00	---	44.60
Bannertown, very rocky	4s	68.00	9.00	22.00	---	32.00
TuB:						
Toast, rocky	2e	---	---	---	---	---
Urban land	8s	---	---	---	---	---
TwC:						
Toast, very rocky	4s	---	---	---	---	---
Urban land	8s	---	---	---	---	---
Bannertown, very rocky	4s	---	---	---	---	---
Ud:						
Udorthents, loamy	7s	---	---	---	---	---
Ur:						
Urban land	8s	---	---	---	---	---
WfB2:						
Woolwine, moderately eroded	2e	67.00	10.00	24.00	---	33.00

Nonirrigated Yields by Map Unit Component—Continued

Map symbol and soil name	Land capability	Corn	Corn silage	Soybeans	Burley tobacco	Wheat
		Bu	Tons	Bu	Lbs	Bu
Fairview, moderately eroded	2e	95.00	17.00	34.00	---	43.00
Westfield, moderately eroded	2e	95.00	17.00	34.00	---	43.00
WfC2:						
Woolwine, moderately eroded	3e	63.00	9.00	22.00	---	31.00
Fairview, moderately eroded	3e	85.00	16.00	31.00	---	39.00
Westfield, moderately eroded	3e	85.00	16.00	31.00	---	39.00
WoD:						
Woolwine, stony	4e	---	---	---	---	---
Fairview, stony	4e	---	---	---	---	---
Westfield, stony	4e	---	---	---	---	---
WoE:						
Woolwine, stony	6e	---	---	---	---	---
Fairview, stony	6e	---	---	---	---	---
Westfield, stony	6e	---	---	---	---	---

Prime Farmland and other Important Farmlands

(Only the soils considered prime or important farmland are listed. Urban or built-up areas of the soils listed are not considered prime or important farmland. If a soil is prime or important farmland only under certain conditions, the conditions are specified in parentheses after the soil name.)

Map symbol	Map unit name	Farmland Classification
BbB	Braddock fine sandy loam, 2 to 8 percent slopes	Prime farmland in all areas
CrB2	Clifford sandy clay loam, 2 to 8 percent slopes, moderately eroded	Prime farmland in all areas
CsA	Colvard and Suches soils, 0 to 3 percent slopes, occasionally flooded	Prime farmland in all areas
DrB	Dillard fine sandy loam, 2 to 8 percent slopes, rarely flooded	Prime farmland in all areas
FeB2	Fairview sandy clay loam, 2 to 8 percent slopes, moderately eroded	Prime farmland in all areas
BdC	Braddock cobbly fine sandy loam, 8 to 15 percent slopes, stony	Farmland of local importance
BdD	Braddock cobbly fine sandy loam, 15 to 25 percent slopes, stony	Farmland of local importance
EcC	Evard-Cowee complex, 8 to 15 percent slopes, stony	Farmland of local importance
EcD	Evard-Cowee complex, 15 to 25 percent slopes, stony	Farmland of local importance
TcC	Tate-Colvard complex, 0 to 15 percent slopes, frequently flooded	Farmland of local importance
BbC	Braddock fine sandy loam, 8 to 15 percent slopes	Farmland of statewide importance
BcB	Braddock cobbly fine sandy loam, 2 to 8 percent slopes	Farmland of statewide importance
FeC2	Fairview sandy clay loam, 8 to 15 percent slopes, moderately eroded	Farmland of statewide importance
WfB2	Woolwine-Fairview-Westfield complex, 2 to 8 percent slopes, moderately eroded	Farmland of statewide importance
WfC2	Woolwine-Fairview-Westfield complex, 8 to 15 percent slopes, moderately eroded	Farmland of statewide importance
ArA	Arkaqua loam, 0 to 2 percent slopes, frequently flooded	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge

(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	Application of manure and food-processing waste		Application of sewage sludge	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ArA:				
Arkaqua, undrained	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00
	Too acid	0.05	Too acid	0.21
BaC:				
Bandana	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	1.00
	Filtering capacity	0.99	Filtering capacity	0.99
Tate	Somewhat limited		Somewhat limited	
	Too acid	0.22	Too acid	0.77
	Slope	0.04	Slope	0.04
	Low adsorption	0.01		
Nikwasi, undrained	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
BbB:				
Braddock	Somewhat limited		Very limited	
	Too acid	0.50	Too acid	0.99
BbC:				
Braddock	Somewhat limited		Very limited	
	Too acid	0.50	Too acid	0.99
	Slope	0.16	Slope	0.16
BbD:				
Braddock	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Too acid	0.50	Too acid	0.99
BcB:				
Braddock	Somewhat limited		Very limited	
	Too acid	0.50	Too acid	0.99
BdC:				
Braddock, stony	Somewhat limited		Very limited	
	Too acid	0.50	Too acid	0.99
	Slope	0.16	Slope	0.16
BdD:				
Braddock, stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Too acid	0.50	Too acid	0.99

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
BpC:				
Braddock, rubbly	Very limited		Very limited	
	Large stones content	1.00	Cobble content	0.99
	Cobble content	0.99	Large stones on the surface	0.99
	Large stones on the surface	0.99	Too acid	0.99
Pilot Mountain, rubbly	Very limited		Very limited	
	Large stones content	1.00	Low adsorption	1.00
	Large stones on the surface	1.00	Large stones on the surface	1.00
	Cobble content	1.00	Too acid	1.00
BpD:				
Braddock, rubbly	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Large stones content	1.00	Cobble content	0.99
	Cobble content	0.99	Large stones on the surface	0.99
Pilot Mountain, rubbly	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Large stones content	1.00	Slope	1.00
	Large stones on the surface	1.00	Large stones on the surface	1.00
BrD, BrE:				
Brevard, very bouldery	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Large stones content	0.47	Too acid	0.91
	Too acid	0.32	Large stones on the surface	0.08
Greenlee, very bouldery	Very limited		Very limited	
	Large stones on the surface	1.00	Large stones on the surface	1.00
	Slope	1.00	Slope	1.00
	Cobble content	0.87	Too acid	0.99
CeD:				
Chestnut, very rocky	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.83	Slope	1.00
	Depth to bedrock	0.54	Too acid	0.99
Peaks, very rocky	Very limited		Very limited	
	Droughty	1.00	Low adsorption	1.00
	Slope	1.00	Droughty	1.00
	Depth to bedrock	0.71	Slope	1.00

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
CeE:				
Chestnut, very rocky	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.83	Slope	1.00
	Depth to bedrock	0.54	Too acid	0.99
Peaks, very rocky---	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	1.00	Slope	1.00
	Depth to bedrock	0.71	Droughty	1.00
CfF:				
Chestnut, very rocky	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.83	Slope	1.00
	Depth to bedrock	0.54	Too acid	0.99
Peaks, very rocky---	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	1.00	Slope	1.00
	Depth to bedrock	0.71	Droughty	1.00
Tuckasegee, very rocky--------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Leaching	0.45	Too acid	0.21
	Too acid	0.05		
ChE:				
Cleveland, windswept	Very limited		Very limited	
	Droughty	1.00	Droughty	1.00
	Depth to bedrock	1.00	Low adsorption	1.00
	Slope	1.00	Depth to bedrock	1.00
Rock outcrop--------	Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited	
	Droughty	1.00	Low adsorption	1.00
	Slope	1.00	Droughty	1.00
	Depth to bedrock	0.71	Slope	1.00
CkF:				
Cleveland, windswept	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--------	Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Large stones content	1.00	Slope	1.00
	Droughty	1.00	Droughty	1.00

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
CmD:				
Cliffield, very stony	Very limited		Very limited	
	Droughty	1.00	Droughty	1.00
	Slope	1.00	Low adsorption	1.00
	Depth to bedrock	0.95	Too acid	1.00
Cowee, very stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Large stones content	0.53	Slope	1.00
	Too acid	0.50	Too acid	0.99
CnE:				
Cliffield, very rocky	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
Cowee, very rocky	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Large stones content	0.53	Slope	1.00
	Too acid	0.50	Too acid	0.99
CoD:				
Cliffield, rubbly	Very limited		Very limited	
	Droughty	1.00	Droughty	1.00
	Large stones content	1.00	Low adsorption	1.00
	Large stones on the surface	1.00	Large stones on the surface	1.00
Sauratown, rubbly	Very limited		Very limited	
	Large stones content	1.00	Low adsorption	1.00
	Droughty	1.00	Droughty	1.00
	Slope	1.00	Too acid	1.00
CoE:				
Cliffield, rubbly	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
Sauratown, rubbly	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Large stones content	1.00	Slope	1.00
	Droughty	1.00	Droughty	1.00
CrB2:				
Clifford, moderately eroded	Somewhat limited		Somewhat limited	
	Low adsorption	0.67	Too acid	0.77
	Too acid	0.22	Low adsorption	0.43

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
CsA:				
Colvard	Somewhat limited		Very limited	
	Flooding	0.60	Flooding	1.00
	Leaching	0.45	Too acid	0.21
	Too acid	0.05		
Suches	Somewhat limited		Very limited	
	Depth to saturated zone	0.86	Flooding	1.00
	Flooding	0.60	Depth to saturated zone	0.86
	Too acid	0.11	Too acid	0.42
CwC:				
Cowee, stony	Somewhat limited		Very limited	
	Slope	0.63	Low adsorption	1.00
	Too acid	0.50	Too acid	0.99
	Droughty	0.21	Slope	0.63
CwD, CwE:				
Cowee, stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.50	Slope	1.00
	Droughty	0.21	Too acid	0.99
CxF:				
Cowee, rocky	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.50	Slope	1.00
	Droughty	0.21	Too acid	0.99
Saluda, rocky	Very limited		Very limited	
	Slope	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00
	Depth to bedrock	1.00	Slope	1.00
Evard, rocky	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Too acid	0.50	Too acid	0.99
DAM:				
Dam	Not rated		Not rated	
DeF:				
Devotion, very rocky	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.90	Slope	1.00
	Depth to bedrock	0.90	Too acid	0.99
Rhodhiss, very rocky	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Too acid	0.50	Too acid	0.99
Bannertown, very rocky	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.75	Slope	1.00
	Depth to bedrock	0.71	Too acid	1.00

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
DrB:				
Dillard	Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Slow water movement	0.30	Flooding	0.40
	Too acid	0.05	Slow water movement	0.22
EcC:				
Evard, stony	Somewhat limited		Very limited	
	Slope	0.63	Too acid	0.99
	Too acid	0.50	Slope	0.63
Cowee, stony	Somewhat limited		Very limited	
	Slope	0.63	Low adsorption	1.00
	Too acid	0.50	Too acid	0.99
	Droughty	0.21	Slope	0.63
EcD, EcE:				
Evard, stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Too acid	0.50	Too acid	0.99
Cowee, stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.50	Slope	1.00
	Droughty	0.21	Too acid	0.99
FeB2:				
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
FeC2:				
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Low adsorption	0.45	Slope	0.37
	Slope	0.37	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
FeD2:				
Fairview, moderately eroded	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
FfD:				
Fairview, stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Low adsorption	0.37	Too acid	0.21
	Too acid	0.05	Low adsorption	0.09
FnB2:				
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
FnC2:				
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Low adsorption	0.45	Slope	0.37
	Slope	0.37	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
FrC2:				
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
	Slope	0.04	Slope	0.04
Siloam, moderately eroded	Very limited		Very limited	
	Droughty	1.00	Droughty	1.00
	Depth to bedrock	1.00	Low adsorption	1.00
	Runoff	0.40	Depth to bedrock	1.00
FrD2:				
Fairview, moderately eroded	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
Siloam, moderately eroded	Very limited		Very limited	
	Slope	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00
	Depth to bedrock	1.00	Slope	1.00
FsE:				
Fairview	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Low adsorption	0.27	Too acid	0.21
	Too acid	0.05		
Stott Knob	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.62	Slope	1.00
	Depth to bedrock	0.46	Too acid	1.00
FtE:				
Fairview, stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Low adsorption	0.37	Too acid	0.21
	Too acid	0.05	Low adsorption	0.09
Stott Knob, stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.62	Slope	1.00
	Depth to bedrock	0.46	Too acid	1.00

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
FuB2:				
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
Urban land	Not rated		Not rated	
FuC2:				
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
Urban land	Not rated		Not rated	
GrE:				
Greenlee, rubbly	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Large stones content	1.00	Large stones on the surface	1.00
	Large stones on the surface	1.00	Too acid	0.99
HaA:				
Hatboro, drained	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
Hatboro, undrained	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
MsC:				
Meadowfield, very stony	Very limited		Very limited	
	Droughty	1.00	Low adsorption	1.00
	Too acid	0.78	Droughty	1.00
	Depth to bedrock	0.65	Too acid	1.00
Stott Knob, very stony	Somewhat limited		Very limited	
	Slope	0.63	Low adsorption	1.00
	Too acid	0.62	Too acid	1.00
	Large stones content	0.53	Slope	0.63
MsD:				
Meadowfield, very stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	1.00	Slope	1.00
	Too acid	0.78	Droughty	1.00

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
Stott Knob, very stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.62	Slope	1.00
	Large stones content	0.53	Too acid	1.00
MsE:				
Meadowfield, very stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	1.00	Slope	1.00
	Too acid	0.78	Droughty	1.00
Stott Knob, very stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.62	Slope	1.00
	Large stones content	0.53	Too acid	1.00
Pt:				
Pits, quarry	Not rated		Not rated	
RbD:				
Rhodhiss, very rocky	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Too acid	0.50	Too acid	0.99
Bannertown, very rocky	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.84	Slope	1.00
	Depth to bedrock	0.71	Too acid	1.00
RrE:				
Rhodhiss, very bouldery	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Too acid	0.50	Too acid	0.99
	Large stones content	0.47		
Bannertown, very bouldery	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.84	Slope	1.00
	Depth to bedrock	0.71	Too acid	1.00
Rock outcrop	Not rated		Not rated	
RsB:				
Rhodhiss, stony	Somewhat limited		Very limited	
	Too acid	0.50	Too acid	0.99
Stott Knob, stony	Somewhat limited		Very limited	
	Too acid	0.62	Low adsorption	1.00
	Droughty	0.25	Too acid	1.00
	Depth to bedrock	0.16	Droughty	0.25

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge	
	Rating class and limiting features	Value	Rating class and limiting features	Value
RsC:				
Rhodhiss, stony-----	Somewhat limited		Very limited	
	Slope	0.63	Too acid	0.99
	Too acid	0.50	Slope	0.63
Stott Knob, stony---	Somewhat limited		Very limited	
	Slope	0.63	Low adsorption	1.00
	Too acid	0.62	Too acid	1.00
	Droughty	0.25	Slope	0.63
RsD, RsE:				
Rhodhiss, stony-----	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Too acid	0.50	Too acid	0.99
Stott Knob, stony---	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.62	Slope	1.00
	Droughty	0.25	Too acid	1.00
SrC:				
Siloam--------------	Very limited		Very limited	
	Droughty	1.00	Droughty	1.00
	Depth to bedrock	1.00	Low adsorption	1.00
	Runoff	0.40	Depth to bedrock	1.00
Redbrush------------	Somewhat limited		Very limited	
	Droughty	0.99	Low adsorption	1.00
	Slow water movement	0.89	Droughty	0.99
			Depth to bedrock	0.84
	Depth to bedrock	0.84		
SrE:				
Siloam--------------	Very limited		Very limited	
	Slope	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00
	Depth to bedrock	1.00	Slope	1.00
Redbrush------------	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.99	Slope	1.00
	Slow water movement	0.89	Droughty	0.99
StC:				
Stott Knob, stony---	Somewhat limited		Very limited	
	Slope	0.63	Low adsorption	1.00
	Too acid	0.62	Too acid	1.00
	Droughty	0.25	Slope	0.63
StD, StE:				
Stott Knob, stony---	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Too acid	0.62	Slope	1.00
	Droughty	0.25	Too acid	1.00

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
TaD:				
Tate, extremely stony	Very limited		Very limited	
	Large stones content	1.00	Slope	1.00
	Slope	1.00	Too acid	0.77
	Too acid	0.22		
TcC:				
Tate	Somewhat limited		Somewhat limited	
	Too acid	0.22	Too acid	0.77
	Low adsorption	0.01		
Colvard	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Leaching	0.45	Too acid	0.21
	Too acid	0.05		
ToB:				
Toast, rocky	Somewhat limited		Very limited	
	Too acid	0.73	Too acid	1.00
	Low adsorption	0.39	Low adsorption	0.10
TtC:				
Toast, very rocky	Somewhat limited		Very limited	
	Too acid	0.73	Too acid	1.00
	Slope	0.63	Slope	0.63
	Low adsorption	0.39	Low adsorption	0.10
Bannertown, very rocky	Somewhat limited		Very limited	
	Droughty	0.84	Low adsorption	1.00
	Depth to bedrock	0.71	Too acid	1.00
	Slope	0.63	Droughty	0.84
TuB:				
Toast, rocky	Somewhat limited		Very limited	
	Too acid	0.73	Too acid	1.00
	Low adsorption	0.39	Low adsorption	0.10
Urban land	Not rated		Not rated	
TwC:				
Toast, very rocky	Somewhat limited		Very limited	
	Too acid	0.73	Too acid	1.00
	Slope	0.63	Slope	0.63
	Low adsorption	0.39	Low adsorption	0.10
Urban land	Not rated		Not rated	
Bannertown, very rocky	Somewhat limited		Very limited	
	Droughty	0.84	Low adsorption	1.00
	Depth to bedrock	0.71	Too acid	1.00
	Slope	0.63	Droughty	0.84
Ud:				
Udorthents, loamy	Somewhat limited		Somewhat limited	
	Too acid	0.02	Too acid	0.07

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Ur:				
Urban land	Not rated		Not rated	
WfB2:				
Woolwine, moderately eroded	Somewhat limited		Very limited	
	Droughty	0.99	Low adsorption	1.00
	Low adsorption	0.47	Droughty	0.99
	Depth to bedrock	0.46	Depth to bedrock	0.46
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
Westfield, moderately eroded	Somewhat limited		Very limited	
	Low adsorption	0.48	Low adsorption	1.00
	Too acid	0.05	Too acid	0.21
WfC2:				
Woolwine, moderately eroded	Somewhat limited		Very limited	
	Droughty	0.99	Low adsorption	1.00
	Slope	0.63	Droughty	0.99
	Low adsorption	0.47	Slope	0.63
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63
	Low adsorption	0.45	Low adsorption	0.26
	Too acid	0.05	Too acid	0.21
Westfield, moderately eroded	Somewhat limited		Very limited	
	Slope	0.63	Low adsorption	1.00
	Low adsorption	0.48	Slope	0.63
	Too acid	0.05	Too acid	0.21
WoD:				
Woolwine, stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.99	Slope	1.00
	Too acid	0.78	Too acid	1.00
Fairview, stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Low adsorption	0.46	Low adsorption	0.34
	Too acid	0.05	Too acid	0.21
Westfield, stony	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Low adsorption	0.45	Slope	1.00
	Too acid	0.05	Too acid	0.21

Agricultural Disposal of Manure, Food-Processing Waste, and Sewage Sludge—Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge	
	Rating class and limiting features	Value	Rating class and limiting features	Value
WoE:				
Woolwine, stony-----	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Droughty	0.99	Slope	1.00
	Too acid	0.78	Too acid	1.00
Fairview, stony-----	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Low adsorption	0.46	Low adsorption	0.34
	Too acid	0.05	Too acid	0.21
Westfield, stony----	Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00
	Low adsorption	0.38	Slope	1.00
	Too acid	0.05	Too acid	0.21

Agricultural Disposal of Wastewater by Irrigation and Overland Flow

(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	Disposal of wastewater by irrigation		Overland flow of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ArA:				
Arkaqua, undrained	Very limited		Very limited	
	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Seepage	1.00
	Too acid	0.21	Depth to saturated zone	1.00
BaC:				
Bandana	Very limited		Very limited	
	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Seepage	1.00
	Filtering capacity	0.99	Depth to saturated zone	1.000
Tate	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	0.77	Too acid	0.77
	Too steep for sprinkler application	0.22	Too steep for surface application	0.50
Nikwasi, undrained	Very limited		Very limited	
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Flooding	1.00	Ponding	1.00
BbB:				
Braddock	Very limited		Very limited	
	Too acid	0.99	Seepage	1.00
	Too steep for surface application	0.08	Too acid	0.99
BbC:				
Braddock	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	0.99	Too acid	0.99
	Too steep for sprinkler application	0.40	Too steep for surface application	0.78

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation		Overland flow of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BbD:				
Braddock	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	0.99	Too acid	0.99
BcB:				
Braddock	Very limited		Very limited	
	Too acid	0.99	Seepage	1.00
	Too steep for surface application	0.08	Too acid	0.99
BdC:				
Braddock, stony	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	0.99	Too acid	0.99
	Too steep for sprinkler application	0.40	Too steep for surface application	0.78
BdD:				
Braddock, stony	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
BpC:				
Braddock, rubbly	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Cobble content	0.99	Too acid	0.99
	Large stones on the surface	0.99	Too steep for surface application	0.94
Pilot Mountain, rubbly	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Large stones on the surface	1.00	Too acid	1.00
	Too acid	1.00	Cobble content	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation		Overland flow of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BpD:				
Braddock, rubbly----	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
	Cobble content	0.99	Too acid	0.99
Pilot Mountain, rubbly-------------	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
	Large stones on the surface	1.00	Too acid	1.00
BrD:				
Brevard, very bouldery-----------	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	0.91	Too acid	0.91
Greenlee, very bouldery-----------	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Large stones on the surface	1.00	Stone content	1.00
	Too steep for sprinkler application	1.00	Too steep for surface application	1.00
BrE:				
Brevard, very bouldery-----------	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	0.91	Too acid	0.91

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
Greenlee, very bouldery	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
	Large stones on the surface	1.00	Stone content	1.00
CeD:				
Chestnut, very rocky	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	0.99	Too steep for surface application	1.00
Peaks, very rocky	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Droughty	1.00	Depth to bedrock	1.00
	Too steep for sprinkler application	1.00	Too steep for surface application	1.00
CeE:				
Chestnut, very rocky	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	Depth to bedrock	1.00
Peaks, very rocky	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
	Droughty	1.00	Depth to bedrock	1.00
CfF:				
Chestnut, very rocky	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	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation		Overland flow of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Peaks, very rocky---	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
	Droughty	1.00	Depth to bedrock	1.00
Tuckasegee, very rocky--------------	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	0.21	Too acid	0.21
ChE:				
Cleveland, windswept	Very limited		Very limited	
	Droughty	1.00	Seepage	1.00
	Too steep for surface application	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Too steep for surface application	1.00
Rock outcrop--------	Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Droughty	1.00	Depth to bedrock	1.00
	Too steep for sprinkler application	1.00	Too steep for surface application	1.00
CkF:				
Cleveland, windswept	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--------	Not rated		Not rated	
Peaks, windswept----	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
	Droughty	1.00	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation		Overland flow of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CmD:				
Cliffield, very stony	Very limited		Very limited	
	Droughty	1.00	Seepage	1.00
	Too steep for surface application	1.00	Depth to bedrock	1.00
			Too acid	1.00
	Too acid	1.00		
Cowee, very stony	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		
CnE:				
Cliffield, very rocky	Very limited		Very limited	
	Droughty	1.00	Seepage	1.00
	Too steep for surface application	1.00	Too steep for surface application	1.00
	Too steep for sprinkler application	1.00	Depth to bedrock	1.00
Cowee, very rocky	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
			Too steep for surface application	1.00
	Too steep for sprinkler application	1.00	Depth to bedrock	1.00
	Too acid	0.99		
CoD:				
Cliffield, rubbly	Very limited		Very limited	
	Droughty	1.00	Seepage	1.00
	Too steep for surface application	1.00	Depth to bedrock	1.00
			Too acid	1.00
	Large stones on the surface	1.00		
Sauratown, rubbly	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
	Droughty	1.00		
	Too acid	1.00		

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
CoE:				
Cliffield, rubbly	Very limited		Very limited	
	Droughty	1.00	Seepage	1.00
	Too steep for surface application	1.00	Too steep for surface application	1.00
	Too steep for sprinkler application	1.00	Depth to bedrock	1.00
Sauratown, rubbly	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
	Droughty	1.00	Depth to bedrock	1.00
CrB2:				
Clifford, moderately eroded	Somewhat limited		Very limited	
	Too acid	0.77	Seepage	1.00
	Low adsorption	0.67	Too acid	0.77
	Too steep for surface application	0.08	Low adsorption	0.67
CsA:				
Colvard	Somewhat limited		Very limited	
	Flooding	0.60	Flooding	1.00
	Too acid	0.21	Seepage	1.00
			Too acid	0.21
Suches	Somewhat limited		Very limited	
	Depth to saturated zone	0.86	Flooding	1.00
	Flooding	0.60	Seepage	1.00
	Too acid	0.42	Depth to saturated zone	0.86
CwC:				
Cowee, stony	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	0.99	Depth to bedrock	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00
			Too steep for application	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation		Overland flow of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
CwD, CwE:				
Cowee, stony	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	Depth to bedrock	1.00
CxF:				
Cowee, rocky	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	Depth to bedrock	1.00
Saluda, rocky	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
Evard, rocky	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
DAM:				
Dam	Not rated		Not rated	
DeF:				
Devotion, very rocky	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	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
Rhodhiss, very rocky	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
Bannertown, very rocky	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	Depth to bedrock	1.00
DrB:				
Dillard	Very limited		Very limited	
	Depth to saturated zone	0.99	Seepage	1.00
	Slow water movement	0.22	Depth to saturated zone	0.99
	Too acid	0.21	Flooding	0.40
EcC:				
Evard, stony	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
Cowee, stony	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	0.99	Depth to bedrock	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00
EcD, EcE:				
Evard, stony	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

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
Cowee, stony	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	Depth to bedrock	1.00
FeB2:				
Fairview, moderately eroded	Somewhat limited		Very limited	
	Low adsorption	0.45	Seepage	1.00
	Too acid	0.21	Low adsorption	0.45
	Too steep for surface application	0.08	Too acid	0.21
FeC2:				
Fairview, moderately eroded	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
	Low adsorption	0.45	Low adsorption	0.45
FeD2:				
Fairview, moderately eroded	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
	Low adsorption	0.45	Low adsorption	0.45
FfD:				
Fairview, stony	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
	Low adsorption	0.37	Low adsorption	0.37
FnB2:				
Fairview, moderately eroded	Somewhat limited		Very limited	
	Low adsorption	0.45	Seepage	1.00
	Too acid	0.21	Low adsorption	0.45
	Too steep for surface application	0.08	Too acid	0.21

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation		Overland flow of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
FnC2:				
Fairview, moderately eroded	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
	Low adsorption	0.45	Low adsorption	0.45
FrC2:				
Fairview, moderately eroded	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Low adsorption	0.45	Too steep for surface application	0.50
	Too steep for sprinkler application	0.22	Low adsorption	0.45
Siloam, moderately eroded	Very limited		Very limited	
	Droughty	1.00	Seepage	1.00
	Too steep for surface application	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Too steep for surface application	0.50
FrD2:				
Fairview, moderately eroded	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
	Low adsorption	0.45	Low adsorption	0.45
Siloam, moderately eroded	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

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
FsE:				
Fairview	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
	Low adsorption	0.27	Low adsorption	0.27
Stott Knob	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	Depth to bedrock	1.00
FtE:				
Fairview, stony	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
	Low adsorption	0.37	Low adsorption	0.37
Stott Knob, stony	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	Depth to bedrock	1.00
FuB2:				
Fairview, moderately eroded	Somewhat limited		Very limited	
	Low adsorption	0.45	Seepage	1.00
	Too acid	0.21	Low adsorption	0.45
	Too steep for surface application	0.08	Too acid	0.21
Urban land	Not rated		Not rated	

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
FuC2:				
Fairview, moderately eroded	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00
	Low adsorption	0.45	Low adsorption	0.45
Urban land	Not rated		Not rated	
GrE:				
Greenlee, rubbly	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
	Large stones on the surface	1.00	Stone content	1.00
HaA:				
Hatboro, drained	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
Hatboro, undrained	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
MsC:				
Meadowfield, very stony	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Droughty	1.00	Depth to bedrock	1.00
	Too acid	1.00	Too steep for surface application	1.00
Stott Knob, very stony	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	1.00	Depth to bedrock	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
MsD, MsE:				
Meadowfield, very stony	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
	Droughty	1.00	Depth to bedrock	1.00
Stott Knob, very stony	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	Depth to bedrock	1.00
Pt:				
Pits, quarry	Not rated		Not rated	
RbD:				
Rhodhiss, very rocky	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
Bannertown, very rocky	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	Depth to bedrock	1.00
RrE:				
Rhodhiss, very bouldery	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 application	0.99

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
Bannertown, very bouldery-----------	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	Depth to bedrock	1.00
Rock outcrop--------	Not rated		Not rated	
RsB:				
Rhodhiss, stony-----	Very limited		Very limited	
	Too acid	0.99	Seepage	1.00
	Too steep for surface application	0.08	Too acid	0.99
Stott Knob, stony---	Very limited		Very limited	
	Too acid	1.00	Seepage	1.00
	Droughty	0.25	Depth to bedrock	1.00
	Depth to bedrock	0.16	Too acid	1.00
RsC:				
Rhodhiss, stony-----	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
Stott Knob, stony---	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	1.00	Depth to bedrock	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00
RsD, RsE:				
Rhodhiss, stony-----	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

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
Stott Knob, stony---	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	Depth to bedrock	1.00
SrC:				
Siloam--------------	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	0.50
Redbrush------------	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Droughty	0.99	Depth to bedrock	1.00
	Depth to bedrock	0.84	Too steep for surface application	0.50
SrE:				
Siloam--------------	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
Redbrush------------	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
	Droughty	0.99	Depth to bedrock	1.00
StC:				
Stott Knob, stony---	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	1.00	Depth to bedrock	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
StD, StE:				
Stott Knob, stony	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	Depth to bedrock	1.00
TaD:				
Tate, extremely stony	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	0.77	Too acid	0.77
TcC:				
Tate	Somewhat limited		Very limited	
	Too acid	0.77	Seepage	1.00
	Too steep for surface application	0.68	Too acid	0.77
	Low adsorption	0.01	Low adsorption	0.01
Colvard	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Too acid	0.21	Seepage	1.00
			Too acid	0.21
ToB:				
Toast, rocky	Very limited		Very limited	
	Too acid	1.00	Seepage	1.00
	Low adsorption	0.39	Too acid	1.00
	Too steep for surface application	0.08	Low adsorption	0.39
TtC:				
Toast, very rocky	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	1.00	Too acid	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
Bannertown, very rocky	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	1.00	Depth to bedrock	1.00
	Droughty	0.84	Too steep for surface application	1.00
TuB:				
Toast, rocky	Very limited		Very limited	
	Too acid	1.00	Seepage	1.00
	Low adsorption	0.39	Too acid	1.00
	Too steep for surface application	0.08	Low adsorption	0.39
Urban land	Not rated		Not rated	
TwC:				
Toast, very rocky	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	1.00	Too acid	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00
Urban land	Not rated		Not rated	
Bannertown, very rocky	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too acid	1.00	Depth to bedrock	1.00
	Droughty	0.84	Too steep for surface application	1.00
Ud:				
Udorthents, loamy	Somewhat limited		Very limited	
	Too steep for surface application	0.32	Seepage	1.00
	Too acid	0.07	Too acid	0.07
Ur:				
Urban land	Not rated		Not rated	
WfB2:				
Woolwine, moderately eroded	Somewhat limited		Very limited	
	Droughty	0.99	Seepage	1.00
	Low adsorption	0.47	Depth to bedrock	1.00
	Depth to bedrock	0.46	Low adsorption	0.47

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
Fairview, moderately eroded	Somewhat limited		Very limited	
	Low adsorption	0.45	Seepage	1.00
	Too steep for surface application	0.32	Low adsorption	0.45
	Too acid	0.21	Too acid	0.21
Westfield, moderately eroded	Somewhat limited		Very limited	
	Low adsorption	0.48	Seepage	1.00
	Too steep for surface application	0.32	Depth to bedrock	0.61
	Too acid	0.21	Low adsorption	0.48
WfC2:				
Woolwine, moderately eroded	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Droughty	0.99	Depth to bedrock	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00
Fairview, moderately eroded	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00
	Low adsorption	0.45	Low adsorption	0.45
Westfield, moderately eroded	Very limited		Very limited	
	Too steep for surface application	1.00	Seepage	1.00
	Too steep for sprinkler application	0.78	Too steep for surface application	1.00
	Low adsorption	0.48	Depth to bedrock	0.61
WoD:				
Woolwine, stony	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	1.00	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Irrigation and Overland Flow—Continued

Map symbol and soil name	Disposal of wastewater by irrigation		Overland flow of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Fairview, stony-----	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
	Low adsorption	0.46	Low adsorption	0.46
Westfield, stony----	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
	Low adsorption	0.45	Depth to bedrock	0.61
WoE:				
Woolwine, stony-----	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	1.00	Depth to bedrock	1.00
Fairview, stony-----	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
	Low adsorption	0.46	Low adsorption	0.46
Westfield, stony----	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
	Low adsorption	0.38	Depth to bedrock	0.61

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment

(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	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
ArA:				
Arkaqua, undrained	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Slow water movement	1.00	Too acid	0.21
BaC:				
Bandana	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Slow water movement	0.32	Filtering capacity	0.99
Tate	Very limited		Very limited	
	Slow water movement	1.00	Too steep for surface application	1.00
	Slope	1.00	Too acid	0.77
			Too steep for sprinkler irrigation	0.50
Nikwasi, undrained	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
BbB:				
Braddock	Very limited		Very limited	
	Slow water movement	1.00	Too acid	0.99
			Too steep for surface application	0.08
BbC:				
Braddock	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Too acid	0.99
			Too steep for sprinkler irrigation	0.78

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BbD:				
Braddock------------	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	0.99
BcB:				
Braddock------------	Very limited		Very limited	
	Slow water movement	1.00	Too acid	0.99
			Too steep for surface application	0.08
BdC:				
Braddock, stony-----	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Too acid	0.99
			Too steep for sprinkler irrigation	0.78
BdD:				
Braddock, stony-----	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	0.99
BpC:				
Braddock, rubbly----	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Cobble content	0.99
			Large stones on the surface	0.99
Pilot Mountain, rubbly-------------	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Large stones on the surface	1.00
	Cobble content	1.00	Too acid	1.00

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
BpD:				
Braddock, rubbly	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
			Cobble content	0.99
Pilot Mountain, rubbly	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
	Cobble content	1.00	Large stones on the surface	1.00
BrD:				
Brevard, very bouldery	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	0.91
Greenlee, very bouldery	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Stone content	1.00	Large stones on the surface	1.00
	Cobble content	0.99	Too steep for sprinkler irrigation	1.00
BrE:				
Brevard, very bouldery	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	0.91

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
Greenlee, very bouldery	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
	Cobble content	0.99	Large stones on the surface	1.00
CeD:				
Chestnut, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
Peaks, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	0.68	Too steep for sprinkler irrigation	1.00
CeE:				
Chestnut, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.32	Depth to bedrock	1.00
Peaks, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.68	Depth to bedrock	1.00
CfF:				
Chestnut, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.32	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Peaks, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.68	Depth to bedrock	1.00
Tuckasegee, very rocky	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	0.21
ChE:				
Cleveland, windswept	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	Not rated		Not rated	
Peaks, windswept	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	0.68	Too steep for sprinkler irrigation	1.00
CkF:				
Cleveland, windswept	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	Not rated		Not rated	

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
Peaks, windswept	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.68	Depth to bedrock	1.00
CmD:				
Cliffield, very stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too acid	1.00
Cowee, very stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
CnE:				
Cliffield, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
Cowee, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
CoD:				
Cliffield, rubbly	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Large stones on the surface	1.00
	Slow water movement	1.00	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Sauratown, rubbly---	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
CoE:				
Cliffield, rubbly---	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Large stones on the surface	1.00
Sauratown, rubbly---	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
CrB2:				
Clifford, moderately eroded-------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Too acid	0.77
	Too acid	0.03	Low adsorption	0.67
			Too steep for surface application	0.08
CsA:				
Colvard-------------	Somewhat limited		Somewhat limited	
	Flooding	0.60	Flooding	0.60
	Slow water movement	0.32	Too acid	0.21
Suches--------------	Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.86
	Slow water movement	1.00	Flooding	0.60
	Flooding	0.60	Too acid	0.42

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
CwC:				
Cowee, stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
CwD, CwE:				
Cowee, stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
CxF:				
Cowee, rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
Saluda, rocky	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
Evard, rocky	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	0.99
DAM:				
Dam	Not rated		Not rated	
DeF:				
Devotion, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.32	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
Rhodhiss, very rocky	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	0.99
Bannertown, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.32	Depth to bedrock	1.00
DrB:				
Dillard	Very limited		Very limited	
	Slow water movement	1.00	Depth to saturated zone	0.99
	Depth to saturated zone	1.00	Too acid	0.21
	Too acid	0.14	Slow water movement	0.15
EcC:				
Evard, stony	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	0.99
Cowee, stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
EcD, EcE:				
Evard, stony	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	0.99

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Cowee, stony--------	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
FeB2:				
Fairview, moderately eroded-------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Low adsorption	0.45
			Too acid	0.21
			Too steep for surface application	0.08
FeC2:				
Fairview, moderately eroded-------------	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
			Low adsorption	0.45
FeD2:				
Fairview, moderately eroded-------------	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
			Low adsorption	0.45
FfD:				
Fairview, stony-----	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
			Low adsorption	0.37
FnB2:				
Fairview, moderately eroded-------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Low adsorption	0.45
			Too acid	0.21
			Too steep for surface application	0.08

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
FnC2:				
Fairview, moderately eroded	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
			Low adsorption	0.45
FrC2:				
Fairview, moderately eroded	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	0.50
			Low adsorption	0.45
Siloam, moderately eroded	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	0.50
FrD2:				
Fairview, moderately eroded	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
			Low adsorption	0.45
Siloam, moderately eroded	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

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
FsE:				
Fairview	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
			Low adsorption	0.27
Stott Knob	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
FtE:				
Fairview, stony	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
			Low adsorption	0.37
Stott Knob, stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
FuB2:				
Fairview, moderately eroded	Very limited		Somewhat limited	
	Slow water movement	1.00	Low adsorption	0.45
			Too acid	0.21
			Too steep for surface application	0.08
Urban land	Not rated		Not rated	
FuC2:				
Fairview, moderately eroded	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
			Low adsorption	0.45

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
Urban land----------	Not rated		Not rated	
GrE:				
Greenlee, rubbly----	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
	Cobble content	0.99	Large stones on the surface	1.00
HaA:				
Hatboro, drained----	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
Hatboro, undrained--	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
MsC:				
Meadowfield, very stony--------------	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
Stott Knob, very stony--------------	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
MsD, MsE:				
Meadowfield, very stony--------------	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
Stott Knob, very stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00
Pt:				
Pits, quarry	Not rated		Not rated	
RbD:				
Rhodhiss, very rocky	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	0.99
Bannertown, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.32	Depth to bedrock	1.00
RrE:				
Rhodhiss, very bouldery	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	0.99
Bannertown, very bouldery	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	0.32	Depth to bedrock	1.00
Rock outcrop	Not rated		Not rated	

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
RsB:				
Rhodhiss, stony	Very limited		Very limited	
	Slow water movement	1.00	Too acid	0.99
			Too steep for surface application	0.08
Stott Knob, stony	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too acid	1.00
			Low adsorption	0.13
	Too acid	0.03		
RsC:				
Rhodhiss, stony	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	0.99
Stott Knob, stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00		
	Slow water movement	1.00		
			Depth to bedrock	1.00
			Too steep for sprinkler irrigation	1.00
RsD, RsE:				
Rhodhiss, stony	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	0.99
Stott Knob, stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00		
	Slow water movement	1.00		
			Too steep for sprinkler irrigation	1.00
			Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
SrC:				
Siloam--------------	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	0.50
Redbrush------------	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	0.60
SrE:				
Siloam--------------	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
Redbrush------------	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
	Depth to bedrock	1.00	Depth to bedrock	1.00
StC:				
Stott Knob, stony---	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
StD, StE:				
Stott Knob, stony---	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Too steep for sprinkler irrigation	1.00
	Slow water movement	1.00	Depth to bedrock	1.00

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
TaD:				
Tate, extremely stony	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
TcC:				
Tate	Very limited		Somewhat limited	
	Slow water movement	1.00	Too acid	0.77
	Slope	0.50	Too steep for surface application	0.68
			Low adsorption	0.01
Colvard	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Slow water movement	0.32	Too acid	0.21
ToB:				
Toast, rocky	Very limited		Very limited	
	Slow water movement	1.00	Too acid	1.00
	Too acid	0.14	Low adsorption	0.39
			Too steep for surface application	0.08
TtC:				
Toast, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Too acid	1.00
	Too acid	0.14	Too steep for sprinkler irrigation	1.00
Bannertown, very rocky	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
TuB:				
Toast, rocky	Very limited		Very limited	
	Slow water movement	1.00	Too acid	1.00
	Too acid	0.14	Low adsorption	0.39
			Too steep for surface application	0.08

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Urban land----------	Not rated		Not rated	
TwC:				
Toast, very rocky---	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Too acid	1.00
	Too acid	0.14	Too steep for sprinkler irrigation	1.00
Urban land----------	Not rated		Not rated	
Bannertown, very rocky--------------	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
Ud:				
Udorthents, loamy---	Somewhat limited		Somewhat limited	
	Slow water movement	0.92	Too steep for surface application	0.32
	Slope	0.12	Too acid	0.07
Ur:				
Urban land----------	Not rated		Not rated	
WfB2:				
Woolwine, moderately eroded------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Low adsorption	0.47
	Slope	0.12	Too steep for surface application	0.32
Fairview, moderately eroded------------	Very limited		Somewhat limited	
	Slow water movement	1.00	Low adsorption	0.45
	Slope	0.12	Too steep for surface application	0.32
			Too acid	0.21
Westfield, moderately eroded--	Very limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.61
	Slow water movement	1.00	Low adsorption	0.48
	Slope	0.12	Too steep for surface application	0.32

Agricultural Disposal of Wastewater by Rapid Infiltration and Slow Rate Treatment—Continued

Map symbol and soil name	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
	Rating class and limiting features	Value	Rating class and limiting features	Value
WfC2:				
Woolwine, moderately eroded	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
Fairview, moderately eroded	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
			Low adsorption	0.45
Westfield, moderately eroded	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00		
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
			Depth to bedrock	0.61
WoD, WoE:				
Woolwine, stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00		
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
			Depth to bedrock	1.00
Fairview, stony	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
			Low adsorption	0.46
Westfield, stony	Very limited		Very limited	
	Slope	1.00	Too steep for surface application	1.00
	Depth to bedrock	1.00		
	Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
			Depth to bedrock	0.61

Forestland Productivity

Map symbol and soil name	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to manage
			cu ft/ac	
ArA:				
Arkaqua, undrained	yellow-poplar	96	100	yellow-poplar, Virginia pine, eastern white pine, shortleaf pine, northern red oak, black walnut
	Virginia pine	---	---	
	shortleaf pine	78	126	
	eastern white pine	96	178	
	black walnut	---	---	
BaC:				
Bandana	yellow-poplar	103	112	yellow-poplar
	red maple	---	---	
	river birch	---	---	
	American sycamore	---	---	
	eastern hemlock	---	---	
Tate	yellow-poplar	92	83	eastern white pine, yellow-poplar
	eastern white pine	89	164	
	northern red oak	---	---	
	black locust	---	---	
	eastern hemlock	---	---	
	white oak	---	---	
Nikwasi, undrained	yellow-poplar	88	86	eastern white pine, yellow-poplar
	red maple	---	---	
	yellow birch	---	---	
	eastern white pine	86	157	
	American sycamore	---	---	
	eastern hemlock	---	---	
BbB, BbC, BbD:				
Braddock	eastern white pine	96	178	eastern white pine, yellow-poplar, shortleaf pine
	yellow-poplar	92	93	
	shortleaf pine	74	118	
	northern red oak	---	---	
BcB:				
Braddock	eastern white pine	96	178	eastern white pine, yellow-poplar, shortleaf pine
	yellow-poplar	92	93	
	shortleaf pine	74	118	
	northern red oak	---	---	
BdC, BdD:				
Braddock, stony	eastern white pine	96	178	eastern white pine, yellow-poplar, shortleaf pine
	yellow-poplar	92	93	
	shortleaf pine	74	118	
	northern red oak	---	---	
BpC, BpD:				
Braddock, rubbly	yellow-poplar	92	93	eastern white pine, yellow-poplar, shortleaf pine
	eastern white pine	96	178	
	shortleaf pine	74	118	
	northern red oak	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Pilot Mountain, rubbly--	yellow-poplar-------	114	130	eastern white pine, yellow-poplar, shortleaf pine
	eastern white pine--	106	198	
	shortleaf pine------	---	---	
	northern red oak----	94	76	
	scarlet oak---------	---	---	
	white oak-----------	---	---	
	Virginia pine-------	---	---	
	black locust--------	---	---	
	pitch pine----------	---	---	
	chestnut oak--------	---	---	
BrD, BrE:				
Brevard, very bouldery--	yellow-poplar-------	114	130	black walnut, eastern white pine, northern red oak, shortleaf pine, yellow-poplar
	eastern white pine--	106	198	
	shortleaf pine------	---	---	
	northern red oak----	94	76	
	hemlock-------------	---	---	
	white oak-----------	---	---	
	Virginia pine-------	---	---	
Greenlee, very bouldery-	yellow-poplar-------	101	109	eastern white pine, northern red oak, yellow-poplar
	eastern hemlock-----	---	---	
	white oak-----------	80	62	
	northern red oak----	---	---	
	red maple-----------	---	---	
	eastern white pine--	98	182	
	black locust--------	---	---	
CeD:				
Chestnut, very rocky----	eastern white pine--	78	139	eastern white pine, yellow-poplar
	yellow-poplar-------	97	102	
	northern red oak----	80	62	
	scarlet oak---------	68	50	
	chestnut oak--------	69	51	
	black oak-----------	71	53	
	white oak-----------	70	52	
	pitch pine----------	---	---	
	shortleaf pine------	---	---	
Peaks, very rocky-------	eastern white pine--	81	146	eastern white pine, yellow-poplar
	Virginia pine-------	62	95	
	northern red oak----	---	---	
	chestnut oak--------	70	52	
CeE:				
Chestnut, very rocky----	eastern white pine--	78	139	eastern white pine, yellow-poplar
	yellow-poplar-------	97	102	
	northern red oak----	80	62	
	scarlet oak---------	68	50	
	chestnut oak--------	69	51	
	black oak-----------	71	53	
	white oak-----------	70	52	
	white oak-----------	70	52	
	pitch pine----------	---	---	
	shortleaf pine------	---	---	
Peaks, very rocky-------	eastern white pine--	81	146	eastern white pine, yellow-poplar
	Virginia pine-------	62	95	
	northern red oak----	---	---	
	chestnut oak--------	70	52	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CfF:				
Chestnut, very rocky----	eastern white pine--	78	139	eastern white pine, yellow-poplar
	yellow-poplar-------	97	102	
	northern red oak----	80	62	
	scarlet oak---------	68	50	
	chestnut oak--------	69	51	
	black oak-----------	71	53	
	white oak-----------	70	52	
	white oak-----------	70	52	
	pitch pine----------	---	---	
	shortleaf pine------	---	---	
Peaks, very rocky-------	eastern white pine--	81	146	eastern white pine, yellow-poplar
	Virginia pine-------	62	95	
	northern red oak----	---	---	
	chestnut oak--------	70	52	
Tuckasegee, very rocky--	yellow-poplar-------	109	114	black cherry, eastern white pine, northern red oak, yellow-poplar
	eastern white pine--	98	172	
	northern red oak----	92	74	
	hickory-------------	---	---	
	black cherry--------	---	---	
	white oak-----------	---	---	
	eastern hemlock-----	---	---	
	black locust--------	---	---	
ChE:				
Cleveland, windswept----	eastern white pine--	---	---	---
	Virginia pine-------	---	---	
	chestnut oak--------	40	26	
	northern red oak----	---	---	
	hickory-------------	---	---	
	pitch pine----------	---	---	
	scarlet oak---------	---	---	
Rock outcrop------------	---	---	---	---
Peaks, windswept--------	chestnut oak--------	---	---	---
	Virginia pine-------	---	---	
	northern red oak----	45	30	
	eastern white pine--	---	---	
CkF:				
Cleveland, windswept----	eastern white pine--	---	---	---
	Virginia pine-------	---	---	
	chestnut oak--------	40	26	
	northern red oak----	---	---	
	hickory-------------	---	---	
	pitch pine----------	---	---	
	scarlet oak---------	---	---	
Rock outcrop------------	---	---	---	---
Peaks, windswept--------	chestnut oak--------	---	---	---
	Virginia pine-------	---	---	
	northern red oak----	45	30	
	eastern white pine--	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CmD:				
Cliffield, very stony---	chestnut oak--------	50	34	eastern white pine,
	black locust--------	---	---	scarlet oak,
	Virginia pine-------	---	---	chestnut oak
	northern red oak----	---	---	
	scarlet oak---------	50	34	
	black oak-----------	---	---	
	pitch pine----------	---	---	
	shortleaf pine------	---	---	
	white oak-----------	---	---	
Cowee, very stony-------	eastern white pine--	78	139	eastern white pine,
	yellow-poplar-------	80	71	shortleaf pine
	chestnut oak--------	55	38	
	Virginia pine-------	63	96	
	pitch pine----------	52	72	
	scarlet oak---------	54	38	
	shortleaf pine------	---	---	
	white oak-----------	---	---	
	northern red oak----	---	---	
	black oak-----------	---	---	
CnE:				
Cliffield, very rocky---	chestnut oak--------	50	34	eastern white pine,
	black locust--------	---	---	scarlet oak,
	Virginia pine-------	---	---	chestnut oak
	northern red oak----	---	---	
	scarlet oak---------	50	34	
	black oak-----------	---	---	
	pitch pine----------	---	---	
	shortleaf pine------	---	---	
	white oak-----------	---	---	
Cowee, very rocky-------	eastern white pine--	78	139	eastern white pine,
	yellow-poplar-------	80	71	shortleaf pine
	chestnut oak--------	55	38	
	Virginia pine-------	63	96	
	pitch pine----------	52	72	
	scarlet oak---------	54	38	
	shortleaf pine------	---	---	
	white oak-----------	---	---	
	northern red oak----	---	---	
	black oak-----------	---	---	
CoD, CoE:				
Cliffield, rubbly-------	chestnut oak--------	50	34	eastern white pine,
	black locust--------	---	---	scarlet oak,
	Virginia pine-------	---	---	chestnut oak
	northern red oak----	---	---	
	scarlet oak---------	50	34	
	black oak-----------	---	---	
	pitch pine----------	---	---	
	shortleaf pine------	---	---	
	white oak-----------	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Sauratown, rubbly-------	chestnut oak--------	48	32	eastern white pine, scarlet oak, chestnut oak
	Virginia pine-------	63	96	
	eastern white pine--	---	---	
	white oak-----------	---	---	
	scarlet oak---------	---	---	
	pitch pine----------	---	---	
	Table Mountain pine-	---	---	
CrB2: Clifford, moderately eroded-----------------	yellow-poplar-------	84	79	eastern white pine, loblolly pine, northern red oak, shortleaf pine, white oak, yellow-poplar
	loblolly pine-------	83	116	
	Virginia pine-------	71	110	
	northern red oak----	81	63	
	white oak-----------	78	60	
	shortleaf pine------	67	103	
CsA: Colvard-----------------	yellow-poplar-------	93	95	eastern white pine, yellow-poplar
	shortleaf pine------	---	---	
	eastern white pine--	---	---	
	Virginia pine-------	75	115	
	black oak-----------	---	---	
	northern red oak----	---	---	
	American sycamore---	---	---	
	white ash-----------	---	---	
	river birch---------	---	---	
	white oak-----------	---	---	
Suches------------------	yellow-poplar-------	98	104	black walnut, eastern white pine, yellow-poplar
	loblolly pine-------	85	120	
	shortleaf pine------	---	---	
	eastern white pine--	---	---	
	northern red oak----	---	---	
	black walnut--------	---	---	
CwC, CwD, CwE: Cowee, stony------------	eastern white pine--	78	139	eastern white pine, shortleaf pine
	yellow-poplar-------	80	71	
	chestnut oak--------	55	38	
	Virginia pine-------	63	96	
	pitch pine----------	52	72	
	scarlet oak---------	54	38	
	shortleaf pine------	---	---	
	white oak-----------	---	---	
	northern red oak----	---	---	
	black oak-----------	---	---	
CxF: Cowee, rocky------------	eastern white pine--	78	139	eastern white pine, shortleaf pine
	yellow-poplar-------	80	71	
	chestnut oak--------	55	38	
	Virginia pine-------	63	96	
	pitch pine----------	52	72	
	scarlet oak---------	54	38	
	shortleaf pine------	---	---	
	white oak-----------	---	---	
	northern red oak----	---	---	
	black oak-----------	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Saluda, rocky	pitch pine	---	---	chestnut oak, eastern white pine, scarlet oak
	eastern white pine	---	---	
	yellow-poplar	---	---	
	shortleaf pine	---	---	
	Virginia pine	---	---	
	chestnut oak	---	---	
Evard, rocky	eastern white pine	91	168	eastern white pine, shortleaf pine, white oak, chestnut oak
	yellow-poplar	95	98	
	white oak	75	57	
	Virginia pine	70	109	
	shortleaf pine	73	116	
	southern red oak	75	57	
	pitch pine	---	---	
	hickory	---	---	
	northern red oak	---	---	
DAM:				
Dam	---	---	---	---
DeF:				
Devotion, very rocky	eastern white pine	78	139	eastern white pine, shortleaf pine, yellow-poplar
	yellow-poplar	97	102	
	shortleaf pine	---	---	
	northern red oak	80	62	
	white oak	70	52	
	scarlet oak	68	50	
	chestnut oak	69	51	
	black oak	71	53	
	pitch pine	---	---	
Rhodhiss, very rocky	shortleaf pine	75	120	eastern white pine, shortleaf pine, yellow-poplar
	yellow-poplar	98	104	
	eastern white pine	86	157	
	Virginia pine	78	119	
	northern red oak	---	---	
	southern red oak	---	---	
	white oak	---	---	
	hickory	---	---	
Bannertown, very rocky	chestnut oak	70	52	eastern white pine, shortleaf pine
	eastern white pine	81	146	
	Virginia pine	62	95	
	northern red oak	---	---	
	shortleaf pine	57	82	
	pitch pine	57	---	
	scarlet oak	---	---	
DrB:				
Dillard	eastern white pine	84	153	eastern white pine, yellow-poplar, black walnut
	yellow-poplar	88	86	
	shortleaf pine	83	136	
	Virginia pine	---	---	
	loblolly pine	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
EcC, EcD, EcE:				
Evard, stony	eastern white pine	91	168	eastern white pine, shortleaf pine, white oak, chestnut oak
	yellow-poplar	95	98	
	white oak	75	57	
	Virginia pine	70	109	
	shortleaf pine	73	116	
	southern red oak	75	57	
	pitch pine	---	---	
	hickory	---	---	
	northern red oak	---	---	
Cowee, stony	eastern white pine	78	139	eastern white pine, shortleaf pine
	yellow-poplar	80	71	
	chestnut oak	55	38	
	Virginia pine	63	96	
	pitch pine	52	72	
	scarlet oak	54	38	
	shortleaf pine	---	---	
	white oak	---	---	
	northern red oak	---	---	
	black oak	---	---	
FeB2, FeC2, FeD2:				
Fairview, moderately eroded	loblolly pine	79	108	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	shortleaf pine	68	106	
	yellow-poplar	90	90	
	northern red oak	---	---	
	Virginia pine	---	---	
	white oak	---	---	
	hickory	---	---	
FfD:				
Fairview, stony	loblolly pine	79	108	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	shortleaf pine	68	106	
	yellow-poplar	90	90	
	northern red oak	---	---	
	Virginia pine	---	---	
	white oak	---	---	
	hickory	---	---	
FnB2, FnC2:				
Fairview, moderately eroded	loblolly pine	79	108	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	shortleaf pine	68	106	
	yellow-poplar	90	90	
	northern red oak	---	---	
	Virginia pine	---	---	
	white oak	---	---	
	hickory	---	---	
FrC2, FrD2:				
Fairview, moderately eroded	loblolly pine	79	108	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	shortleaf pine	68	106	
	yellow-poplar	90	90	
	northern red oak	---	---	
	Virginia pine	---	---	
	white oak	---	---	
	hickory	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Siloam, moderately eroded	shortleaf pine	60	88	shortleaf pine
	loblolly pine	---	---	
	white oak	---	---	
	post oak	---	---	
	sweetgum	---	---	
	southern red oak	---	---	
	hickory	---	---	
	Virginia pine	---	---	
FsE:				
Fairview	loblolly pine	79	108	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	shortleaf pine	68	106	
	yellow-poplar	90	90	
	northern red oak	---	---	
	Virginia pine	---	---	
	white oak	---	---	
	hickory	---	---	
Stott Knob	eastern white pine	78	139	chestnut oak, eastern white pine, scarlet oak, shortleaf pine
	yellow-poplar	80	71	
	Virginia pine	63	96	
	northern red oak	---	---	
	scarlet oak	54	38	
	chestnut oak	55	38	
	black oak	---	---	
	shortleaf pine	---	---	
	white oak	---	---	
FtE:				
Fairview, stony	loblolly pine	79	108	eastern white pine, loblolly pine, shortleaf pine, yellow-poplar
	shortleaf pine	68	106	
	yellow-poplar	90	90	
	northern red oak	---	---	
	Virginia pine	---	---	
	white oak	---	---	
	hickory	---	---	
Stott Knob, stony	eastern white pine	78	139	chestnut oak, eastern white pine, scarlet oak, shortleaf pine
	yellow-poplar	80	71	
	Virginia pine	63	96	
	northern red oak	---	---	
	scarlet oak	54	38	
	chestnut oak	55	38	
	black oak	---	---	
	shortleaf pine	---	---	
	white oak	---	---	
FuB2, FuC2:				
Fairview, moderately eroded	---	---	---	---
Urban land	---	---	---	---

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
GrE:				
Greenlee, rubbly	yellow-poplar	101	109	eastern white pine, northern red oak, yellow-poplar
	eastern hemlock	---	---	
	white oak	80	62	
	northern red oak	---	---	
	red maple	---	---	
	eastern white pine	98	182	
	black locust	---	---	
HaA:				
Hatboro, drained	yellow-poplar	100	107	green ash, yellow-poplar
	river birch	---	---	
	American sycamore	---	---	
	water oak	94	91	
	green ash	89	64	
	willow oak	94	91	
	white ash	---	---	
Hatboro, undrained	yellow-poplar	100	107	green ash, yellow-poplar
	river birch	---	---	
	American sycamore	---	---	
	water oak	94	91	
	green ash	89	64	
	willow oak	94	91	
	white ash	---	---	
MsC, MsD, MsE:				
Meadowfield, very stony	chestnut oak	50	34	chestnut oak, scarlet oak, shortleaf pine
	scarlet oak	50	34	
	northern red oak	---	---	
	Virginia pine	---	---	
	black locust	---	---	
	black oak	---	---	
	white oak	---	---	
	shortleaf pine	---	---	
	pitch pine	---	---	
Stott Knob, very stony	eastern white pine	78	139	chestnut oak, eastern white pine, scarlet oak, shortleaf pine
	yellow-poplar	80	71	
	Virginia pine	63	96	
	northern red oak	---	---	
	scarlet oak	54	38	
	chestnut oak	55	38	
	black oak	---	---	
	shortleaf pine	---	---	
	white oak	---	---	
Pt:				
Pits, quarry	---	---	---	---
RbD:				
Rhodhiss, very rocky	shortleaf pine	75	120	eastern white pine, shortleaf pine, yellow-poplar
	yellow-poplar	98	104	
	eastern white pine	86	157	
	Virginia pine	78	119	
	northern red oak	---	---	
	southern red oak	---	---	
	white oak	---	---	
	hickory	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Bannertown, very rocky--	chestnut oak--------	70	52	eastern white pine, shortleaf pine
	eastern white pine--	81	146	
	Virginia pine-------	62	95	
	northern red oak----	---	---	
	shortleaf pine------	57	82	
	pitch pine----------	57	---	
	scarlet oak---------	---	---	
RrE:				
Rhodhiss, very bouldery-	shortleaf pine------	75	120	eastern white pine, shortleaf pine, yellow-poplar
	yellow-poplar-------	98	104	
	eastern white pine--	86	157	
	Virginia pine-------	78	119	
	northern red oak----	---	---	
	southern red oak----	---	---	
	white oak-----------	---	---	
	hickory-------------	---	---	
Bannertown, very bouldery---------------	chestnut oak--------	70	52	eastern white pine, shortleaf pine
	eastern white pine--	81	146	
	Virginia pine-------	62	95	
	northern red oak----	---	---	
	shortleaf pine------	57	82	
	pitch pine----------	57	---	
	scarlet oak---------	---	---	
Rock outcrop------------	---	---	---	---
RsB, RsC, RsD, RsE:				
Rhodhiss, stony---------	shortleaf pine------	75	120	eastern white pine, shortleaf pine, yellow-poplar
	yellow-poplar-------	98	104	
	eastern white pine--	86	157	
	Virginia pine-------	78	119	
	northern red oak----	---	---	
	southern red oak----	---	---	
	white oak-----------	---	---	
	hickory-------------	---	---	
Stott Knob, stony-------	eastern white pine--	78	139	chestnut oak, eastern white pine, scarlet oak, shortleaf pine
	yellow-poplar-------	80	71	
	Virginia pine-------	63	96	
	northern red oak----	---	---	
	scarlet oak---------	54	38	
	chestnut oak--------	55	38	
	black oak-----------	---	---	
	shortleaf pine------	---	---	
	white oak-----------	---	---	
SrC, SrE:				
Siloam------------------	shortleaf pine------	60	88	shortleaf pine
	loblolly pine-------	---	---	
	white oak-----------	---	---	
	post oak------------	---	---	
	sweetgum------------	---	---	
	southern red oak----	---	---	
	hickory-------------	---	---	
	Virginia pine-------	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Redbrush	shortleaf pine	---	---	eastern white pine, shortleaf pine, white oak
	loblolly pine	---	---	
	Virginia pine	---	---	
	northern red oak	---	---	
	white oak	---	---	
StC, StD, StE:				
Stott Knob, stony	eastern white pine	78	139	chestnut oak, eastern white pine, scarlet oak, shortleaf pine
	yellow-poplar	80	71	
	Virginia pine	63	96	
	northern red oak	---	---	
	scarlet oak	54	38	
	chestnut oak	55	38	
	black oak	---	---	
	shortleaf pine	---	---	
	white oak	---	---	
TaD:				
Tate, extremely stony	yellow-poplar	92	83	eastern white pine, yellow-poplar
	eastern white pine	89	164	
	northern red oak	---	---	
	black locust	---	---	
	eastern hemlock	---	---	
	white oak	---	---	
TcC:				
Tate	yellow-poplar	92	83	eastern white pine, yellow-poplar
	eastern white pine	89	164	
	northern red oak	---	---	
	black locust	---	---	
	eastern hemlock	---	---	
	white oak	---	---	
Colvard	yellow-poplar	93	95	eastern white pine, yellow-poplar
	shortleaf pine	---	---	
	eastern white pine	---	---	
	Virginia pine	75	115	
	black oak	---	---	
	northern red oak	---	---	
	American sycamore	---	---	
	white ash	---	---	
	river birch	---	---	
	white oak	---	---	
ToB:				
Toast, rocky	shortleaf pine	68	106	loblolly pine, shortleaf pine, yellow-poplar
	loblolly pine	---	---	
	Virginia pine	---	---	
	white oak	62	45	
	southern red oak	70	---	
	northern red oak	64	47	
TtC:				
Toast, very rocky	shortleaf pine	68	106	loblolly pine, shortleaf pine
	loblolly pine	---	---	
	Virginia pine	---	---	
	white oak	62	45	
	southern red oak	70	---	
	northern red oak	64	47	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Bannertown, very rocky--	chestnut oak--------	70	52	loblolly pine,
	eastern white pine--	81	146	shortleaf pine,
	Virginia pine-------	62	95	yellow-poplar
	northern red oak----	---	---	
	shortleaf pine------	57	82	
	pitch pine----------	57	---	
	scarlet oak---------	---	---	
TuB:				
Toast, rocky------------	---	---	---	---
Urban land--------------	---	---	---	---
TwC:				
Toast, very rocky-------	---	---	---	---
Urban land--------------	---	---	---	---
Bannertown, very rocky--	---	---	---	---
Ud:				
Udorthents, loamy-------	---	---	---	---
Ur:				
Urban land--------------	---	---	---	---
WfB2, WfC2:				
Woolwine, moderately eroded-----------------	shortleaf pine------	67	103	eastern white pine,
	Virginia pine-------	76	117	shortleaf pine,
	scarlet oak---------	73	55	yellow-poplar
	white oak-----------	---	---	
	chestnut oak--------	---	---	
	black oak-----------	---	---	
Fairview, moderately eroded-----------------	loblolly pine-------	79	108	eastern white pine,
	shortleaf pine------	68	106	shortleaf pine,
	yellow-poplar-------	90	90	yellow-poplar
	northern red oak----	---	---	
	Virginia pine-------	---	---	
	white oak-----------	---	---	
	hickory-------------	---	---	
Westfield, moderately eroded-----------------	shortleaf pine------	---	---	eastern white pine,
	Virginia pine-------	---	---	shortleaf pine,
	yellow-poplar-------	---	---	yellow-poplar
	northern red oak----	---	---	
	white oak-----------	---	---	
	scarlet oak---------	---	---	
	chestnut oak--------	---	---	
WoD, WoE:				
Woolwine, stony---------	shortleaf pine------	67	103	eastern white pine,
	Virginia pine-------	76	117	shortleaf pine,
	scarlet oak---------	73	55	yellow-poplar
	white oak-----------	---	---	
	chestnut oak--------	---	---	
	black oak-----------	---	---	

Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Fairview, stony---------	loblolly pine-------	79	108	eastern white pine, shortleaf pine, yellow-poplar
	shortleaf pine------	68	106	
	yellow-poplar-------	90	90	
	northern red oak----	---	---	
	Virginia pine-------	---	---	
	white oak-----------	---	---	
	hickory-------------	---	---	
Westfield, stony--------	shortleaf pine------	---	---	eastern white pine, shortleaf pine, yellow-poplar
	Virginia pine-------	---	---	
	yellow-poplar-------	---	---	
	northern red oak----	---	---	
	white oak-----------	---	---	
	scarlet oak---------	---	---	
	chestnut oak--------	---	---	

Haul Roads, Log Landings, and Soil Rutting on Forestland

(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	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
ArA:						
Arkaqua, undrained	Severe		Poorly suited		Moderate	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
BaC:						
Bandana	Severe		Poorly suited		Moderate	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
			Sandiness	0.50		
			Wetness	0.50		
Tate	Moderate		Moderately suited		Severe	
	Low strength	0.50	Slope	0.50	Low strength	1.00
			Low strength	0.50		
Nikwasi, undrained	Severe		Poorly suited		Moderate	
	Flooding	1.00	Ponding	1.00	Low strength	0.50
	Wetness	1.00	Flooding	1.00		
			Wetness	0.50		
BbB:						
Braddock	Slight		Well suited		Moderate	
					Low strength	0.50
BbC:						
Braddock	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
BbD:						
Braddock	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
BcB:						
Braddock	Slight		Well suited		Moderate	
					Low strength	0.50
BdC:						
Braddock, stony	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
BdD:						
Braddock, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
BpC:						
Braddock, rubbly	Severe		Poorly suited		Slight	
	Stoniness	1.00	Rock fragments	1.00	Strength	0.10
			Slope	0.50		
Pilot Mountain, rubbly	Severe		Poorly suited		Slight	
	Stoniness	1.00	Rock fragments	1.00	Strength	0.10
			Slope	0.50		

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
BpD:						
Braddock, rubbly----	Severe		Poorly suited		Slight	
	Stoniness	1.00	Rock fragments	1.00	Strength	0.10
	Slope	0.50	Slope	1.00		
Pilot Mountain, rubbly-------------	Severe		Poorly suited		Slight	
	Stoniness	1.00	Rock fragments	1.00	Strength	0.10
	Slope	0.50	Slope	1.00		
BrD:						
Brevard, very bouldery-----------	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
			Rock fragments	0.50		
Greenlee, very bouldery-----------	Severe		Poorly suited		Slight	
	Stoniness	1.00	Slope	1.00	Strength	0.10
	Slope	0.50	Rock fragments	0.50		
BrE:						
Brevard, very bouldery-----------	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
			Rock fragments	0.50		
Greenlee, very bouldery-----------	Severe		Poorly suited		Slight	
	Slope	1.00	Slope	1.00	Strength	0.10
			Rock fragments	0.50		
CeD:						
Chestnut, very rocky	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Restrictive layer	0.50				
Peaks, very rocky---	Severe		Poorly suited		Moderate	
	Restrictive layer	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50				
CeE:						
Chestnut, very rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Peaks, very rocky---	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
CfF:						
Chestnut, very rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Peaks, very rocky---	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Tuckasegee, very rocky--------------	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
ChE:						
Cleveland, windswept	Severe		Poorly suited		Moderate	
	Restrictive layer	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Rock fragments	0.50		
Rock outcrop	Not rated		Not rated		Not rated	
Peaks, windswept	Severe		Poorly suited		Moderate	
	Restrictive layer	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Rock fragments	0.50		
CkF:						
Cleveland, windswept	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
	Stoniness	0.50	Rock fragments	1.00		
Rock outcrop	Not rated		Not rated		Not rated	
Peaks, windswept	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
	Stoniness	0.50	Rock fragments	1.00		
CmD:						
Cliffield, very stony	Severe		Poorly suited		Moderate	
	Restrictive layer	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50				
Cowee, very stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
CnE:						
Cliffield, very rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Cowee, very rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
CoD:						
Cliffield, rubbly	Severe		Poorly suited		Slight	
	Stoniness	1.00	Rock fragments	1.00	Strength	0.10
	Restrictive layer	1.00	Slope	1.00		
	Slope	0.50				
Sauratown, rubbly	Severe		Poorly suited		Slight	
	Stoniness	1.00	Rock fragments	1.00	Strength	0.10
	Restrictive layer	1.00	Slope	1.00		
	Slope	0.50				
CoE:						
Cliffield, rubbly	Severe		Poorly suited		Slight	
	Slope	1.00	Rock fragments	1.00	Strength	0.10
	Stoniness	1.00	Slope	1.00		

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
Sauratown, rubbly	Severe		Poorly suited		Slight	
	Slope	1.00	Rock fragments	1.00	Strength	0.10
	Stoniness	1.00	Slope	1.00		
CrB2:						
Clifford, moderately eroded	Moderate		Well suited		Moderate	
	Low strength	0.50			Low strength	0.50
CsA:						
Colvard	Severe		Poorly suited		Moderate	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
Suches	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
CwC:						
Cowee, stony	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
CwD:						
Cowee, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
CwE:						
Cowee, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
CxF:						
Cowee, rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Saluda, rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Evard, rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
	Low strength	0.50				
DAM:						
Dam	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Rhodhiss, very rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Bannertown, very rocky	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
DrB:						
Dillard	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
EcC:						
Evard, stony	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
Cowee, stony	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
EcD:						
Evard, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
Cowee, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
EcE:						
Evard, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
	Low strength	0.50				
Cowee, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
FeB2:						
Fairview, moderately eroded	Slight		Well suited		Moderate	
					Low strength	0.50
FeC2:						
Fairview, moderately eroded	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
FeD2:						
Fairview, moderately eroded	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
FfD:						
Fairview, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
FnB2:						
Fairview, moderately eroded	Slight		Well suited		Moderate	
					Low strength	0.50
FnC2:						
Fairview, moderately eroded	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
FrC2:						
Fairview, moderately eroded	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
Siloam, moderately eroded	Moderate		Moderately suited		Moderate	
	Restrictive layer	0.50	Slope	0.50	Low strength	0.50

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
FrD2:						
Fairview, moderately eroded	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
Siloam, moderately eroded	Severe		Poorly suited		Moderate	
	Restrictive layer	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50				
FsE:						
Fairview	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Stott Knob	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
FtE:						
Fairview, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Stott Knob, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
FuB2:						
Fairview, moderately eroded	Slight		Well suited		Moderate	
					Low strength	0.50
Urban land	Not rated		Not rated		Not rated	
FuC2:						
Fairview, moderately eroded	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
Urban land	Not rated		Not rated		Not rated	
GrE:						
Greenlee, rubbly	Severe		Poorly suited		Slight	
	Slope	1.00	Rock fragments	1.00	Strength	0.10
	Stoniness	1.00	Slope	1.00		
HaA:						
Hatboro, drained	Severe		Poorly suited		Moderate	
	Flooding	1.00	Ponding	1.00	Low strength	0.50
	Wetness	1.00	Flooding	1.00		
	Sandiness	0.50	Wetness	1.00		
Hatboro, undrained	Severe		Poorly suited		Moderate	
	Flooding	1.00	Ponding	1.00	Low strength	0.50
	Wetness	1.00	Flooding	1.00		
	Sandiness	0.50	Wetness	1.00		

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
MsC:						
Meadowfield, very stony	Moderate		Moderately suited		Moderate	
	Restrictive layer	0.50	Slope	0.50	Low strength	0.50
Stott Knob, very stony	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
MsD:						
Meadowfield, very stony	Severe		Poorly suited		Moderate	
	Restrictive layer	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50				
Stott Knob, very stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Restrictive layer	0.50				
MsE:						
Meadowfield, very stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Stott Knob, very stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Pt:						
Pits, quarry	Not rated		Not rated		Not rated	
RbD:						
Rhodhiss, very rocky	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
Bannertown, very rocky	Moderate		Poorly suited		Moderate	
	Restrictive layer	0.50	Slope	1.00	Low strength	0.50
	Slope	0.50				
RrE:						
Rhodhiss, very bouldery	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
			Rock fragments	0.50		
Bannertown, very bouldery	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
			Rock fragments	0.50		
Rock outcrop	Not rated		Not rated		Not rated	

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
RsB:						
Rhodhiss, stony	Slight		Well suited		Moderate	
					Low strength	0.50
Stott Knob, stony	Slight		Well suited		Moderate	
					Low strength	0.50
RsC:						
Rhodhiss, stony	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
Stott Knob, stony	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
RsD:						
Rhodhiss, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
Stott Knob, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Restrictive layer	0.50				
RsE:						
Rhodhiss, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Stott Knob, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
SrC:						
Siloam	Moderate		Moderately suited		Moderate	
	Restrictive layer	0.50	Slope	0.50	Low strength	0.50
Redbrush	Moderate		Moderately suited		Moderate	
	Restrictive layer	0.50	Slope	0.50	Low strength	0.50
SrE:						
Siloam	Severe		Poorly suited		Moderate	
	Restrictive layer	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50				
Redbrush	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Restrictive layer	0.50				
StC:						
Stott Knob, stony	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
StD:						
Stott Knob, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Restrictive layer	0.50				
StE:						
Stott Knob, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
TaD:						
Tate, extremely stony	Moderate		Poorly suited		Moderate	
	Stoniness	0.50	Slope	1.00	Low strength	0.50
	Slope	0.50	Rock fragments	0.50		
TcC:						
Tate	Moderate		Moderately suited		Severe	
	Low strength	0.50	Slope	0.50	Low strength	1.00
			Low strength	0.50		
Colvard	Severe		Poorly suited		Moderate	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
ToB:						
Toast, rocky	Slight		Well suited		Moderate	
					Low strength	0.50
TtC:						
Toast, very rocky	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
Bannertown, very rocky	Moderate		Moderately suited		Moderate	
	Restrictive layer	0.50	Slope	0.50	Low strength	0.50
TuB:						
Toast, rocky	Slight		Well suited		Moderate	
					Low strength	0.50
Urban land	Not rated		Not rated		Not rated	
TwC:						
Toast, very rocky	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
Urban land	Not rated		Not rated		Not rated	
Bannertown, very rocky	Moderate		Moderately suited		Moderate	
	Restrictive layer	0.50	Slope	0.50	Low strength	0.50
Ud:						
Udorthents, loamy	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
Ur:						
Urban land	Not rated		Not rated		Not rated	
WfB2:						
Woolwine, moderately eroded	Slight		Well suited		Moderate	
					Low strength	0.50

Haul Roads, Log Landings, and Soil Rutting on Forestland—Continued

Map symbol and soil name	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
Fairview, moderately eroded	Slight		Well suited		Moderate	
					Low strength	0.50
Westfield, moderately eroded	Slight		Well suited		Moderate	
					Low strength	0.50
WfC2:						
Woolwine, moderately eroded	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
Fairview, moderately eroded	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
Westfield, moderately eroded	Slight		Moderately suited		Moderate	
			Slope	0.50	Low strength	0.50
WoD:						
Woolwine, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
Fairview, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
Westfield, stony	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
WoE:						
Woolwine, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
	Low strength	0.50				
Fairview, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
Westfield, stony	Severe		Poorly suited		Moderate	
	Slope	1.00	Slope	1.00	Low strength	0.50
	Low strength	0.50				

Hazard of Erosion and Suitability for Roads on Forestland

(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	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
ArA:						
Arkaqua, undrained	Slight		Slight		Poorly suited	
					Flooding	1.00
BaC:						
Bandana	Slight		Slight		Poorly suited	
					Flooding	1.00
					Sandiness	0.50
					Wetness	0.50
Tate	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
					Low strength	0.50
Nikwasi, undrained	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	0.50
BbB:						
Braddock	Slight		Slight		Well suited	
BbC:						
Braddock	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
BbD:						
Braddock	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
BcB:						
Braddock	Slight		Slight		Well suited	
BdC:						
Braddock, stony	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
BdD:						
Braddock, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
BpC:						
Braddock, rubbly	Slight		Moderate		Poorly suited	
			Slope/erodibility	0.50	Rock fragments	1.00
					Slope	0.50
Pilot Mountain, rubbly	Slight		Moderate		Poorly suited	
			Slope/erodibility	0.50	Rock fragments	1.00
					Slope	0.50
BpD:						
Braddock, rubbly	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Rock fragments	1.00
					Slope	1.00

Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	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
Pilot Mountain, rubbly	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Rock fragments	1.00
					Slope	1.00
BrD:						
Brevard, very bouldery	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	0.50
Greenlee, very bouldery	Moderate		Moderate		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
					Rock fragments	0.50
BrE:						
Brevard, very bouldery	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	0.50
Greenlee, very bouldery	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	0.50
CeD:						
Chestnut, very rocky	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Peaks, very rocky	Moderate		Moderate		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
CeE:						
Chestnut, very rocky	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Peaks, very rocky	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
CfF:						
Chestnut, very rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Peaks, very rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Tuckasegee, very rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
ChE:						
Cleveland, windswept	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	0.50
Rock outcrop	Not rated		Not rated		Not rated	

Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	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
Peaks, windswept----	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	0.50
CkF:						
Cleveland, windswept	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	1.00
Rock outcrop--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	1.00
CmD:						
Cliffield, very stony--------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Cowee, very stony---	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
CnE:						
Cliffield, very rocky--------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Cowee, very rocky---	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
CoD, CoE:						
Cliffield, rubbly---	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Rock fragments	1.00
					Slope	1.00
Sauratown, rubbly---	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Rock fragments	1.00
					Slope	1.00
CrB2:						
Clifford, moderately eroded-------------	Slight		Slight		Well suited	
CsA:						
Colvard-------------	Slight		Slight		Poorly suited	
					Flooding	1.00
Suches--------------	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
CwC:						
Cowee, stony--------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
CwD, CwE:						
Cowee, stony--------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00

Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	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
CxF:						
Cowee, rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Saluda, rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Evard, rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
DAM:						
Dam	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Rhodhiss, very rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
Bannertown, very rocky	Very severe		Severe		Poorly suited	
	Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
DrB:						
Dillard	Slight		Slight		Moderately suited	
					Low strength	0.50
EcC:						
Evard, stony	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Cowee, stony	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
EcD, EcE:						
Evard, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Cowee, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
FeB2:						
Fairview, moderately eroded	Slight		Slight		Well suited	
FeC2:						
Fairview, moderately eroded	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
FeD2:						
Fairview, moderately eroded	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00

Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	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
FfD:						
Fairview, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
FnB2:						
Fairview, moderately eroded	Slight		Slight		Well suited	
FnC2:						
Fairview, moderately eroded	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
FrC2:						
Fairview, moderately eroded	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Siloam, moderately eroded	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
FrD2:						
Fairview, moderately eroded	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Siloam, moderately eroded	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
FsE:						
Fairview	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Stott Knob	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
FtE:						
Fairview, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Stott Knob, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
FuB2:						
Fairview, moderately eroded	Slight		Slight		Well suited	
Urban land	Not rated		Not rated		Not rated	
FuC2:						
Fairview, moderately eroded	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Urban land	Not rated		Not rated		Not rated	

Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	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
GrE:						
Greenlee, rubbly----	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Rock fragments	1.00
					Slope	1.00
HaA:						
Hatboro, drained----	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
Hatboro, undrained--	Slight		Slight		Poorly suited	
					Ponding	1.00
					Flooding	1.00
					Wetness	1.00
MsC:						
Meadowfield, very stony--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Stott Knob, very stony--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
MsD, MsE:						
Meadowfield, very stony--------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Stott Knob, very stony--------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Pt:						
Pits, quarry--------	Not rated		Not rated		Not rated	
RbD:						
Rhodhiss, very rocky	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Bannertown, very rocky--------------	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
RrE:						
Rhodhiss, very bouldery-----------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	0.50
Bannertown, very bouldery-----------	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	0.50
Rock outcrop--------	Not rated		Not rated		Not rated	

Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	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
RsB:						
Rhodhiss, stony	Slight		Slight		Well suited	
Stott Knob, stony	Slight		Slight		Well suited	
RsC:						
Rhodhiss, stony	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Stott Knob, stony	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
RsD, RsE:						
Rhodhiss, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Stott Knob, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
SrC:						
Siloam	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Redbrush	Slight		Severe		Moderately suited	
			Slope/erodibility	0.95	Slope	0.50
SrE:						
Siloam	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Redbrush	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
StC:						
Stott Knob, stony	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
StD, StE:						
Stott Knob, stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
TaD:						
Tate, extremely stony	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Rock fragments	0.50
TcC:						
Tate	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
					Low strength	0.50
Colvard	Slight		Slight		Poorly suited	
					Flooding	1.00
ToB:						
Toast, rocky	Slight		Slight		Well suited	
TtC:						
Toast, very rocky	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50

Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	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
Bannertown, very rocky	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
TuB:						
Toast, rocky	Slight		Slight		Well suited	
Urban land	Not rated		Not rated		Not rated	
TwC:						
Toast, very rocky	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Urban land	Not rated		Not rated		Not rated	
Bannertown, very rocky	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Ud:						
Udorthents, loamy	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
Ur:						
Urban land	Not rated		Not rated		Not rated	
WfB2:						
Woolwine, moderately eroded	Slight		Moderate		Well suited	
			Slope/erodibility	0.50		
Fairview, moderately eroded	Slight		Moderate		Well suited	
			Slope/erodibility	0.50		
Westfield, moderately eroded	Slight		Moderate		Well suited	
			Slope/erodibility	0.50		
WfC2:						
Woolwine, moderately eroded	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Fairview, moderately eroded	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50
Westfield, moderately eroded	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Slope	0.50

Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	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
WoD, WoE:						
Woolwine, stony-----	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Fairview, stony-----	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Westfield, stony----	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00

Forestland Planting and Harvesting

(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	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ArA:						
Arkaqua, undrained	Well suited		Well suited		Well suited	
BaC:						
Bandana	Moderately suited		Moderately suited		Moderately suited	
	Sandiness	0.50	Sandiness	0.50	Sandiness	0.50
Tate	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
Nikwasi, undrained	Well suited		Well suited		Poorly suited	
					Wetness	1.00
BbB:						
Braddock	Moderately suited		Moderately suited		Well suited	
	Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
BbC:						
Braddock	Moderately suited		Moderately suited		Well suited	
	Stickiness; high plasticity index	0.50	Slope	0.50		
			Stickiness; high plasticity index	0.50		
BbD:						
Braddock	Moderately suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.75	Slope	0.50
			Stickiness; high plasticity index	0.50		
BcB:						
Braddock	Moderately suited		Moderately suited		Well suited	
	Stickiness; high plasticity index	0.50	Rock fragments	0.50		
	Rock fragments	0.50	Stickiness; high plasticity index	0.50		
BdC:						
Braddock, stony	Moderately suited		Moderately suited		Well suited	
	Stickiness; high plasticity index	0.50	Rock fragments	0.50		
	Rock fragments	0.50	Slope	0.50		
			Stickiness; high plasticity index	0.50		
BdD:						
Braddock, stony	Moderately suited		Poorly suited		Moderately suited	
	Stickiness; high plasticity index	0.50	Slope	0.75	Slope	0.50
	Rock fragments	0.50	Rock fragments	0.50		
			Stickiness; high plasticity index	0.50		
BpC:						
Braddock, rubbly	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
			Slope	0.50		

Forestland Planting and Harvesting—Continued

Map symbol and soil name	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
Pilot Mountain, rubbly	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
			Slope	0.50		
BpD:						
Braddock, rubbly	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
			Slope	1.00	Slope	0.50
Pilot Mountain, rubbly	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
			Slope	1.00	Slope	0.50
BrD:						
Brevard, very bouldery	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Rock fragments	0.50
			Rock fragments	0.50		
Greenlee, very bouldery	Moderately suited		Poorly suited		Moderately suited	
	Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
			Slope	0.75		
BrE:						
Brevard, very bouldery	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
			Rock fragments	0.50	Rock fragments	0.50
Greenlee, very bouldery	Moderately suited		Unsuited		Poorly suited	
	Rock fragments	0.50	Slope	1.00	Slope	1.00
	Slope	0.50	Rock fragments	0.75	Rock fragments	0.50
CeD:						
Chestnut, very rocky	Well suited		Poorly suited		Well suited	
			Slope	0.75		
			Rock fragments	0.50		
Peaks, very rocky	Well suited		Poorly suited		Well suited	
			Slope	0.75		
			Rock fragments	0.50		
CeE:						
Chestnut, very rocky	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
Peaks, very rocky	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
CfF:						
Chestnut, very rocky	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
			Rock fragments	0.50		

Forestland Planting and Harvesting—Continued

Map symbol and soil name	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
Peaks, very rocky---	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
			Rock fragments	0.50		
Tuckasegee, very rocky--------------	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
ChE:						
Cleveland, windswept	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Slope	0.50
			Rock fragments	0.50	Rock fragments	0.50
Rock outcrop--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Slope	0.50
			Rock fragments	0.50	Rock fragments	0.50
CkF:						
Cleveland, windswept	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
Rock outcrop--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Rock fragments	0.50	Rock fragments	0.75	Rock fragments	1.00
CmD:						
Cliffield, very stony--------------	Well suited		Poorly suited		Well suited	
			Slope	0.75		
			Rock fragments	0.50		
Cowee, very stony---	Well suited		Poorly suited		Well suited	
			Slope	0.75		
			Rock fragments	0.50		
CnE:						
Cliffield, very rocky--------------	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
Cowee, very rocky---	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
CoD:						
Cliffield, rubbly---	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
			Slope	0.75		

Forestland Planting and Harvesting—Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Sauratown, rubbly---	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Rock fragments	1.00	Rock fragments	1.00
			Slope	0.75		
CoE:						
Cliffield, rubbly---	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
	Slope	0.50	Rock fragments	1.00	Slope	0.50
Sauratown, rubbly---	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
	Slope	0.50	Rock fragments	1.00	Slope	0.50
CrB2:						
Clifford, moderately eroded-------------	Well suited		Well suited		Well suited	
CsA:						
Colvard-------------	Well suited		Well suited		Well suited	
Suches--------------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
CwC:						
Cowee, stony--------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
CwD:						
Cowee, stony--------	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
CwE:						
Cowee, stony--------	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
CxF:						
Cowee, rocky--------	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
Saluda, rocky-------	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
Evard, rocky--------	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
			Rock fragments	0.50		
DAM:						
Dam-----------------	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
Rhodhiss, very rocky	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00

Forestland Planting and Harvesting—Continued

Map symbol and soil name	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
Bannertown, very rocky	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
			Rock fragments	0.50		
DrB:						
Dillard	Well suited		Well suited		Moderately suited	
					Low strength	0.50
EcC:						
Evard, stony	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
Cowee, stony	Well suited		Moderately suited		Well suited	
			Slope	0.50		
EcD:						
Evard, stony	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
Cowee, stony	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
EcE:						
Evard, stony	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
Cowee, stony	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
FeB2:						
Fairview, moderately eroded	Well suited		Well suited		Well suited	
FeC2:						
Fairview, moderately eroded	Well suited		Moderately suited		Well suited	
			Slope	0.50		
FeD2:						
Fairview, moderately eroded	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
FfD:						
Fairview, stony	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
FnB2:						
Fairview, moderately eroded	Well suited		Moderately suited		Well suited	
			Rock fragments	0.50		

Forestland Planting and Harvesting—Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FnC2:						
Fairview, moderately eroded	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
FrC2:						
Fairview, moderately eroded	Well suited		Moderately suited		Well suited	
			Slope	0.50		
Siloam, moderately eroded	Well suited		Moderately suited		Well suited	
			Slope	0.50		
FrD2:						
Fairview, moderately eroded	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
Siloam, moderately eroded	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
FsE:						
Fairview	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
Stott Knob	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
FtE:						
Fairview, stony	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
Stott Knob, stony	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
FuB2:						
Fairview, moderately eroded	Well suited		Well suited		Well suited	
Urban land	Not rated		Not rated		Not rated	
FuC2:						
Fairview, moderately eroded	Well suited		Moderately suited		Well suited	
			Slope	0.50		
Urban land	Not rated		Not rated		Not rated	
GrE:						
Greenlee, rubbly	Poorly suited		Unsuited		Poorly suited	
	Rock fragments	0.75	Slope	1.00	Rock fragments	1.00
	Slope	0.50	Rock fragments	1.00	Slope	1.00

Forestland Planting and Harvesting—Continued

Map symbol and soil name	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
HaA:						
Hatboro, drained	Moderately suited		Moderately suited		Poorly suited	
	Sandiness	0.50	Sandiness	0.50	Wetness	1.00
					Sandiness	0.50
Hatboro, undrained	Moderately suited		Moderately suited		Poorly suited	
	Sandiness	0.50	Sandiness	0.50	Wetness	1.00
					Sandiness	0.50
MsC:						
Meadowfield, very stony	Well suited		Moderately suited		Well suited	
			Rock fragments	0.50		
			Slope	0.50		
Stott Knob, very stony	Well suited		Moderately suited		Well suited	
			Rock fragments	0.50		
			Slope	0.50		
MsD:						
Meadowfield, very stony	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
Stott Knob, very stony	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
MsE:						
Meadowfield, very stony	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
Stott Knob, very stony	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
Pt:						
Pits, quarry	Not rated		Not rated		Not rated	
RbD:						
Rhodhiss, very rocky	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
Bannertown, very rocky	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
RrE:						
Rhodhiss, very bouldery	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
			Rock fragments	0.50	Rock fragments	0.50

Forestland Planting and Harvesting—Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Bannertown, very bouldery	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
			Rock fragments	0.50	Rock fragments	0.50
Rock outcrop	Not rated		Not rated		Not rated	
RsB:						
Rhodhiss, stony	Well suited		Well suited		Well suited	
Stott Knob, stony	Well suited		Moderately suited		Well suited	
			Rock fragments	0.50		
RsC:						
Rhodhiss, stony	Well suited		Moderately suited		Well suited	
			Slope	0.50		
Stott Knob, stony	Well suited		Moderately suited		Well suited	
			Rock fragments	0.50		
			Slope	0.50		
RsD:						
Rhodhiss, stony	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
Stott Knob, stony	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
RsE:						
Rhodhiss, stony	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
Stott Knob, stony	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
SrC:						
Siloam	Well suited		Moderately suited		Well suited	
			Slope	0.50		
Redbrush	Poorly suited		Poorly suited		Well suited	
	Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
			Rock fragments	0.50		
			Slope	0.50		
SrE:						
Siloam	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Slope	0.50
Redbrush	Poorly suited		Unsuited		Moderately suited	
	Stickiness; high plasticity index	0.75	Slope	1.00	Slope	0.50
			Stickiness; high plasticity index	0.75		
			Rock fragments	0.50		

Forestland Planting and Harvesting—Continued

Map symbol and soil name	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
StC:						
Stott Knob, stony---	Well suited		Moderately suited		Well suited	
			Rock fragments	0.50		
			Slope	0.50		
StD:						
Stott Knob, stony---	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
StE:						
Stott Knob, stony---	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
TaD:						
Tate, extremely stony--------------	Moderately suited		Poorly suited		Moderately suited	
	Rock fragments	0.50	Rock fragments	0.75	Rock fragments	0.50
			Slope	0.75		
TcC:						
Tate----------------	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
Colvard-------------	Well suited		Well suited		Well suited	
ToB:						
Toast, rocky--------	Well suited		Well suited		Well suited	
TtC:						
Toast, very rocky---	Well suited		Moderately suited		Well suited	
			Slope	0.50		
Bannertown, very rocky--------------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
TuB:						
Toast, rocky--------	Well suited		Well suited		Well suited	
Urban land----------	Not rated		Not rated		Not rated	
TwC:						
Toast, very rocky---	Well suited		Moderately suited		Well suited	
			Slope	0.50		
Urban land----------	Not rated		Not rated		Not rated	
Bannertown, very rocky--------------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
Ud:						
Udorthents, loamy---	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50

Forestland Planting and Harvesting—Continued

Map symbol and soil name	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Ur:						
Urban land----------	Not rated		Not rated		Not rated	
WfB2:						
Woolwine, moderately eroded-------------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
Fairview, moderately eroded-------------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
Westfield, moderately eroded--	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
WfC2:						
Woolwine, moderately eroded-------------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
Fairview, moderately eroded-------------	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
Westfield, moderately eroded--	Well suited		Moderately suited		Well suited	
			Slope	0.50		
			Rock fragments	0.50		
WoD:						
Woolwine, stony-----	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
Fairview, stony-----	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
Westfield, stony----	Well suited		Poorly suited		Moderately suited	
			Slope	0.75	Slope	0.50
			Rock fragments	0.50		
WoE:						
Woolwine, stony-----	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
Fairview, stony-----	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		
Westfield, stony----	Moderately suited		Unsuited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Rock fragments	0.50		

Forestland Site Preparation

(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	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
ArA:				
Arkaqua, undrained	Well suited		Well suited	
BaC:				
Bandana	Well suited		Well suited	
Tate	Well suited		Well suited	
Nikwasi, undrained	Well suited		Unsuited	
			Wetness	1.00
BbB, BbC:				
Braddock	Well suited		Well suited	
BbD:				
Braddock	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
BcB:				
Braddock	Poorly suited		Well suited	
	Rock fragments	0.50		
BdC:				
Braddock, stony	Poorly suited		Well suited	
	Rock fragments	0.50		
BdD:				
Braddock, stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
	Rock fragments	0.50		
BpC:				
Braddock, rubbly	Unsuited		Unsuited	
	Rock fragments	1.00	Rock fragments	1.00
Pilot Mountain, rubbly	Unsuited		Unsuited	
	Rock fragments	1.00	Rock fragments	1.00
BpD:				
Braddock, rubbly	Unsuited		Unsuited	
	Rock fragments	1.00	Rock fragments	1.00
	Slope	0.50	Slope	0.50
Pilot Mountain, rubbly	Unsuited		Unsuited	
	Rock fragments	1.00	Rock fragments	1.00
	Slope	0.50	Slope	0.50

Forestland Site Preparation—Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BrD:				
Brevard, very bouldery-----------	Poorly suited		Poorly suited	
	Rock fragments	0.50	Slope	0.50
	Slope	0.50		
Greenlee, very bouldery-----------	Poorly suited		Poorly suited	
	Rock fragments	0.50	Slope	0.50
	Slope	0.50		
BrE:				
Brevard, very bouldery-----------	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
	Rock fragments	0.50		
Greenlee, very bouldery-----------	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
	Rock fragments	0.50		
CeD, CeE:				
Chestnut, very rocky	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Peaks, very rocky---	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
			Restrictive layer	0.50
CfF:				
Chestnut, very rocky	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
Peaks, very rocky---	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
			Restrictive layer	0.50
Tuckasegee, very rocky--------------	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
ChE:				
Cleveland, windswept	Poorly suited		Unsuited	
	Slope	0.50	Restrictive layer	1.00
	Rock fragments	0.50	Slope	0.50
Rock outcrop--------	Not rated		Not rated	
Peaks, windswept----	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
	Rock fragments	0.50	Restrictive layer	0.50

Forestland Site Preparation—Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
CkF:				
Cleveland, windswept	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
	Rock fragments	1.00	Restrictive layer	1.00
			Rock fragments	0.50
Rock outcrop--------	Not rated		Not rated	
Peaks, windswept----	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
	Rock fragments	1.00	Rock fragments	0.50
			Restrictive layer	0.50
CmD:				
Cliffield, very stony--------------	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
			Restrictive layer	0.50
Cowee, very stony---	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
CnE:				
Cliffield, very rocky--------------	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
			Restrictive layer	0.50
Cowee, very rocky---	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
CoD, CoE:				
Cliffield, rubbly---	Unsuited		Unsuited	
	Rock fragments	1.00	Rock fragments	1.00
	Slope	0.50	Slope	0.50
			Restrictive layer	0.50
Sauratown, rubbly---	Unsuited		Unsuited	
	Rock fragments	1.00	Rock fragments	1.00
	Slope	0.50	Slope	0.50
			Restrictive layer	0.50
CrB2:				
Clifford, moderately eroded-------------	Well suited		Well suited	
CsA:				
Colvard-------------	Well suited		Well suited	
Suches--------------	Well suited		Well suited	
CwC:				
Cowee, stony--------	Well suited		Well suited	
CwD, CwE:				
Cowee, stony--------	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50

Forestland Site Preparation—Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
CxF:				
Cowee, rocky	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
Saluda, rocky	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
Evard, rocky	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
DAM:				
Dam	Not rated		Not rated	
DeF:				
Devotion, very rocky	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
Rhodhiss, very rocky	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
Bannertown, very rocky	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
DrB:				
Dillard	Well suited		Well suited	
EcC:				
Evard, stony	Well suited		Well suited	
Cowee, stony	Well suited		Well suited	
EcD, EcE:				
Evard, stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Cowee, stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
FeB2, FeC2:				
Fairview, moderately eroded	Well suited		Well suited	
FeD2:				
Fairview, moderately eroded	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
FfD:				
Fairview, stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
FnB2, FnC2:				
Fairview, moderately eroded	Well suited		Well suited	
FrC2:				
Fairview, moderately eroded	Well suited		Well suited	

Forestland Site Preparation—Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
Siloam, moderately eroded	Well suited		Well suited	
FrD2:				
Fairview, moderately eroded	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Siloam, moderately eroded	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
FsE:				
Fairview	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Stott Knob	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
FtE:				
Fairview, stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Stott Knob, stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
FuB2, FuC2:				
Fairview, moderately eroded	Well suited		Well suited	
Urban land	Not rated		Not rated	
GrE:				
Greenlee, rubbly	Unsuited		Unsuited	
	Rock fragments	1.00	Slope	1.00
	Slope	1.00	Rock fragments	1.00
HaA:				
Hatboro, drained	Well suited		Unsuited	
			Wetness	1.00
Hatboro, undrained	Well suited		Unsuited	
			Wetness	1.00
MsC:				
Meadowfield, very stony	Well suited		Poorly suited	
			Restrictive layer	0.50
Stott Knob, very stony	Well suited		Well suited	
MsD, MsE:				
Meadowfield, very stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
			Restrictive layer	0.50

Forestland Site Preparation—Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Stott Knob, very stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Pt:				
Pits, quarry	Not rated		Not rated	
RbD:				
Rhodhiss, very rocky	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Bannertown, very rocky	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
RrE:				
Rhodhiss, very bouldery	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
	Rock fragments	0.50		
Bannertown, very bouldery	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
	Rock fragments	0.50		
Rock outcrop	Not rated		Not rated	
RsB, RsC:				
Rhodhiss, stony	Well suited		Well suited	
Stott Knob, stony	Well suited		Well suited	
RsD, RsE:				
Rhodhiss, stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Stott Knob, stony	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
SrC:				
Siloam	Well suited		Well suited	
Redbrush	Poorly suited		Well suited	
	Stickiness; high plasticity index	0.50		
SrE:				
Siloam	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Redbrush	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
	Stickiness; high plasticity index	0.50		

Forestland Site Preparation—Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
StC:				
Stott Knob, stony---	Well suited		Well suited	
StD, StE:				
Stott Knob, stony---	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
TaD:				
Tate, extremely stony--------------	Poorly suited		Poorly suited	
	Rock fragments	0.50	Rock fragments	0.50
	Slope	0.50	Slope	0.50
TcC:				
Tate----------------	Well suited		Well suited	
Colvard-------------	Well suited		Well suited	
ToB:				
Toast, rocky--------	Well suited		Well suited	
TtC:				
Toast, very rocky---	Well suited		Well suited	
Bannertown, very rocky--------------	Well suited		Well suited	
TuB:				
Toast, rocky--------	Well suited		Well suited	
Urban land----------	Not rated		Not rated	
TwC:				
Toast, very rocky---	Well suited		Well suited	
Urban land----------	Not rated		Not rated	
Bannertown, very rocky--------------	Well suited		Well suited	
Ud:				
Udorthents, loamy---	Well suited		Well suited	
Ur:				
Urban land----------	Not rated		Not rated	
WfB2, WfC2:				
Woolwine, moderately eroded-------------	Well suited		Well suited	
Fairview, moderately eroded-------------	Well suited		Well suited	
Westfield, moderately eroded--	Well suited		Well suited	

Forestland Site Preparation—Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
WoD, WoE:				
Woolwine, stony-----	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Fairview, stony-----	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
Westfield, stony----	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50

Damage by Fire and Seedling Mortality on Forestland

(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	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
ArA:				
Arkaqua, undrained	Low		Moderate	
	Texture/rock fragments	0.10	Wetness	0.50
BaC:				
Bandana	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Wetness	0.50
Tate	Low		Low	
	Texture/rock fragments	0.10		
Nikwasi, undrained	Low		High	
	Texture/rock fragments	0.10	Wetness	1.00
BbB, BbC:				
Braddock	Moderate		Low	
	Texture/rock fragments	0.50		
BbD:				
Braddock	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
BcB:				
Braddock	Moderate		Low	
	Texture/rock fragments	0.50		
BdC:				
Braddock, stony	Moderate		Low	
	Texture/rock fragments	0.50		
BdD:				
Braddock, stony	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
BpC:				
Braddock, rubbly	Moderate		Low	
	Texture/rock fragments	0.50		
Pilot Mountain, rubbly	Moderate		Low	
	Texture/rock fragments	0.50		

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
BpD:				
Braddock, rubbly----	High		Moderate	
	Texture/slope/rock fragments	1.00	Available water	0.50
Pilot Mountain, rubbly-------------	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
BrD:				
Brevard, very bouldery-----------	Low		Moderate	
	Texture/rock fragments	0.10	Available water	0.50
Greenlee, very bouldery-----------	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
BrE:				
Brevard, very bouldery-----------	Low		Moderate	
			Available water	0.50
Greenlee, very bouldery-----------	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
CeD:				
Chestnut, very rocky	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
Peaks, very rocky---	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
CeE:				
Chestnut, very rocky	Moderate		Moderate	
	Texture/slope/surface depth/rock fragments	0.50	Available water	0.50
Peaks, very rocky---	High		Moderate	
	Texture/slope/surface depth/rock fragments	1.00	Available water	0.50
CfF:				
Chestnut, very rocky	Moderate		Moderate	
	Texture/slope/surface depth/rock fragments	0.50	Available water	0.50

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
Peaks, very rocky	High		Moderate	
	Texture/slope/surface depth/rock fragments	1.00	Available water	0.50
Tuckasegee, very rocky	Low		Low	
	Texture/rock fragments	0.10		
ChE:				
Cleveland, windswept	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
Rock outcrop	Not rated		Not rated	
Peaks, windswept	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
CkF:				
Cleveland, windswept	Moderate		Moderate	
	Texture/slope/surface depth/rock fragments	0.50	Available water	0.50
Rock outcrop	Not rated		Not rated	
Peaks, windswept	High		Moderate	
	Texture/slope/surface depth/rock fragments	1.00	Available water	0.50
CmD:				
Cliffield, very stony	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
Cowee, very stony	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
CnE:				
Cliffield, very rocky	High		Moderate	
	Texture/slope/surface depth/rock fragments	1.00	Available water	0.50

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
Cowee, very rocky---	Moderate Texture/slope/surface depth/rock fragments	0.50	Moderate Available water	0.50
CoD:				
Cliffield, rubbly---	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
Sauratown, rubbly---	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
CoE:				
Cliffield, rubbly---	High Texture/slope/rock fragments	1.00	Moderate Available water	0.50
Sauratown, rubbly---	Moderate Texture/rock fragments	0.50	Moderate Available water	0.50
CrB2:				
Clifford, moderately eroded-------------	Moderate Texture/rock fragments	0.50	Low	
CsA:				
Colvard-------------	Low Texture/rock fragments	0.10	Low	
Suches--------------	Low Texture/rock fragments	0.10	Low	
CwC:				
Cowee, stony--------	Moderate Texture/surface depth/rock fragments	0.50	Low	
CwD, CwE:				
Cowee, stony--------	Moderate Texture/surface depth/rock fragments	0.50	Moderate Available water	0.50
CxF:				
Cowee, rocky--------	Moderate Texture/slope/surface depth/rock fragments	0.50	Moderate Available water	0.50
Saluda, rocky-------	Moderate Texture/slope/surface depth/rock fragments	0.50	Moderate Available water	0.50

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
Evard, rocky	Low		Moderate	
			Available water	0.50
DAM:				
Dam	Not rated		Not rated	
DeF:				
Devotion, very rocky	Low		Moderate	
			Available water	0.50
Rhodhiss, very rocky	Moderate		Moderate	
	Texture/slope/surface depth/rock fragments	0.50	Available water	0.50
Bannertown, very rocky	Moderate		Moderate	
	Texture/slope/surface depth/rock fragments	0.50	Available water	0.50
DrB:				
Dillard	Low		Low	
	Texture/rock fragments	0.10		
EcC:				
Evard, stony	Low		Low	
	Texture/rock fragments	0.10		
Cowee, stony	Moderate		Low	
	Texture/surface depth/rock fragments	0.50		
EcD:				
Evard, stony	Low		Moderate	
	Texture/rock fragments	0.10	Available water	0.50
Cowee, stony	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
EcE:				
Evard, stony	Low		Moderate	
			Available water	0.50
Cowee, stony	Moderate		Moderate	
	Texture/slope/surface depth/rock fragments	0.50	Available water	0.50

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
FeB2, FeC2:				
Fairview, moderately eroded	Moderate		Low	
	Texture/rock fragments	0.50		
FeD2:				
Fairview, moderately eroded	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
FfD:				
Fairview, stony	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
FnB2, FnC2:				
Fairview, moderately eroded	Moderate		Low	
	Texture/rock fragments	0.50		
FrC2:				
Fairview, moderately eroded	Moderate		Low	
	Texture/rock fragments	0.50		
Siloam, moderately eroded	Moderate		Low	
	Texture/rock fragments	0.50		
FrD2:				
Fairview, moderately eroded	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
Siloam, moderately eroded	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
FsE:				
Fairview	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
Stott Knob	Moderate		Moderate	
	Texture/slope/surface depth/rock fragments	0.50	Available water	0.50
FtE:				
Fairview, stony	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
Stott Knob, stony---	High		Moderate	
	Texture/slope/surface depth/rock fragments	1.00	Available water	0.50
FuB2, FuC2:				
Fairview, moderately eroded-------------	Moderate		Low	
	Texture/rock fragments	0.50		
Urban land----------	Not rated		Not rated	
GrE:				
Greenlee, rubbly----	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
HaA:				
Hatboro, drained----	Low		High	
	Texture/rock fragments	0.10	Wetness	1.00
Hatboro, undrained--	Low		High	
	Texture/rock fragments	0.10	Wetness	1.00
MsC:				
Meadowfield, very stony--------------	Moderate		Low	
	Texture/surface depth/rock fragments	0.50		
Stott Knob, very stony--------------	Moderate		Low	
	Texture/surface depth/rock fragments	0.50		
MsD:				
Meadowfield, very stony--------------	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
Stott Knob, very stony--------------	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
MsE:				
Meadowfield, very stony--------------	High		Moderate	
	Texture/slope/surface depth/rock fragments	1.00	Available water	0.50

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
Stott Knob, very stony	Moderate		Moderate	
	Texture/slope/surface depth/rock fragments	0.50	Available water	0.50
Pt:				
Pits, quarry	Not rated		Not rated	
RbD:				
Rhodhiss, very rocky	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
Bannertown, very rocky	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
RrE:				
Rhodhiss, very bouldery	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
Bannertown, very bouldery	High		Moderate	
	Texture/slope/surface depth	1.00	Available water	0.50
Rock outcrop	Not rated		Not rated	
RsB, RsC:				
Rhodhiss, stony	Moderate		Low	
	Texture/surface depth/rock fragments	0.50		
Stott Knob, stony	Moderate		Low	
	Texture/surface depth/rock fragments	0.50		
RsD, RsE:				
Rhodhiss, stony	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
Stott Knob, stony	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value
SrC:				
Siloam	Moderate		Low	
	Texture/rock fragments	0.50		
Redbrush	Moderate		Low	
	Texture/rock fragments	0.50		
SrE:				
Siloam	Moderate		Moderate	
	Texture/slope/rock fragments	0.50	Available water	0.50
Redbrush	Moderate		Moderate	
	Texture/slope/rock fragments	0.50	Available water	0.50
StC:				
Stott Knob, stony	Moderate		Low	
	Texture/surface depth/rock fragments	0.50		
StD, StE:				
Stott Knob, stony	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50
TaD:				
Tate, extremely stony	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
TcC:				
Tate	Low		Low	
	Texture/rock fragments	0.10		
Colvard	Low		Low	
	Texture/rock fragments	0.10		
ToB:				
Toast, rocky	Moderate		Low	
	Texture/rock fragments	0.50		
TtC:				
Toast, very rocky	Moderate		Low	
	Texture/rock fragments	0.50		
Bannertown, very rocky	High		Low	
	Texture/surface depth/rock fragments	1.00		

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
TuB:				
Toast, rocky	Moderate		Low	
	Texture/rock fragments	0.50		
Urban land	Not rated		Not rated	
TwC:				
Toast, very rocky	Moderate		Low	
	Texture/rock fragments	0.50		
Urban land	Not rated		Not rated	
Bannertown, very rocky	High		Low	
	Texture/surface depth/rock fragments	1.00		
Ud:				
Udorthents, loamy	High		Low	
	Texture/rock fragments	1.00		
Ur:				
Urban land	Not rated		Not rated	
WfB2, WfC2:				
Woolwine, moderately eroded	Moderate		Low	
	Texture/rock fragments	0.50		
Fairview, moderately eroded	Moderate		Low	
	Texture/rock fragments	0.50		
Westfield, moderately eroded	Moderate		Low	
	Texture/rock fragments	0.50		
WoD, WoE:				
Woolwine, stony	Moderate		Moderate	
	Texture/surface depth/rock fragments	0.50	Available water	0.50

Damage by Fire and Seedling Mortality on Forestland—Continued

Map symbol and soil name	Potential for damage to soil by fire		Potential for seedling mortality	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Fairview, stony-----	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50
Westfield, stony----	Moderate		Moderate	
	Texture/rock fragments	0.50	Available water	0.50

Camp Areas, Picnic Areas, and Playgrounds

(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	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
ArA:						
Arkaqua, undrained--	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40	Flooding	1.00
BaC:						
Bandana-------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.40	Flooding	1.00
Tate----------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
					Gravel content	0.22
Nikwasi, undrained--	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
BbB:						
Braddock------------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
BbC:						
Braddock------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.16	Slope	0.16	Slope	1.00
BbD:						
Braddock------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
BcB:						
Braddock------------	Not limited		Not limited		Somewhat limited	
					Slope	0.50
BdC:						
Braddock, stony-----	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.16	Slope	0.16	Slope	1.00
BdD:						
Braddock, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
BpC:						
Braddock, rubbly----	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
	Slope	0.37	Slope	0.37	Slope	1.00
					Gravel content	0.94
Pilot Mountain, rubbly-------------	Not rated		Not rated		Not rated	

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
BpD:						
Braddock, rubbly	Very limited		Very limited		Very limited	
	Slope	1.00	Large stones content	1.00	Large stones content	1.00
	Large stones content	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.94
Pilot Mountain, rubbly	Not rated		Not rated		Not rated	
BrD, BrE:						
Brevard, very bouldery	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	0.11	Gravel content	0.11	Large stones content	0.47
Greenlee, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	0.68	Large stones content	0.68	Large stones content	0.68
					Gravel content	0.11
CeD, CeE:						
Chestnut, very rocky	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	0.54
Peaks, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.82	Gravel content	0.82	Gravel content	1.00
					Depth to bedrock	0.71
CfF:						
Chestnut, very rocky	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	0.54
Peaks, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.82	Gravel content	0.82	Gravel content	1.00
					Depth to bedrock	0.71
Tuckasegee, very rocky	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
ChE:						
Cleveland, windswept	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
	Large stones content	0.47	Large stones content	0.47	Gravel content	1.00
Rock outcrop	Not rated		Not rated		Not rated	

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
Peaks, windswept----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.82	Gravel content	0.82	Gravel content	1.00
	Large stones content	0.47	Large stones content	0.47	Depth to bedrock	0.71
CkF:						
Cleveland, windswept	Very limited		Very limited		Very limited	
	Slope	1.00	Large stones content	1.00	Large stones content	1.00
	Large stones content	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
Rock outcrop--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited		Very limited	
	Slope	1.00	Large stones content	1.00	Large stones content	1.00
	Large stones content	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.82	Gravel content	0.82	Gravel content	1.00
CmD:						
Cliffield, very stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
					Depth to bedrock	0.95
	Gravel content	0.13	Gravel content	0.13		
Cowee, very stony---	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
	Gravel content	0.08	Gravel content	0.08	Large stones content	0.53
CnE:						
Cliffield, very rocky--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
					Depth to bedrock	0.95
	Gravel content	0.13	Gravel content	0.13		
Cowee, very rocky---	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
	Gravel content	0.08	Gravel content	0.08	Large stones content	0.53
CoD:						
Cliffield, rubbly---	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.71
Sauratown, rubbly---	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.90

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
CoE:						
Cliffield, rubbly	Very limited		Very limited		Very limited	
	Slope	1.00	Large stones content	1.00	Large stones content	1.00
	Large stones content	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.71
Sauratown, rubbly	Very limited		Very limited		Very limited	
	Slope	1.00	Large stones content	1.00	Large stones content	1.00
	Large stones content	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.90
CrB2:						
Clifford, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.50
CsA:						
Colvard	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
Suches	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
CwC:						
Cowee, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.16
CwD, CwE:						
Cowee, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.16
CxF:						
Cowee, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.16
Saluda, rocky	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	0.96
Evard, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
DAM:						
Dam	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
					Depth to bedrock	0.90

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	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
Rhodhiss, very rocky	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
Bannertown, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.71
DrB:						
Dillard	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.19	Depth to saturated zone	0.39
	Depth to saturated zone	0.39	Slow water movement	0.15	Slow water movement	0.15
	Slow water movement	0.15			Slope	0.12
EcC:						
Evard, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
Cowee, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.16
EcD, EcE:						
Evard, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.05	Gravel content	0.05	Gravel content	1.00
Cowee, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.16
FeB2:						
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.50
FeC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
FeD2:						
Fairview, moderately eroded	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
FfD:						
Fairview, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
FnB2:						
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.50

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
FnC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
FrC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
Siloam, moderately eroded	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slow water movement	0.15	Slow water movement	0.15	Depth to bedrock	1.00
	Slope	0.04	Slope	0.04	Gravel content	0.22
FrD2:						
Fairview, moderately eroded	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Siloam, moderately eroded	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
	Slow water movement	0.15	Slow water movement	0.15	Gravel content	0.22
FsE:						
Fairview	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Stott Knob	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.46
					Gravel content	0.04
FtE:						
Fairview, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Stott Knob, stony	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	0.46
FuB2:						
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.50
Urban land	Not rated		Not rated		Not rated	
FuC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Urban land	Not rated		Not rated		Not rated	

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
GrE:						
Greenlee, rubbly----	Very limited		Very limited		Very limited	
	Slope	1.00	Large stones content	1.00	Large stones content	1.00
	Large stones content	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.11
HaA:						
Hatboro, drained----	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
Hatboro, undrained--	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
MsC:						
Meadowfield, very stony--------------	Somewhat limited		Somewhat limited		Very limited	
	Gravel content	0.94	Gravel content	0.94	Slope	1.00
	Slope	0.63	Slope	0.63	Gravel content	1.00
	Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.65
Stott Knob, very stony--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
	Gravel content	0.07	Gravel content	0.07	Large stones content	0.53
MsD, MsE:						
Meadowfield, very stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.94	Gravel content	0.94	Gravel content	1.00
	Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.65
Stott Knob, very stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
	Gravel content	0.07	Gravel content	0.07	Large stones content	0.53
Pt:						
Pits, quarry--------	Not rated		Not rated		Not rated	
RbD:						
Rhodhiss, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.22

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
Bannertown, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.71
RrE:						
Rhodhiss, very bouldery	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
					Gravel content	0.16
Bannertown, very bouldery	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	0.08	Gravel content	0.08	Depth to bedrock	0.71
Rock outcrop	Not rated		Not rated		Not rated	
RsB:						
Rhodhiss, stony	Somewhat limited		Somewhat limited		Very limited	
	Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
					Slope	0.50
Stott Knob, stony	Somewhat limited		Somewhat limited		Very limited	
	Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
					Slope	0.50
					Depth to bedrock	0.16
RsC:						
Rhodhiss, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
Stott Knob, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
					Depth to bedrock	0.16
RsD, RsE:						
Rhodhiss, stony	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
Stott Knob, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
					Depth to bedrock	0.16
SrC:						
Siloam	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Slow water movement	0.15	Slow water movement	0.15	Depth to bedrock	1.00
	Slope	0.04	Slope	0.04	Gravel content	1.00

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	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
Redbrush	Somewhat limited		Somewhat limited		Very limited	
	Slow water movement	0.60	Slow water movement	0.60	Slope	1.00
					Gravel content	0.97
	Slope	0.04	Slope	0.04	Depth to bedrock	0.84
SrE:						
Siloam	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
	Slow water movement	0.15	Slow water movement	0.15	Gravel content	1.00
Redbrush	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slow water movement	0.60	Slow water movement	0.60	Gravel content	0.97
					Depth to bedrock	0.84
StC:						
Stott Knob, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
					Depth to bedrock	0.16
StD, StE:						
Stott Knob, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
					Depth to bedrock	0.16
TaD:						
Tate, extremely stony	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
TcC:						
Tate	Not limited		Not limited		Very limited	
					Slope	1.00
					Gravel content	0.22
Colvard	Very limited		Somewhat limited		Very limited	
	Flooding	1.00	Flooding	0.40	Flooding	1.00
ToB:						
Toast, rocky	Not limited		Not limited		Somewhat limited	
					Slope	0.50
TtC:						
Toast, very rocky	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Bannertown, very rocky	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.71

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	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
TuB:						
Toast, rocky	Not limited		Not limited		Somewhat limited	
					Slope	0.50
Urban land	Not rated		Not rated		Not rated	
TwC:						
Toast, very rocky	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Urban land	Not rated		Not rated		Not rated	
Bannertown, very rocky	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
	Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
					Depth to bedrock	0.71
Ud:						
Udorthents, loamy	Not limited		Not limited		Somewhat limited	
					Slope	0.88
Ur:						
Urban land	Not rated		Not rated		Not rated	
WfB2:						
Woolwine, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.88
					Depth to bedrock	0.46
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.88
Westfield, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.88
WfC2:						
Woolwine, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
					Depth to bedrock	0.46
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Westfield, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
WoD, WoE:						
Woolwine, stony	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	0.46

Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Fairview, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Westfield, stony----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00

Paths, Trails, and Golf Fairways

(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	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ArA:						
Arkaqua, undrained	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
BaC:						
Bandana	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
Tate	Not limited		Not limited		Somewhat limited	
					Slope	0.04
Nikwasi, undrained	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
BbB:						
Braddock	Not limited		Not limited		Not limited	
BbC:						
Braddock	Not limited		Not limited		Somewhat limited	
					Slope	0.16
BbD:						
Braddock	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
BcB:						
Braddock	Not limited		Not limited		Somewhat limited	
					Large stones content	0.08
BdC:						
Braddock, stony	Not limited		Not limited		Somewhat limited	
					Slope	0.16
					Large stones content	0.08
BdD:						
Braddock, stony	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Large stones content	0.08
BpC:						
Braddock, rubbly	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
					Slope	0.37

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
Pilot Mountain, rubbly	Not rated		Not rated		Not rated	
BpD:						
Braddock, rubbly	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
	Slope	1.00	Slope	0.22	Large stones content	1.00
Pilot Mountain, rubbly	Not rated		Not rated		Not rated	
BrD:						
Brevard, very bouldery	Somewhat limited		Somewhat limited		Very limited	
	Large stones content	0.47	Large stones content	0.47	Slope	1.00
	Slope	0.08			Large stones content	0.16
					Gravel content	0.11
Greenlee, very bouldery	Somewhat limited		Somewhat limited		Very limited	
	Large stones content	0.68	Large stones content	0.68	Large stones content	1.00
	Slope	0.08			Slope	1.00
					Droughty	0.56
BrE:						
Brevard, very bouldery	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	0.16
					Gravel content	0.11
Greenlee, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	0.68	Large stones content	0.68	Large stones content	1.00
					Droughty	0.56
CeD:						
Chestnut, very rocky	Somewhat limited		Not limited		Very limited	
	Slope	0.08			Slope	1.00
					Depth to bedrock	0.54
					Large stones content	0.20
Peaks, very rocky	Somewhat limited		Not limited		Very limited	
	Slope	0.08			Slope	1.00
					Droughty	0.99
					Gravel content	0.82

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
CeE:						
Chestnut, very rocky	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Depth to bedrock	0.54
					Large stones content	0.20
Peaks, very rocky	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Droughty	0.99
					Gravel content	0.82
CfF:						
Chestnut, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.54
					Large stones content	0.20
Peaks, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	0.99
					Gravel content	0.82
Tuckasegee, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.06
ChE:						
Cleveland, windswept	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Large stones content	0.47	Depth to bedrock	1.00
	Large stones content	0.47	Slope	0.08	Droughty	1.00
					Slope	1.00
Rock outcrop	Not rated		Not rated		Not rated	
Peaks, windswept	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	Droughty	0.99
					Gravel content	0.82
CkF:						
Cleveland, windswept	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
					Droughty	1.00
Rock outcrop	Not rated		Not rated		Not rated	
Peaks, windswept	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Droughty	0.99
					Gravel content	0.82

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
CmD:						
Cliffield, very stony	Somewhat limited		Somewhat limited		Very limited	
	Large stones content	0.53	Large stones content	0.53	Slope	1.00
					Droughty	0.99
	Slope	0.08			Depth to bedrock	0.95
Cowee, very stony	Somewhat limited		Somewhat limited		Very limited	
	Large stones content	0.53	Large stones content	0.53	Slope	1.00
					Depth to bedrock	0.16
	Slope	0.08			Gravel content	0.08
CnE:						
Cliffield, very rocky	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Droughty	0.99
					Depth to bedrock	0.95
Cowee, very rocky	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.16
					Gravel content	0.08
CoD:						
Cliffield, rubbly	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
	Slope	0.08			Slope	1.00
					Droughty	0.94
Sauratown, rubbly	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
					Large stones content	0.99
	Slope	0.08			Depth to bedrock	0.80
CoE:						
Cliffield, rubbly	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
					Large stones content	1.00
	Slope	1.00	Slope	0.78	Droughty	0.94
Sauratown, rubbly	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
					Large stones content	0.99
	Slope	1.00	Slope	0.78	Depth to bedrock	0.80
CrB2:						
Clifford, moderately eroded	Not limited		Not limited		Not limited	
CsA:						
Colvard	Not limited		Not limited		Somewhat limited	
					Flooding	0.60

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
Suches	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
CwC:						
Cowee, stony	Not limited		Not limited		Somewhat limited	
					Slope	0.63
					Depth to bedrock	0.16
					Gravel content	0.08
CwD:						
Cowee, stony	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.08
CwE:						
Cowee, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.08
CxF:						
Cowee, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.08
Saluda, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	1.00
					Droughty	0.89
Evard, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.05
DAM:						
Dam	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.90
					Droughty	0.07
Rhodhiss, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.01
Bannertown, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.71
					Gravel content	0.08
DrB:						
Dillard	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
EcC:						
Evard, stony	Not limited		Not limited		Somewhat limited	
					Slope	0.63
					Gravel content	0.05
Cowee, stony	Not limited		Not limited		Somewhat limited	
					Slope	0.63
					Depth to bedrock	0.16
					Gravel content	0.08
EcD:						
Evard, stony	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Gravel content	0.05
Cowee, stony	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.08
EcE:						
Evard, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Gravel content	0.05
Cowee, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.08
FeB2:						
Fairview, moderately eroded	Not limited		Not limited		Not limited	
FeC2:						
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.37
FeD2:						
Fairview, moderately eroded	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
FfD:						
Fairview, stony	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Large stones content	0.01
FnB2:						
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Large stones content	0.01

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
FnC2:						
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.37
					Large stones content	0.01
FrC2:						
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.04
Siloam, moderately eroded	Not limited		Not limited		Very limited	
					Depth to bedrock	1.00
					Droughty	0.91
					Slope	0.04
FrD2:						
Fairview, moderately eroded	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
Siloam, moderately eroded	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Depth to bedrock	1.00
					Droughty	0.91
FsE:						
Fairview	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
Stott Knob	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Depth to bedrock	0.46
FtE:						
Fairview, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Large stones content	0.01
Stott Knob, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Depth to bedrock	0.46
					Gravel content	0.04
FuB2:						
Fairview, moderately eroded	Not limited		Not limited		Not limited	
Urban land	Not rated		Not rated		Not rated	
FuC2:						
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.63

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Urban land----------	Not rated		Not rated		Not rated	
GrE:						
Greenlee, rubbly----	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Large stones content	1.00
					Droughty	0.56
HaA:						
Hatboro, drained----	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
Hatboro, undrained--	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
MsC:						
Meadowfield, very stony--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Large stones content	0.53	Large stones content	0.53	Gravel content	0.94
					Large stones content	0.88
					Droughty	0.77
Stott Knob, very stony--------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Large stones content	0.53	Large stones content	0.53	Slope	0.63
					Depth to bedrock	0.16
					Gravel content	0.07
MsD:						
Meadowfield, very stony--------------	Somewhat limited		Somewhat limited		Very limited	
	Large stones content	0.53	Large stones content	0.53	Slope	1.00
	Slope	0.50			Gravel content	0.94
					Large stones content	0.88
Stott Knob, very stony--------------	Somewhat limited		Somewhat limited		Very limited	
	Large stones content	0.53	Large stones content	0.53	Slope	1.00
	Slope	0.50			Depth to bedrock	0.16
					Gravel content	0.07
MsE:						
Meadowfield, very stony--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Gravel content	0.94
					Large stones content	0.88

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
Stott Knob, very stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
	Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.16
					Gravel content	0.07
Pt:						
Pits, quarry	Not rated		Not rated		Not rated	
RbD:						
Rhodhiss, very rocky	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
Bannertown, very rocky	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Depth to bedrock	0.71
					Gravel content	0.08
RrE:						
Rhodhiss, very bouldery	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	0.01
Bannertown, very bouldery	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	0.71
					Gravel content	0.08
Rock outcrop	Not rated		Not rated		Not rated	
RsB:						
Rhodhiss, stony	Not limited		Not limited		Somewhat limited	
					Gravel content	0.01
Stott Knob, stony	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.16
					Gravel content	0.07
RsC:						
Rhodhiss, stony	Not limited		Not limited		Somewhat limited	
					Slope	0.63
					Gravel content	0.01
Stott Knob, stony	Not limited		Not limited		Somewhat limited	
					Slope	0.63
					Depth to bedrock	0.16
					Gravel content	0.07
RsD:						
Rhodhiss, stony	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Gravel content	0.01

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
Stott Knob, stony---	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.07
RsE:						
Rhodhiss, stony-----	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Gravel content	0.01
Stott Knob, stony---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.07
SrC:						
Siloam--------------	Not limited		Not limited		Very limited	
					Depth to bedrock	1.00
					Droughty	0.91
					Slope	0.04
Redbrush------------	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.84
					Droughty	0.39
					Slope	0.04
SrE:						
Siloam--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.22	Slope	1.00
					Depth to bedrock	1.00
					Droughty	0.91
Redbrush------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.22	Slope	1.00
					Depth to bedrock	0.84
					Droughty	0.39
StC:						
Stott Knob, stony---	Not limited		Not limited		Somewhat limited	
					Slope	0.63
					Depth to bedrock	0.16
					Gravel content	0.07
StD:						
Stott Knob, stony---	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.07
StE:						
Stott Knob, stony---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Depth to bedrock	0.16
					Gravel content	0.07

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
TaD:						
Tate, extremely stony	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
	Slope	0.08			Large stones content	0.32
					Gravel content	0.01
TcC:						
Tate	Not limited		Not limited		Not limited	
Colvard	Somewhat limited		Somewhat limited		Very limited	
	Flooding	0.40	Flooding	0.40	Flooding	1.00
ToB:						
Toast, rocky	Not limited		Not limited		Not limited	
TtC:						
Toast, very rocky	Not limited		Not limited		Somewhat limited	
					Slope	0.63
Bannertown, very rocky	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.71
					Slope	0.63
					Gravel content	0.08
TuB:						
Toast, rocky	Not limited		Not limited		Not limited	
Urban land	Not rated		Not rated		Not rated	
TwC:						
Toast, very rocky	Not limited		Not limited		Somewhat limited	
					Slope	0.63
Urban land	Not rated		Not rated		Not rated	
Bannertown, very rocky	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.71
					Slope	0.63
					Gravel content	0.08
Ud:						
Udorthents, loamy	Not limited		Not limited		Somewhat limited	
					Droughty	0.01
Ur:						
Urban land	Not rated		Not rated		Not rated	
WfB2:						
Woolwine, moderately eroded	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.46
					Droughty	0.33

Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	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
Fairview, moderately eroded-------------	Not limited		Not limited		Not limited	
Westfield, moderately eroded--	Not limited		Not limited		Not limited	
WfC2:						
Woolwine, moderately eroded-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.63
					Depth to bedrock	0.46
					Droughty	0.33
Fairview, moderately eroded-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.63
Westfield, moderately eroded--	Not limited		Not limited		Somewhat limited	
					Slope	0.63
WoD:						
Woolwine, stony-----	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
					Depth to bedrock	0.46
					Droughty	0.43
Fairview, stony-----	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
Westfield, stony----	Somewhat limited		Not limited		Very limited	
	Slope	0.50			Slope	1.00
WoE:						
Woolwine, stony-----	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
					Depth to bedrock	0.46
					Droughty	0.43
Fairview, stony-----	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00
Westfield, stony----	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.78	Slope	1.00

Dwellings and Small Commercial Buildings

(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	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
ArA:						
Arkaqua, undrained	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
BaC:						
Bandana	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
Tate	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
Nikwasi, undrained	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
BbB:						
Braddock	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
BbC:						
Braddock	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.16	Slope	0.16	Shrink-swell	0.50
BbD:						
Braddock	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
BcB:						
Braddock	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
BdC:						
Braddock, stony	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.16	Slope	0.16	Shrink-swell	0.50
BdD:						
Braddock, stony	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
BpC:						
Braddock, rubbly	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

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
Pilot Mountain, rubbly	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
BpD:						
Braddock, rubbly	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
Pilot Mountain, rubbly	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
BrD:						
Brevard, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Greenlee, very bouldery	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Large stones content	1.00
BrE:						
Brevard, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Greenlee, very bouldery	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
CeD:						
Chestnut, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.84		
			Depth to soft bedrock	0.54		
Peaks, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.71	Slope	1.00	Depth to hard bedrock	0.71

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
CeE:						
Chestnut, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.84		
			Depth to soft bedrock	0.54		
Peaks, very rocky---	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
CfF:						
Chestnut, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.84		
			Depth to soft bedrock	0.54		
Peaks, very rocky---	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
Tuckasegee, very rocky--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
ChE:						
Cleveland, windswept	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to hard bedrock	1.00
Rock outcrop--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.71	Slope	1.00	Depth to hard bedrock	0.71
CkF:						
Cleveland, windswept	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--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
CmD:						
Cliffield, very stony	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	Depth to hard bedrock	0.95
Cowee, very stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.15		
CnE:						
Cliffield, very rocky	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
Cowee, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.15		
CoD:						
Cliffield, rubbly	Very limited		Very limited		Very limited	
	Large stones content	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Slope	1.00	Large stones content	1.00	Large stones content	1.00
	Depth to hard bedrock	0.71	Slope	1.00	Depth to hard bedrock	0.71
Sauratown, rubbly	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.54	Slope	1.00	Depth to hard bedrock	0.54
	Large stones content	0.02	Depth to soft bedrock	0.79	Large stones content	0.02
CoE:						
Cliffield, rubbly	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	1.00	Depth to hard bedrock	1.00	Large stones content	1.00
	Depth to hard bedrock	0.71	Large stones content	1.00	Depth to hard bedrock	0.71
Sauratown, rubbly	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.54	Depth to hard bedrock	1.00	Depth to hard bedrock	0.54
	Large stones content	0.02	Depth to soft bedrock	0.79	Large stones content	0.02
CrB2:						
Clifford, moderately eroded	Not limited		Not limited		Not limited	

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
CsA:						
Colvard	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
Suches	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
			Depth to saturated zone	0.99		
CwC:						
Cowee, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
			Depth to soft bedrock	0.15		
CwD, CwE:						
Cowee, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.15		
CxF:						
Cowee, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.15		
Saluda, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
Evard, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
DAM:						
Dam	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.90		
			Depth to hard bedrock	0.84		
Rhodhiss, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Bannertown, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
			Depth to soft bedrock	0.71		

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
DrB:						
Dillard-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
EcC:						
Evard, stony--------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Cowee, stony--------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
			Depth to soft bedrock	0.15		
EcD, EcE:						
Evard, stony--------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Cowee, stony--------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.15		
FeB2:						
Fairview, moderately eroded-------------	Not limited		Not limited		Not limited	
FeC2:						
Fairview, moderately eroded-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
FeD2:						
Fairview, moderately eroded-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
FfD:						
Fairview, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
FnB2:						
Fairview, moderately eroded-------------	Not limited		Not limited		Not limited	
FnC2:						
Fairview, moderately eroded-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.37	Slope	0.37	Slope	1.00
FrC2:						
Fairview, moderately eroded-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
Siloam, moderately eroded	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
	Depth to soft bedrock	0.50	Shrink-swell	0.50	Depth to hard bedrock	0.79
FrD2:						
Fairview, moderately eroded	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Siloam, moderately eroded	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 soft bedrock	1.00
	Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to hard bedrock	0.79
FsE:						
Fairview	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Stott Knob	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.71		
			Depth to soft bedrock	0.46		
FtE:						
Fairview, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Stott Knob, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.71		
			Depth to soft bedrock	0.46		
FuB2:						
Fairview, moderately eroded	Not limited		Not limited		Not limited	
Urban land	Not rated		Not rated		Not rated	
FuC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Urban land	Not rated		Not rated		Not rated	

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
GrE:						
Greenlee, rubbly----	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
HaA:						
Hatboro, drained----	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
Hatboro, undrained--	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
MsC:						
Meadowfield, very stony--------------	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Slope	1.00
	Slope	0.63	Slope	0.63	Depth to hard bedrock	0.64
Stott Knob, very stony--------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
			Depth to hard bedrock	0.54		
			Depth to soft bedrock	0.15		
MsD, MsE:						
Meadowfield, very stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
Stott Knob, very stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.54		
			Depth to soft bedrock	0.15		
Pt:						
Pits, quarry--------	Not rated		Not rated		Not rated	
RbD:						
Rhodhiss, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
Bannertown, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
			Depth to soft bedrock	0.71		
RrE:						
Rhodhiss, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Bannertown, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
			Depth to soft bedrock	0.71		
Rock outcrop	Not rated		Not rated		Not rated	
RsB:						
Rhodhiss, stony	Not limited		Not limited		Not limited	
Stott Knob, stony	Not limited		Somewhat limited		Not limited	
			Depth to hard bedrock	0.54		
			Depth to soft bedrock	0.15		
RsC:						
Rhodhiss, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Stott Knob, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
			Depth to hard bedrock	0.54		
			Depth to soft bedrock	0.15		
RsD, RsE:						
Rhodhiss, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Stott Knob, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.54		
			Depth to soft bedrock	0.15		

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
SrC:						
Siloam	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to soft bedrock	1.00
	Shrink-swell	0.50	Depth to soft bedrock	1.00	Slope	1.00
	Depth to soft bedrock	0.50	Shrink-swell	0.50	Depth to hard bedrock	0.79
Redbrush	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Slope	0.04	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.03	Depth to soft bedrock	0.84	Depth to hard bedrock	0.03
SrE:						
Siloam	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 soft bedrock	1.00
	Shrink-swell	0.50	Depth to soft bedrock	1.00	Depth to hard bedrock	0.79
Redbrush	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	0.03	Depth to hard bedrock	1.00	Depth to hard bedrock	0.03
StC:						
Stott Knob, stony	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
			Depth to hard bedrock	0.54		
			Depth to soft bedrock	0.15		
StD, StE:						
Stott Knob, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.54		
			Depth to soft bedrock	0.15		
TaD:						
Tate, extremely stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
TcC:						
Tate	Not limited		Not limited		Somewhat limited	
					Slope	0.50
Colvard	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
ToB:						
Toast, rocky	Not limited		Not limited		Not limited	
TtC:						
Toast, very rocky	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Bannertown, very rocky	Somewhat limited		Very limited		Very limited	
	Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.46	Depth to soft bedrock	0.71	Depth to hard bedrock	0.46
			Slope	0.63		
TuB:						
Toast, rocky	Not limited		Not limited		Not limited	
Urban land	Not rated		Not rated		Not rated	
TwC:						
Toast, very rocky	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Urban land	Not rated		Not rated		Not rated	
Bannertown, very rocky	Somewhat limited		Very limited		Very limited	
	Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.46	Depth to soft bedrock	0.71	Depth to hard bedrock	0.46
			Slope	0.63		
Ud:						
Udorthents, loamy	Not limited		Not limited		Somewhat limited	
					Slope	0.12
Ur:						
Urban land	Not rated		Not rated		Not rated	
WfB2:						
Woolwine, moderately eroded	Not limited		Somewhat limited		Somewhat limited	
			Depth to soft bedrock	0.46	Slope	0.12
Fairview, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.12
Westfield, moderately eroded	Not limited		Not limited		Somewhat limited	
					Slope	0.12

Dwellings and Small Commercial Buildings—Continued

Map symbol and soil name	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
WfC2:						
Woolwine, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
			Depth to soft bedrock	0.46		
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
Westfield, moderately eroded	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.63	Slope	0.63	Slope	1.00
WoD, WoE:						
Woolwine, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.46		
Fairview, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Westfield, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00

Roads and Streets, Shallow Excavations, and Lawns and Landscaping

(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	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
ArA:						
Arkaqua, undrained	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
			Flooding	0.80		
BaC:						
Bandana	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
			Flooding	0.80		
Tate	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.04	Cutbanks cave	1.00	Slope	0.04
			Slope	0.04		
Nikwasi, undrained	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
	Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
BbB:						
Braddock	Somewhat limited		Somewhat limited		Not limited	
	Low strength	0.78	Too clayey	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		
BbC:						
Braddock	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.78	Too clayey	0.50	Slope	0.16
	Shrink-swell	0.50	Slope	0.16		
	Slope	0.16	Cutbanks cave	0.10		
BbD:						
Braddock	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.78	Too clayey	0.50		
	Shrink-swell	0.50	Cutbanks cave	0.10		
BcB:						
Braddock	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.78	Too clayey	0.50	Large stones content	0.08
	Shrink-swell	0.50	Cutbanks cave	0.10		
BdC:						
Braddock, stony	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.78	Too clayey	0.50	Slope	0.16
	Shrink-swell	0.50	Slope	0.16	Large stones content	0.08
	Slope	0.16	Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
BdD:						
Braddock, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.78	Too clayey	0.50	Large stones content	0.08
	Shrink-swell	0.50	Cutbanks cave	0.10		
BpC:						
Braddock, rubbly----	Somewhat limited		Somewhat limited		Very limited	
	Low strength	0.78	Too clayey	0.50	Large stones content	1.00
	Shrink-swell	0.50	Slope	0.37		
	Slope	0.37	Cutbanks cave	0.10	Slope	0.37
Pilot Mountain, rubbly-------------	Very limited		Very limited		Not rated	
	Large stones content	1.00	Large stones content	1.00		
	Slope	0.37	Slope	0.37		
			Too clayey	0.32		
BpD:						
Braddock, rubbly----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.78	Too clayey	0.50	Large stones content	1.00
	Shrink-swell	0.50	Cutbanks cave	0.10		
Pilot Mountain, rubbly-------------	Very limited		Very limited		Not rated	
	Slope	1.00	Slope	1.00		
	Large stones content	1.00	Large stones content	1.00		
			Too clayey	0.32		
BrD:						
Brevard, very bouldery-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
			Slope	1.00	Large stones content	0.16
					Gravel content	0.11
Greenlee, very bouldery-----------	Very limited		Very limited		Very limited	
	Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	0.10	Droughty	0.56
BrE:						
Brevard, very bouldery-----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	1.00	Large stones content	0.16
					Gravel content	0.11
Greenlee, very bouldery-----------	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
			Cutbanks cave	0.10	Droughty	0.56

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
CeD:						
Chestnut, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Frost action	0.50	Slope	1.00	Depth to bedrock	0.54
			Depth to hard bedrock	0.84	Large stones content	0.20
Peaks, very rocky---	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.71			Droughty	0.99
			Cutbanks cave	1.00	Gravel content	0.82
	Frost action	0.50	Slope	1.00		
CeE:						
Chestnut, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.54
			Depth to hard bedrock	0.84	Large stones content	0.20
Peaks, very rocky---	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.71			Droughty	0.99
			Slope	1.00	Gravel content	0.82
	Frost action	0.50	Cutbanks cave	1.00		
CfF:						
Chestnut, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.54
			Depth to hard bedrock	0.84	Large stones content	0.20
Peaks, very rocky---	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.71			Droughty	0.99
			Slope	1.00	Gravel content	0.82
	Frost action	0.50	Cutbanks cave	1.00		
Tuckasegee, very rocky--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
ChE:						
Cleveland, windswept	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
					Droughty	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	0.10		
Rock outcrop--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.71			Droughty	0.99
			Cutbanks cave	1.00	Gravel content	0.82
	Frost action	0.50	Slope	1.00		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
CkF:						
Cleveland, windswept	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Slope	1.00
					Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Droughty	1.00
	Frost action	0.50	Cutbanks cave	0.10		
Rock outcrop--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.71			Droughty	0.99
			Slope	1.00	Gravel content	0.82
	Frost action	0.50	Cutbanks cave	1.00		
CmD:						
Cliffield, very stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.95			Droughty	0.99
			Cutbanks cave	1.00	Depth to bedrock	0.95
	bedrock		Slope	1.00	Depth to bedrock	0.95
	Frost action	0.50				
Cowee, very stony---	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Frost action	0.50	Slope	1.00	Depth to bedrock	0.16
			Depth to soft bedrock	0.15	Gravel content	0.08
CnE:						
Cliffield, very rocky--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.95			Droughty	0.99
			Slope	1.00	Depth to bedrock	0.95
	Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.95
Cowee, very rocky---	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.16
			Depth to soft bedrock	0.15	Gravel content	0.08
CoD:						
Cliffield, rubbly---	Very limited		Very limited		Very limited	
	Large stones content	1.00	Depth to hard bedrock	1.00	Large stones content	1.00
	Slope	1.00	Large stones content	1.00	Slope	1.00
	Depth to hard bedrock	0.71			Droughty	0.94
			Slope	1.00		
Sauratown, rubbly---	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.54			Large stones content	0.99
			Slope	1.00		
	Frost action	0.50	Depth to soft bedrock	0.79	Depth to bedrock	0.80

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
CoE:						
Cliffield, rubbly---	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Large stones content	1.00	Slope	1.00	Large stones content	1.00
	Depth to hard bedrock	0.71	Large stones content	1.00	Droughty	0.94
Sauratown, rubbly---	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.54	Slope	1.00	Large stones content	0.99
	Frost action	0.50	Depth to soft bedrock	0.79	Depth to bedrock	0.80
CrB2:						
Clifford, moderately eroded-------------	Somewhat limited		Somewhat limited		Not limited	
	Low strength	0.02	Too clayey	0.12		
			Cutbanks cave	0.10		
CsA:						
Colvard-------------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
			Flooding	0.60		
Suches--------------	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	0.99	Flooding	0.60
	Low strength	0.78	Flooding	0.60		
			Cutbanks cave	0.10		
CwC: :						
Cowee, stony--------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Cutbanks cave	1.00	Slope	0.63
	Frost action	0.50	Slope	0.63	Depth to bedrock	0.16
			Depth to soft bedrock	0.15	Gravel content	0.08
CwD, CwE:						
Cowee, stony--------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.16
			Depth to soft bedrock	0.15	Gravel content	0.08
CxF:						
Cowee, rocky--------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.16
			Depth to soft bedrock	0.15	Gravel content	0.08
Saluda, rocky-------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00	Slope	1.00
	Depth to soft bedrock	1.00	Slope	1.00	Depth to bedrock	1.00
	Frost action	0.50	Cutbanks cave	0.10	Droughty	0.89

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
Evard, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.05
DAM:						
Dam	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	1.00	Depth to bedrock	0.90
			Depth to soft bedrock	0.90	Droughty	0.07
Rhodhiss, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	0.10	Gravel content	0.01
Bannertown, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.46	Slope	1.00	Depth to bedrock	0.71
			Cutbanks cave	1.00	Gravel content	0.08
DrB:						
Dillard	Somewhat limited		Very limited		Somewhat limited	
	Flooding	0.40	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Depth to saturated zone	0.19	Too clayey	0.12		
			Cutbanks cave	0.10		
EcC:						
Evard, stony	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Cutbanks cave	1.00	Slope	0.63
	Frost action	0.50	Slope	0.63	Gravel content	0.05
Cowee, stony	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Cutbanks cave	1.00	Slope	0.63
	Frost action	0.50	Slope	0.63	Depth to bedrock	0.16
			Depth to soft bedrock	0.15	Gravel content	0.08
EcD, EcE:						
Evard, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.05
Cowee, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00	Depth to bedrock	0.16
			Depth to soft bedrock	0.15	Gravel content	0.08
FeB2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Not limited	
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
FeC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.37	Slope	0.37	Slope	0.37
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		
FeD2:						
Fairview, moderately eroded	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		
FfD:						
Fairview, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.10	Too clayey	0.24	Large stones content	0.01
			Cutbanks cave	0.10		
FnB2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.10	Too clayey	0.24	Large stones content	0.01
			Cutbanks cave	0.10		
FnC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.37	Slope	0.37	Slope	0.37
	Low strength	0.10	Too clayey	0.24	Large stones content	0.01
			Cutbanks cave	0.10		
FrC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Low strength	0.10	Too clayey	0.24	Slope	0.04
	Slope	0.04	Cutbanks cave	0.10		
			Slope	0.04		
Siloam, moderately eroded	Somewhat limited		Very limited		Very limited	
	Depth to soft bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
	Depth to hard bedrock	0.79	Depth to soft bedrock	1.00	Droughty	0.91
	Shrink-swell	0.50	Slope	0.04	Slope	0.04
FrD2:						
Fairview, moderately eroded	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
Siloam, moderately eroded	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
	Depth to hard bedrock	0.79	Slope	1.00	Droughty	0.91
FsE:						
Fairview	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		
Stott Knob	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.71	Depth to bedrock	0.46
			Depth to soft bedrock	0.46		
FtE:						
Fairview, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.10	Too clayey	0.24	Large stones content	0.01
			Cutbanks cave	0.10		
Stott Knob, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.71	Depth to bedrock	0.46
			Depth to soft bedrock	0.46	Gravel content	0.04
FuB2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Not limited	
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		
Urban land	Not rated		Not rated		Not rated	
FuC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63	Slope	0.63
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		
Urban land	Not rated		Not rated		Not rated	
GrE:						
Greenlee, rubbly	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
			Cutbanks cave	0.10	Droughty	0.56

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
HaA:						
Hatboro, drained----	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
	Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
Hatboro, undrained--	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
	Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
MsC:						
Meadowfield, very stony--------------	Somewhat limited		Very limited		Somewhat limited	
	Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Gravel content	0.94
	Slope	0.63	Cutbanks cave	1.00	Large stones content	0.88
			Slope	0.63	Droughty	0.77
Stott Knob, very stony--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Cutbanks cave	1.00	Slope	0.63
			Slope	0.63	Depth to bedrock	0.16
			Depth to hard bedrock	0.54	Gravel content	0.07
MsD, MsE:						
Meadowfield, very stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.64	Slope	1.00	Gravel content	0.94
			Cutbanks cave	1.00	Large stones content	0.88
Stott Knob, very stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	1.00	Depth to bedrock	0.16
			Depth to hard bedrock	0.54	Gravel content	0.07
Pt:						
Pits, quarry--------	Not rated		Not rated		Not rated	
RbD:						
Rhodhiss, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	0.10		
Bannertown, very rocky--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.46	Slope	1.00	Depth to bedrock	0.71
			Cutbanks cave	1.00	Gravel content	0.08

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
RrE:						
Rhodhiss, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	0.10	Large stones content	0.01
Bannertown, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.46	Slope	1.00	Depth to bedrock	0.71
			Cutbanks cave	1.00	Gravel content	0.08
Rock outcrop	Not rated		Not rated		Not rated	
RsB:						
Rhodhiss, stony	Not limited		Somewhat limited		Somewhat limited	
			Cutbanks cave	0.10	Gravel content	0.01
Stott Knob, stony	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Depth to bedrock	0.16
			Depth to hard bedrock	0.54	Gravel content	0.07
			Depth to soft bedrock	0.15		
RsC:						
Rhodhiss, stony	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63	Slope	0.63
			Cutbanks cave	0.10	Gravel content	0.01
Stott Knob, stony	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Cutbanks cave	1.00	Slope	0.63
			Slope	0.63	Depth to bedrock	0.16
			Depth to hard bedrock	0.54	Gravel content	0.07
RsD, RsE:						
Rhodhiss, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	0.10	Gravel content	0.01
Stott Knob, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	1.00	Depth to bedrock	0.16
			Depth to hard bedrock	0.54	Gravel content	0.07
SrC:						
Siloam	Somewhat limited		Very limited		Very limited	
	Depth to soft bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
	Depth to hard bedrock	0.79	Depth to soft bedrock	1.00	Droughty	0.91
	Shrink-swell	0.50	Slope	0.04	Slope	0.04

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
Redbrush------------	Very limited		Very limited		Somewhat limited	
	Shrink-swell	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.84
	Low strength	1.00	Depth to soft bedrock	0.84	Droughty	0.39
	Slope	0.04	Cutbanks cave	0.10	Slope	0.04
SrE:						
Siloam--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
	Depth to hard bedrock	0.79	Slope	1.00	Droughty	0.910
Redbrush------------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Shrink-swell	1.00	Slope	1.00	Depth to bedrock	0.84
	Low strength	1.00	Depth to soft bedrock	0.84	Droughty	0.39
StC:						
Stott Knob, stony---	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Cutbanks cave	1.00	Slope	0.63
			Slope	0.63	Depth to bedrock	0.16
			Depth to hard bedrock	0.54	Gravel content	0.07
StD, StE:						
Stott Knob, stony---	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	1.00	Depth to bedrock	0.16
			Depth to hard bedrock	0.54	Gravel content	0.07
TaD:						
Tate, extremely stony--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
			Slope	1.00	Large stones content	0.32
					Gravel content	0.01
TcC:						
Tate----------------	Not limited		Very limited		Not limited	
			Cutbanks cave	1.00		
Colvard-------------	Very limited		Very limited		Very limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
			Flooding	0.80		
ToB:						
Toast, rocky--------	Somewhat limited		Somewhat limited		Not limited	
	Low strength	0.10	Too clayey	0.68		
			Cutbanks cave	0.10		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
TtC:						
Toast, very rocky---	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.63	Too clayey	0.68	Slope	0.63
	Low strength	0.10	Slope	0.63		
			Cutbanks cave	0.10		
Bannertown, very rocky--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Depth to hard bedrock	1.00	Depth to bedrock	0.71
	Depth to hard bedrock	0.46	Cutbanks cave	1.00	Slope	0.63
			Depth to soft bedrock	0.71	Gravel content	0.08
TuB:						
Toast, rocky--------	Somewhat limited		Somewhat limited		Not limited	
	Low strength	0.10	Too clayey	0.68		
			Cutbanks cave	0.10		
Urban land----------	Not rated		Not rated		Not rated	
TwC:						
Toast, very rocky---	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.63	Too clayey	0.68	Slope	0.63
	Low strength	0.10	Slope	0.63		
			Cutbanks cave	0.10		
Urban land----------	Not rated		Not rated		Not rated	
Bannertown, very rocky--------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Depth to hard bedrock	1.00	Depth to bedrock	0.71
	Depth to hard bedrock	0.46	Cutbanks cave	1.00	Slope	0.63
			Depth to soft bedrock	0.71	Gravel content	0.08
Ud:						
Udorthents, loamy---	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Droughty	0.01
Ur:						
Urban land----------	Not rated		Not rated		Not rated	
WfB2:						
Woolwine, moderately eroded-------------	Not limited		Very limited		Somewhat limited	
			Cutbanks cave	1.00	Depth to bedrock	0.46
			Depth to soft bedrock	0.46	Droughty	0.33
			Too clayey	0.08		
Fairview, moderately eroded-------------	Somewhat limited		Somewhat limited		Not limited	
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		
Westfield, moderately eroded--	Somewhat limited		Very limited		Not limited	
	Low strength	0.08	Cutbanks cave	1.00		
			Too clayey	0.24		

Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	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
WfC2:						
Woolwine, moderately eroded-------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Cutbanks cave	1.00	Slope	0.63
			Slope	0.63	Depth to bedrock	0.46
			Depth to soft bedrock	0.46	Droughty	0.33
Fairview, moderately eroded-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63	Slope	0.63
	Low strength	0.10	Too clayey	0.24		
			Cutbanks cave	0.10		
Westfield, moderately eroded--	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.63	Cutbanks cave	1.00	Slope	0.63
	Low strength	0.08	Slope	0.63		
			Too clayey	0.24		
WoD, WoE:						
Woolwine, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Cutbanks cave	1.00	Depth to bedrock	0.46
			Depth to soft bedrock	0.46	Droughty	0.43
Fairview, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Too clayey	0.24		
			Cutbanks cave	0.10		
Westfield, stony----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.08	Cutbanks cave	1.00		
			Too clayey	0.24		

Sewage Disposal

(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	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
ArA:				
Arkaqua, undrained--	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
BaC:				
Bandana-------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Depth to saturated zone	1.00
Tate----------------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	1.00
	Slow water movement	0.50		
	Slope	0.04		
Nikwasi, undrained--	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Seepage	1.00
BbB:				
Braddock------------	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.98
			Slope	0.32
BbC:				
Braddock------------	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
			Seepage	0.98
	Slope	0.16		
BbD:				
Braddock------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
BcB:				
Braddock------------	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.98
			Slope	0.32

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BdC:				
Braddock, stony-----	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
	Slope	0.16	Seepage	0.98
BdD:				
Braddock, stony-----	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
BpC:				
Braddock, rubbly----	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
	Slope	0.37	Seepage	0.50
			Large stones content	0.01
Pilot Mountain, rubbly-------------	Very limited		Very limited	
	Large stones content	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Large stones content	1.00
	Slow water movement	0.50	Seepage	1.00
BpD:				
Braddock, rubbly----	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.50
			Large stones content	0.01
Pilot Mountain, rubbly-------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Large stones content	1.00	Large stones content	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
BrD:				
Brevard, very bouldery-----------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
Greenlee, very bouldery-----------	Very limited		Very limited	
	Large stones content	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
	Seepage, bottom layer	1.00	Large stones content	1.00

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
BrE:				
Brevard, very bouldery-----------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
Greenlee, very bouldery-----------	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
CeD:				
Chestnut, very rocky	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
Peaks, very rocky---	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
CeE:				
Chestnut, very rocky	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
Peaks, very rocky---	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
CfF:				
Chestnut, very rocky	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
Peaks, very rocky---	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
Tuckasegee, very rocky--------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
ChE:				
Cleveland, windswept	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--------	Not rated		Not rated	
Peaks, windswept----	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
CkF:				
Cleveland, windswept	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--------	Not rated		Not rated	
Peaks, windswept----	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
CmD:				
Cliffield, very stony--------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slope	1.00	Slope	1.00
			Seepage	0.50
Cowee, very stony---	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
CnE:				
Cliffield, very rocky--------------	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	0.50
Cowee, very rocky---	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
CoD:				
Cliffield, rubbly---	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Large stones content	1.00	Slope	1.00
	Slope	1.00	Large stones content	1.00
Sauratown, rubbly---	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slope	1.00	Depth to soft bedrock	1.00
	Slow water movement	0.50	Slope	1.00
CoE:				
Cliffield, rubbly---	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Large stones content	1.00	Large stones content	1.00
Sauratown, rubbly---	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slow water movement	0.50	Slope	1.00
CrB2:				
Clifford, moderately eroded-------------	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.92
			Slope	0.32
CsA:				
Colvard-------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
Suches--------------	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
CwC:				
Cowee, stony--------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Slope	1.00
	Slope	0.63	Seepage	1.00

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
CwD, CwE:				
Cowee, stony	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
CxF:				
Cowee, rocky	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
Saluda, rocky	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	1.00	Slope	1.00
			Seepage	0.50
Evard, rocky	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
DAM:				
Dam	Not rated		Not rated	
DeF:				
Devotion, very rocky	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
Rhodhiss, very rocky	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
Bannertown, very rocky	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Slope	1.00
DrB:				
Dillard	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Seepage	0.50
	Flooding	0.40	Flooding	0.40

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
EcC:				
Evard, stony----------	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
	Slope	0.63	Seepage	1.00
	Slow water movement	0.50		
Cowee, stony----------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Slope	1.00
	Slope	0.63	Seepage	1.00
EcD, EcE:				
Evard, stony----------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
Cowee, stony----------	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
FeB2:				
Fairview, moderately eroded-------------	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.98
			Slope	0.32
FeC2:				
Fairview, moderately eroded-------------	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
	Slope	0.37	Seepage	0.98
FeD2:				
Fairview, moderately eroded-------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
FfD:				
Fairview, stony-----	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
FnB2:				
Fairview, moderately eroded-------------	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.98
			Slope	0.32

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
FnC2:				
Fairview, moderately eroded	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
	Slope	0.37	Seepage	0.98
FrC2:				
Fairview, moderately eroded	Somewhat limited		Very limited	
	Slow water movement	0.50	Slope	1.00
	Slope	0.04	Seepage	0.98
Siloam, moderately eroded	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.04	Depth to soft bedrock	1.00
			Slope	1.00
FrD2:				
Fairview, moderately eroded	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
Siloam, moderately eroded	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
FsE:				
Fairview	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
Stott Knob	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
FtE:				
Fairview, stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
Stott Knob, stony	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
FuB2:				
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.98
			Slope	0.32
Urban land	Not rated		Not rated	
FuC2:				
Fairview, moderately eroded	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
Urban land	Not rated		Not rated	
GrE:				
Greenlee, rubbly	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
HaA:				
Hatboro, drained	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
Hatboro, undrained	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
MsC:				
Meadowfield, very stony	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.63	Slope	1.00
	Slow water movement	0.02	Seepage	0.98
Stott Knob, very stony	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Depth to hard bedrock	0.54
MsD, MsE:				
Meadowfield, very stony	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slow water movement	0.02	Seepage	0.98

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Stott Knob, very stony	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slow water movement	0.50	Depth to hard bedrock	0.54
Pt:				
Pits, quarry	Not rated		Not rated	
RbD:				
Rhodhiss, very rocky	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
Bannertown, very rocky	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Slope	1.00
RrE:				
Rhodhiss, very bouldery	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
Bannertown, very bouldery	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Seepage, bottom layer	1.00	Slope	1.00
Rock outcrop	Not rated		Not rated	
RsB:				
Rhodhiss, stony	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50	Slope	0.32
Stott Knob, stony	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slow water movement movement	0.50	Depth to hard bedrock	0.54
			Seepage	0.50

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
RsC:				
Rhodhiss, stony-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
	Slope	0.63	Seepage	1.00
	Slow water movement	0.50		
Stott Knob, stony---	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Depth to hard bedrock	0.54
RsD, RsE:				
Rhodhiss, stony-----	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
Stott Knob, stony---	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slow water movement	0.50	Depth to hard bedrock	0.54
SrC:				
Siloam--------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.04	Depth to soft bedrock	1.00
			Slope	1.00
Redbrush------------	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slow water movement	1.00	Depth to soft bedrock	1.00
	Slope	0.04	Slope	1.00
SrE:				
Siloam--------------	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
Redbrush------------	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slow water movement	1.00	Slope	1.00

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
StC:				
Stott Knob, stony	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Depth to hard bedrock	0.54
StD, StE:				
Stott Knob, stony	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slow water movement	0.50	Depth to hard bedrock	0.54
TaD:				
Tate, extremely stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50		
TcC:				
Tate	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50	Slope	0.92
Colvard	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
ToB:				
Toast, rocky	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
	Slow water movement	0.50	Slope	0.32
TtC:				
Toast, very rocky	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
	Slope	0.63	Seepage	1.00
	Slow water movement	0.50		
Bannertown, very rocky	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Seepage, bottom layer	1.00	Depth to soft bedrock	1.00
	Slope	0.63	Slope	1.00

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
TuB:				
Toast, rocky	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.32
	Slow water movement	0.50		
Urban land	Not rated		Not rated	
TwC:				
Toast, very rocky	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
			Seepage	1.00
	Slope	0.63		
	Slow water movement	0.50		
Urban land	Not rated		Not rated	
Bannertown, very rocky	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Seepage, bottom layer	1.00	Depth to soft bedrock	1.00
	Slope	0.63		
			Slope	1.00
Ud:				
Udorthents, loamy	Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00
			Slope	0.68
Ur:				
Urban land	Not rated		Not rated	
WfB2:				
Woolwine, moderately eroded	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slow water movement	0.50		
			Slope	0.68
			Seepage	0.50
Fairview, moderately eroded	Somewhat limited		Somewhat limited	
	Slow water movement	0.50	Seepage	0.98
			Slope	0.68
Westfield, moderately eroded	Somewhat limited		Somewhat limited	
	Depth to bedrock	0.86	Seepage	0.98
	Slow water movement	0.50	Slope	0.68
			Depth to soft bedrock	0.61

Sewage Disposal—Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
WfC2:				
Woolwine, moderately eroded	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Seepage	0.50
Fairview, moderately eroded	Somewhat limited		Very limited	
	Slope	0.63	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
Westfield, moderately eroded	Somewhat limited		Very limited	
	Depth to bedrock	0.86	Slope	1.00
	Slope	0.63	Seepage	0.98
	Slow water movement	0.50	Depth to soft bedrock	0.61
WoD, WoE:				
Woolwine, stony	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.50
Fairview, stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slow water movement	0.50	Seepage	0.98
Westfield, stony	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Depth to bedrock	0.86	Seepage	0.98
	Slow water movement	0.50	Depth to soft bedrock	0.61

Landfills

(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	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
ArA:						
Arkaqua, undrained	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
	Seepage, bottom layer	1.00				
BaC:						
Bandana	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	Seepage	0.50
	Seepage, bottom layer	1.00	Seepage	1.00		
Tate	Very limited		Somewhat limited		Somewhat limited	
	Seepage, bottom layer	1.00	Slope	0.04	Slope	0.04
	Slope	0.04				
Nikwasi, undrained	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	Seepage	0.50
BbB:						
Braddock	Very limited		Not limited		Very limited	
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
BbC:						
Braddock	Very limited		Somewhat limited		Very limited	
	Too clayey	1.00	Slope	0.16	Too clayey	1.00
	Slope	0.16			Hard to compact	1.00
					Slope	0.16
BbD:						
Braddock	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
BcB:						
Braddock	Very limited		Not limited		Very limited	
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
BdC:						
Braddock, stony	Very limited		Somewhat limited		Very limited	
	Too clayey	1.00	Slope	0.16	Too clayey	1.00
	Slope	0.16			Hard to compact	1.00
					Slope	0.16

Landfills—Continued

Map symbol and soil name	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
BdD:						
Braddock, stony	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
BpC:						
Braddock, rubbly	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
Pilot Mountain, rubbly	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
BpD:						
Braddock, rubbly	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
Pilot Mountain, rubbly	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
BrD, BrE:						
Brevard, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00			Gravel content	0.07
Greenlee, very bouldery	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	0.50
CeD:						
Chestnut, very rocky	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Peaks, very rocky	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99

Landfills—Continued

Map symbol and soil name	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
CeE:						
Chestnut, very rocky	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
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Peaks, very rocky---	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
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
CfF:						
Chestnut, very rocky	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
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Peaks, very rocky---	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
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
Tuckasegee, very rocky--------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
					Gravel content	0.23
ChE:						
Cleveland, windswept	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00			Seepage	0.50
Rock outcrop--------	Not rated		Very limited		Not rated	
			Depth to bedrock	1.00		
			Slope	1.00		
Peaks, windswept----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
CkF:						
Cleveland, windswept	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	0.50
Rock outcrop--------	Not rated		Very limited		Not rated	
			Slope	1.00		
			Depth to bedrock	1.00		

Landfills—Continued

Map symbol and soil name	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
Peaks, windswept	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
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
CmD:						
Cliffield, very stony	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.22
Cowee, very stony	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.11
CnE:						
Cliffield, very rocky	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
Cowee, very rocky	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
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.11
CoD:						
Cliffield, rubbly	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Large stones	1.00	Slope	1.00	Large stones	1.00
	Slope	1.00			Slope	1.00
Sauratown, rubbly	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Large stones content	0.02			Large stones content	0.02
CoE:						
Cliffield, rubbly	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
	Large stones	1.00			Large stones	1.00
Sauratown, rubbly	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
	Large stones content	0.02			Large stones content	0.02
CrB2:						
Clifford, moderately eroded	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Landfills—Continued

Map symbol and soil name	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
CsA:						
Colvard	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Seepage	0.50
	Seepage, bottom layer	1.00	Seepage	1.00		
Suches	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Too clayey	0.50
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.47
	Seepage, bottom layer	1.00				
CwC:						
Cowee, stony	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	Slope	0.63
			Slope	0.63	Gravel content	0.11
	Slope	0.63				
CwD, CwE:						
Cowee, stony	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
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.11
CxF:						
Cowee, rocky	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
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.11
Saluda, rocky	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
Evard, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
					Seepage	0.31
DAM:						
Dam	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	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
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Rhodhiss, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00			Seepage	0.50
					Too clayey	0.50

Landfills—Continued

Map symbol and soil name	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
Bannertown, very rocky	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
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
DrB:						
Dillard	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	Flooding	0.40		
	Flooding	0.40				
EcC:						
Evard, stony	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Slope	0.63
			Slope	0.63	Too clayey	0.50
	Slope	0.63			Seepage	0.31
Cowee, stony	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	Slope	0.63
			Slope	0.63	Gravel content	0.11
	Slope	0.63				
EcD, EcE:						
Evard, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
					Seepage	0.31
Cowee, stony	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
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.11
FeB2:						
Fairview, moderately eroded	Not limited		Not limited		Not limited	
FeC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.37	Slope	0.37	Slope	0.37
FeD2:						
Fairview, moderately eroded	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
FfD:						
Fairview, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
FnB2:						
Fairview, moderately eroded	Not limited		Not limited		Not limited	

Landfills—Continued

Map symbol and soil name	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
FnC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.37	Slope	0.37	Slope	0.37
FrC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.04	Slope	0.04	Slope	0.04
Siloam, moderately eroded	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.04	Slope	0.04	Slope	0.04
FrD2:						
Fairview, moderately eroded	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Siloam, moderately eroded	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
FsE:						
Fairview	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Stott Knob	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
	Seepage, bottom layer	1.00	Seepage	1.00		
FtE:						
Fairview, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Stott Knob, stony	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
	Seepage, bottom layer	1.00	Seepage	1.00		
FuB2:						
Fairview, moderately eroded	Not limited		Not limited		Not limited	
Urban land	Not rated		Not limited		Not rated	
FuC2:						
Fairview, moderately eroded	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63	Slope	0.63
Urban land	Not rated		Somewhat limited		Not rated	
			Slope	0.63		

Landfills—Continued

Map symbol and soil name	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
GrE:						
Greenlee, rubbly	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
HaA:						
Hatboro, drained	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	Seepage	0.50
Hatboro, undrained	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	Seepage	0.50
MsC:						
Meadowfield, very stony	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.63	Slope	0.63	Gravel content	0.96
	Too clayey	0.50			Slope	0.63
Stott Knob, very stony	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.63	Slope	0.63	Slope	0.63
MsD, MsE:						
Meadowfield, very stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Gravel content	0.96
Stott Knob, very stony	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
Pt:						
Pits, quarry	Not rated		Very limited		Not rated	
			Depth to bedrock	1.00		
			Slope	1.00		
RbD:						
Rhodhiss, very rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Bannertown, very rocky	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
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50

Landfills—Continued

Map symbol and soil name	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
RrE:						
Rhodhiss, very bouldery	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Bannertown, very bouldery	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
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Rock outcrop	Not rated		Very limited		Not rated	
			Slope	1.00		
			Depth to bedrock	1.00		
RsB:						
Rhodhiss, stony	Very limited		Not limited		Somewhat limited	
	Seepage, bottom layer	1.00			Seepage	0.50
					Too clayey	0.50
Stott Knob, stony	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
RsC:						
Rhodhiss, stony	Very limited		Somewhat limited		Somewhat limited	
	Seepage, bottom layer	1.00	Slope	0.63	Slope	0.63
	Slope	0.63			Seepage	0.50
					Too clayey	0.50
Stott Knob, stony	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.63	Slope	0.63	Slope	0.63
RsD, RsE:						
Rhodhiss, stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00			Seepage	0.50
					Too clayey	0.50
Stott Knob, stony	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
SrC:						
Siloam	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.04	Slope	0.04	Slope	0.04
Redbrush	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Too clayey	1.00
	Too clayey	1.00	Slope	0.04	Hard to compact	1.00
	Slope	0.04			Depth to bedrock	1.00

Landfills—Continued

Map symbol and soil name	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
SrE:						
Siloam	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
Redbrush	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	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
StC:						
Stott Knob, stony	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.63	Slope	0.63	Slope	0.63
StD, StE:						
Stott Knob, stony	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
TaD:						
Tate, extremely stony	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00				
TcC:						
Tate	Very limited		Not limited		Not limited	
	Seepage, bottom layer	1.00				
Colvard	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Seepage	0.50
	Seepage, bottom layer	1.00	Seepage	1.00		
ToB:						
Toast, rocky	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
TtC:						
Toast, very rocky	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Slope	0.63
	Slope	0.63	Slope	0.63	Seepage	0.50
Bannertown, very rocky	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	Slope	0.63
	Slope	0.63	Slope	0.63	Seepage	0.50
TuB:						
Toast, rocky	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
Urban land	Not rated		Not limited		Not rated	

Landfills—Continued

Map symbol and soil name	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
TwC:						
Toast, very rocky---	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Slope	0.63
	Slope	0.63	Slope	0.63	Seepage	0.50
Urban land----------	Not rated		Somewhat limited		Not rated	
			Slope	0.63		
Bannertown, very rocky--------------	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	Slope	0.63
	Slope	0.63	Slope	0.63	Seepage	0.50
Ud:						
Udorthents, loamy---	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	0.50
	Too sandy	0.50			Seepage	0.01
Ur:						
Urban land----------	Not rated		Very limited		Not rated	
			Slope	1.00		
WfB2:						
Woolwine, moderately eroded-------------	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			Too clayey	0.50
Fairview, moderately eroded-------------	Not limited		Not limited		Not limited	
Westfield, moderately eroded--	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.61	Depth to bedrock	0.61
	Too clayey	0.50			Too clayey	0.50
WfC2:						
Woolwine, moderately eroded-------------	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.63	Slope	0.63	Slope	0.63
	Too clayey	0.50			Too clayey	0.50
Fairview, moderately eroded-------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.63	Slope	0.63	Slope	0.63
Westfield, moderately eroded--	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Slope	0.63	Slope	0.63
	Slope	0.63	Depth to bedrock	0.61	Depth to bedrock	0.61
	Too clayey	0.50			Too clayey	0.50

Landfills—Continued

Map symbol and soil name	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
WoD, WoE:						
Woolwine, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
Fairview, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Westfield, stony----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	0.61	Depth to bedrock	0.61
	Too clayey	0.50			Too clayey	0.50

Source of Gravel and Sand

(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	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
ArA:				
Arkaqua, undrained	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
BaC:				
Bandana	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.01
	Thickest layer	0.00	Bottom layer	0.79
Tate	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.04
Nikwasi, undrained	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.03
BbB:				
Braddock	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
BbC, BbD:				
Braddock	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
BcB:				
Braddock	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
BdC:				
Braddock, stony	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
BdD:				
Braddock, stony	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
BpC:				
Braddock, rubbly	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Pilot Mountain, rubbly	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
BpD:				
Braddock, rubbly----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Pilot Mountain, rubbly-------------	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00
BrD:				
Brevard, very bouldery-----------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
Greenlee, very bouldery-----------	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BrE:				
Brevard, very bouldery-----------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
Greenlee, very bouldery-----------	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00
CeD:				
Chestnut, very rocky	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.01
	Thickest layer	0.00	Thickest layer	0.01
Peaks, very rocky---	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.01
	Thickest layer	0.00	Thickest layer	0.02
CeE:				
Chestnut, very rocky	Poor		Fair	
	Thickest layer	0.00	Bottom layer	0.01
	Bottom layer	0.00	Thickest layer	0.01
Peaks, very rocky---	Poor		Fair	
	Thickest layer	0.00	Bottom layer	0.01
	Bottom layer	0.00	Thickest layer	0.02
CfF:				
Chestnut, very rocky	Poor		Fair	
	Thickest layer	0.00	Bottom layer	0.01
	Bottom layer	0.00	Thickest layer	0.01
Peaks, very rocky---	Poor		Fair	
	Thickest layer	0.00	Bottom layer	0.01
	Bottom layer	0.00	Thickest layer	0.02

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
Tuckasegee, very rocky	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
ChE:				
Cleveland, windswept	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00
Rock outcrop	Not rated		Not rated	
Peaks, windswept	Poor		Fair	
	Bottom layer	0.00	Bottom layer	0.01
	Thickest layer	0.00	Thickest layer	0.02
CkF:				
Cleveland, windswept	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Rock outcrop	Not rated		Not rated	
Peaks, windswept	Poor		Fair	
	Thickest layer	0.00	Bottom layer	0.01
	Bottom layer	0.00	Thickest layer	0.02
CmD:				
Cliffield, very stony	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Cowee, very stony	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
CnE:				
Cliffield, very rocky	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Cowee, very rocky	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
CoD:				
Cliffield, rubbly	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Sauratown, rubbly	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
CoE:				
Cliffield, rubbly	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
Sauratown, rubbly	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
CrB2:				
Clifford, moderately eroded	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
CsA:				
Colvard	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.02
Suches	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
CwC, CwD:				
Cowee, stony	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
CwE:				
Cowee, stony	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
CxF:				
Cowee, rocky	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
Saluda, rocky	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Evard, rocky	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
DAM:				
Dam	Not rated		Not rated	
DeF:				
Devotion, very rocky	Poor		Fair	
	Thickest layer	0.00	Bottom layer	0.01
	Bottom layer	0.00	Thickest layer	0.01
Rhodhiss, very rocky	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
Bannertown, very rocky	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.02

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
DrB:				
Dillard---------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
EcC:				
Evard, stony--------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
Cowee, stony--------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
EcD:				
Evard, stony--------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
Cowee, stony--------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
EcE:				
Evard, stony--------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
Cowee, stony--------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
FeB2, FeC2, FeD2:				
Fairview, moderately eroded-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
FfD:				
Fairview, stony-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
FnB2:				
Fairview, moderately eroded-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
FnC2:				
Fairview, moderately eroded-------------	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
FrC2:				
Fairview, moderately eroded-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
Siloam, moderately eroded-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
FrD2:				
Fairview, moderately eroded-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Siloam, moderately eroded-------------	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
FsE:				
Fairview------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Stott Knob----------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
FtE:				
Fairview, stony-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Stott Knob, stony---	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
FuB2, FuC2:				
Fairview, moderately eroded-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Urban land----------	Not rated		Not rated	
GrE:				
Greenlee, rubbly----	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00
HaA:				
Hatboro, drained----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.10
Hatboro, undrained--	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.10
MsC:				
Meadowfield, very stony--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
Stott Knob, very stony----------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
MsD, MsE:				
Meadowfield, very stony----------------	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Stott Knob, very stony----------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Pt:				
Pits, quarry--------	Not rated		Not rated	
RbD:				
Rhodhiss, very rocky	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.05
Bannertown, very rocky----------------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.02
RrE:				
Rhodhiss, very bouldery-----------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.05
Bannertown, very bouldery-----------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.02
Rock outcrop--------	Not rated		Not rated	
RsB:				
Rhodhiss, stony-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
Stott Knob, stony---	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
RsC:				
Rhodhiss, stony-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
Stott Knob, stony---	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
RsD:				
Rhodhiss, stony-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.01
Stott Knob, stony---	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
RsE:				
Rhodhiss, stony-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.01
Stott Knob, stony---	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
SrC:				
Siloam--------------	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Redbrush------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
SrE:				
Siloam--------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Redbrush------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
StC, StE:				
Stott Knob, stony---	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
StD:				
Stott Knob, stony---	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
TaD:				
Tate, extremely stony--------------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.04
TcC:				
Tate----------------	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.04
Colvard-------------	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.02

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
ToB:				
Toast, rocky	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.05
TtC:				
Toast, very rocky	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.05
Bannertown, very rocky	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.02
TuB:				
Toast, rocky	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.05
Urban land	Not rated		Not rated	
TwC:				
Toast, very rocky	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.05
Urban land	Not rated		Not rated	
Bannertown, very rocky	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.02
Ud:				
Udorthents, loamy	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Ur:				
Urban land	Not rated		Not rated	
WfB2:				
Woolwine, moderately eroded	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Fairview, moderately eroded	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Westfield, moderately eroded	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Source of Gravel and Sand—Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
WfC2:				
Woolwine, moderately eroded-------------	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Fairview, moderately eroded-------------	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Westfield, moderately eroded--	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
WoD:				
Woolwine, stony-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Fairview, stony-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Westfield, stony----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
WoE:				
Woolwine, stony-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Fairview, stony-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
Westfield, stony----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00

Source of Reclamation Material, Roadfill, and Topsoil

(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	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
ArA:						
Arkaqua, undrained	Fair		Poor		Poor	
	Too acid	0.92	Wetness depth	0.00	Wetness depth	0.00
BaC:						
Bandana	Fair		Poor		Poor	
	Droughty	0.58	Wetness depth	0.00	Wetness depth	0.00
	Too acid	0.84				
Tate	Fair		Good		Fair	
	Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
	Too acid	0.68			Rock fragments	0.88
					Slope	0.96
Nikwasi, undrained	Fair		Poor		Poor	
	Too acid	0.50	Wetness depth	0.00	Wetness depth	0.00
					Too acid	0.76
BbB:						
Braddock	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Too clayey	0.00
	Organic matter content low	0.12	Shrink-swell	0.90	Hard to reclaim (rock fragments)	0.68
	Too acid	0.32			Too acid	0.88
BbC:						
Braddock	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Too clayey	0.00
	Organic matter content low	0.12	Shrink-swell	0.90	Hard to reclaim (rock fragments)	0.68
	Too acid	0.32			Slope	0.84
BbD:						
Braddock	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Slope	0.00
	Organic matter content low	0.12	Slope	0.50	Too clayey	0.00
			Shrink-swell	0.90	Hard to reclaim (rock fragments)	0.68
	Too acid	0.32				
BcB:						
Braddock	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Too clayey	0.00
	Organic matter content low	0.12	Shrink-swell	0.90	Hard to reclaim (rock fragments)	0.68
	Too acid	0.32			Too acid	0.88
BdC:						
Braddock, stony	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Too clayey	0.00
	Organic matter content low	0.12	Shrink-swell	0.90	Hard to reclaim (rock fragments)	0.68
	Too acid	0.32			Slope	0.84

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
BdD:						
Braddock, stony-----	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Slope	0.00
	Organic matter content low	0.12	Slope	0.50	Too clayey	0.00
			Shrink-swell	0.90	Hard to reclaim (rock fragments)	0.68
	Too acid	0.32				
BpC:						
Braddock, rubbly----	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Too clayey	0.00
	Organic matter content low	0.12	Shrink-swell	0.87	Slope	0.63
					Rock fragments	0.82
	Too acid	0.32				
Pilot Mountain, rubbly-------------	Poor		Poor		Poor	
	Stone content	0.00	Cobble content	0.00	Rock fragments	0.00
	Organic matter content low	0.12	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
	Cobble content	0.13			Slope	0.63
BpD:						
Braddock, rubbly----	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12	Low strength	0.22	Too clayey	0.00
			Shrink-swell	0.87	Rock fragments	0.82
	Too acid	0.32				
Pilot Mountain, rubbly-------------	Poor		Poor		Poor	
	Stone content	0.00	Cobble content	0.00	Slope	0.00
	Organic matter content low	0.12	Stone content	0.00	Rock fragments	0.00
			Slope	0.00	Hard to reclaim (rock fragments)	0.00
	Cobble content	0.13				
BrD:						
Brevard, very bouldery-----------	Fair		Fair		Poor	
	Organic matter content low	0.12	Slope	0.92	Slope	0.00
					Rock fragments	0.12
	Too acid	0.54			Hard to reclaim (rock fragments)	0.32
Greenlee, very bouldery-----------	Poor		Poor		Poor	
	Stone content	0.00	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
	Organic matter content low	0.12	Cobble content	0.01	Rock fragments	0.00
			Slope	0.92	Slope	0.00
	Too acid	0.50				
BrE:						
Brevard, very bouldery-----------	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Slope	0.00
					Rock fragments	0.12
	Too acid	0.54			Hard to reclaim (rock fragments)	0.32

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
Greenlee, very bouldery----------	Poor		Poor		Poor	
	Stone content	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
			Cobble content	0.01		
	Too acid	0.50			Rock fragments	0.00
CeD:						
Chestnut, very rocky	Fair		Poor		Poor	
	Droughty	0.17	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.46	Slope	0.92	Rock fragments	0.00
	Too acid	0.50			Depth to bedrock	0.46
Peaks, very rocky---	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Organic matter content low	0.12	Slope	0.92	Slope	0.00
					Depth to bedrock	0.29
	Depth to bedrock	0.29				
CeE:						
Chestnut, very rocky	Fair		Poor		Poor	
	Droughty	0.17	Slope	0.00	Slope	0.00
	Depth to bedrock	0.46	Depth to bedrock	0.00	Rock fragments	0.00
	Too acid	0.50			Depth to bedrock	0.46
Peaks, very rocky---	Poor		Poor		Poor	
	Droughty	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12	Depth to bedrock	0.00	Rock fragments	0.00
					Depth to bedrock	0.29
	Depth to bedrock	0.29				
CfF:						
Chestnut, very rocky	Fair		Poor		Poor	
	Droughty	0.17	Slope	0.00	Slope	0.00
	Depth to bedrock	0.46	Depth to bedrock	0.00	Rock fragments	0.00
	Too acid	0.50			Depth to bedrock	0.46
Peaks, very rocky---	Poor		Poor		Poor	
	Droughty	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12	Depth to bedrock	0.00	Rock fragments	0.00
					Depth to bedrock	0.29
	Depth to bedrock	0.29				
Tuckasegee, very rocky--------------	Fair		Poor		Poor	
	Too acid	0.92	Slope	0.00	Slope	0.00
					Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.08
ChE:						
Cleveland, windswept	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Depth to bedrock	0.00	Slope	0.00	Slope	0.00
	Too acid	0.54			Rock fragments	0.00
Rock outcrop--------	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
Peaks, windswept----	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Organic matter content low	0.12	Slope	0.00	Slope	0.00
	Depth to bedrock	0.29			Depth to bedrock	0.29
CkF:						
Cleveland, windswept	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
	Too acid	0.54			Rock fragments	0.00
Rock outcrop--------	Not rated		Not rated		Not rated	
Peaks, windswept----	Poor		Poor		Poor	
	Droughty	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.29			Depth to bedrock	0.29
CmD:						
Cliffield, very stony--------------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.05	Slope	0.92	Slope	0.00
	Too acid	0.50			Depth to bedrock	0.05
Cowee, very stony---	Fair		Poor		Poor	
	Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
	Droughty	0.79	Slope	0.92	Rock fragments	0.00
	Depth to bedrock	0.84			Depth to bedrock	0.84
CnE:						
Cliffield, very rocky--------------	Poor		Poor		Poor	
	Droughty	0.00	Slope	0.00	Slope	0.00
	Depth to bedrock	0.05	Depth to bedrock	0.00	Rock fragments	0.00
	Too acid	0.50			Depth to bedrock	0.05
Cowee, very rocky---	Fair		Poor		Poor	
	Too acid	0.50	Slope	0.00	Slope	0.00
	Droughty	0.79	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.84			Depth to bedrock	0.84
CoD:						
Cliffield, rubbly---	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Stone content	0.00	Stone content	0.00	Slope	0.00
	Depth to bedrock	0.29	Cobble content	0.84	Depth to bedrock	0.29
Sauratown, rubbly---	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.21	Slope	0.92	Rock fragments	0.10
	Too acid	0.50			Depth to bedrock	0.21
CoE:						
Cliffield, rubbly---	Poor		Poor		Poor	
	Droughty	0.00	Slope	0.00	Slope	0.00
	Stone content	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.29	Stone content	0.00	Depth to bedrock	0.29

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
Sauratown, rubbly---	Poor		Poor		Poor	
	Droughty	0.00	Slope	0.00	Slope	0.00
	Depth to bedrock	0.21	Depth to bedrock	0.00	Rock fragments	0.10
	Too acid	0.50			Depth to bedrock	0.21
CrB2:						
Clifford, moderately eroded-------------	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.78	Too clayey	0.00
	Organic matter content low	0.12			Too acid	0.95
	Too acid	0.46				
CsA:						
Colvard-------------	Fair		Good		Fair	
	Too acid	0.68			Hard to reclaim (rock fragments)	0.32
	Organic matter content low	0.88				
	Water erosion	0.99				
Suches--------------	Fair		Fair		Fair	
	Too acid	0.84	Low strength	0.22	Wetness depth	0.89
	Water erosion	0.99	Wetness depth	0.89		
CwC:						
Cowee, stony--------	Fair		Poor		Poor	
	Too acid	0.50	Depth to bedrock	0.00	Rock fragments	0.00
	Droughty	0.79			Slope	0.37
	Depth to bedrock	0.84			Depth to bedrock	0.84
CwD:						
Cowee, stony--------	Fair		Poor		Poor	
	Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
	Droughty	0.79	Slope	0.50	Rock fragments	0.00
	Depth to bedrock	0.84			Depth to bedrock	0.84
CwE:						
Cowee, stony--------	Fair		Poor		Poor	
	Too acid	0.50	Slope	0.00	Slope	0.00
	Droughty	0.79	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.84			Depth to bedrock	0.84
CxF:						
Cowee, rocky--------	Fair		Poor		Poor	
	Too acid	0.50	Slope	0.00	Slope	0.00
	Droughty	0.79	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.84			Depth to bedrock	0.84
Saluda, rocky-------	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
	Too acid	0.50			Rock fragments	0.50
Evard, rocky--------	Fair		Poor		Poor	
	Too acid	0.50	Slope	0.00	Slope	0.00
	Organic matter content low	0.50			Too clayey	0.66
	Too clayey	0.92			Too acid	0.88
DAM:						
Dam-----------------	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
DeF:						
Devotion, very rocky	Fair		Poor		Poor	
	Droughty	0.10	Slope	0.00	Slope	0.00
	Depth to bedrock	0.10	Depth to bedrock	0.00	Depth to bedrock	0.10
	Too acid	0.50			Rock fragments	0.12
Rhodhiss, very rocky	Fair		Poor		Poor	
	Too acid	0.32	Slope	0.00	Slope	0.00
	Organic matter content low	0.50				
Bannertown, very rocky	Fair		Poor		Poor	
	Droughty	0.25	Slope	0.00	Slope	0.00
	Depth to bedrock	0.29	Depth to bedrock	0.00	Rock fragments	0.12
	Too acid	0.50			Depth to bedrock	0.29
DrB:						
Dillard	Fair		Poor		Fair	
	Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.53
			Wetness depth	0.53		
	Too acid	0.68				
EcC:						
Evard, stony	Fair		Good		Fair	
	Too acid	0.50			Slope	0.37
	Organic matter content low	0.50			Too clayey	0.66
					Too acid	0.88
	Too clayey	0.92				
Cowee, stony	Fair		Poor		Poor	
	Too acid	0.50	Depth to bedrock	0.00	Rock fragments	0.00
	Droughty	0.79			Slope	0.37
	Depth to bedrock	0.84			Depth to bedrock	0.84
EcD:						
Evard, stony	Fair		Fair		Poor	
	Too acid	0.50	Slope	0.50	Slope	0.00
	Organic matter content low	0.50			Too clayey	0.66
					Too acid	0.88
	Too clayey	0.92				
Cowee, stony	Fair		Poor		Poor	
	Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
	Droughty	0.79	Slope	0.50	Rock fragments	0.00
	Depth to bedrock	0.84			Depth to bedrock	0.84
EcE:						
Evard, stony	Fair		Poor		Poor	
	Too acid	0.50	Slope	0.00	Slope	0.00
	Organic matter content low	0.50			Too clayey	0.66
					Too acid	0.88
	Too clayey	0.92				
Cowee, stony	Fair		Poor		Poor	
	Too acid	0.50	Slope	0.00	Slope	0.00
	Droughty	0.79	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.84			Depth to bedrock	0.84

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
FeB2:						
Fairview, moderately eroded-------------	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12				
	Too acid	0.68				
FeC2:						
Fairview, moderately eroded-------------	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Slope	0.63
	Too acid	0.68				
FeD2:						
Fairview, moderately eroded-------------	Poor		Fair		Poor	
	Too clayey	0.00	Slope	0.50	Slope	0.00
	Organic matter content low	0.12			Too clayey	0.00
	Too acid	0.68				
FfD:						
Fairview, stony-----	Poor		Fair		Poor	
	Too clayey	0.00	Slope	0.50	Slope	0.00
	Organic matter content low	0.12			Too clayey	0.00
	Too acid	0.68				
FnB2:						
Fairview, moderately eroded-------------	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12				
	Too acid	0.68				
FnC2:						
Fairview, moderately eroded-------------	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Slope	0.63
	Too acid	0.68				
FrC2:						
Fairview, moderately eroded-------------	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Slope	0.96
	Too acid	0.68				
Siloam, moderately eroded-------------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Depth to bedrock	0.00	Shrink-swell	0.87	Rock fragments	0.88
					Slope	0.96

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
FrD2:						
Fairview, moderately eroded	Poor		Fair		Poor	
	Too clayey	0.00	Slope	0.50	Slope	0.00
	Organic matter content low	0.12			Too clayey	0.00
	Too acid	0.68				
Siloam, moderately eroded	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
			Shrink-swell	0.87	Rock fragments	0.88
FsE:						
Fairview	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12			Too clayey	0.00
	Too acid	0.68				
Stott Knob	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Slope	0.00
			Depth to bedrock	0.00	Rock fragments	0.50
	Too acid	0.50			Depth to bedrock	0.54
	Depth to bedrock	0.54				
FtE:						
Fairview, stony	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12			Too clayey	0.00
	Too acid	0.68				
Stott Knob, stony	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Slope	0.00
			Depth to bedrock	0.00	Rock fragments	0.50
	Too acid	0.50			Depth to bedrock	0.5
	Depth to bedrock	0.54				
FuB2:						
Fairview, moderately eroded	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12				
	Too acid	0.68				
Urban land	Not rated		Not rated		Not rated	
FuC2:						
Fairview, moderately eroded	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Slope	0.37
	Too acid	0.68				
Urban land	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
GrE:						
Greenlee, rubbly----	Poor		Poor		Poor	
	Stone content	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12	Stone content	0.00	Hard to reclaim (rock fragments)	0.00
			Cobble content	0.01		
	Too acid	0.50			Rock fragments	0.00
HaA:						
Hatboro, drained----	Fair		Poor		Poor	
	Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
					Hard to reclaim (rock fragments)	0.00
	Too acid	0.74				
Hatboro, undrained--	Fair		Poor		Poor	
	Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
					Hard to reclaim (rock fragments)	0.00
	Too acid	0.74				
MsC:						
Meadowfield, very stony--------------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.35			Depth to bedrock	0.35
	Too acid	0.50			Slope	0.37
Stott Knob, very stony--------------	Fair		Poor		Fair	
	Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.37
					Rock fragments	0.50
	Too acid	0.50			Too acid	0.76
	Droughty	0.75				
MsD:						
Meadowfield, very stony--------------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.35	Slope	0.50	Rock fragments	0.00
	Too acid	0.50			Depth to bedrock	0.35
Stott Knob, very stony--------------	Fair		Poor		Poor	
	Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
			Slope	0.50	Rock fragments	0.50
	Too acid	0.50			Too acid	0.76
	Droughty	0.75				
MsE:						
Meadowfield, very stony--------------	Poor		Poor		Poor	
	Droughty	0.00	Slope	0.00	Slope	0.00
	Depth to bedrock	0.35	Depth to bedrock	0.00	Rock fragments	0.00
	Too acid	0.50			Depth to bedrock	0.35
Stott Knob, very stony--------------	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Slope	0.00
			Depth to bedrock	0.00	Rock fragments	0.50
	Too acid	0.50			Too acid	0.76
	Droughty	0.75				

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
Pt:						
Pits, quarry	Not rated		Not rated		Not rated	
RbD:						
Rhodhiss, very rocky	Fair		Fair		Poor	
	Organic matter content low	0.12	Slope	0.50	Slope	0.00
	Too acid	0.50			Rock fragments	0.88
Bannertown, very rocky	Fair		Poor		Poor	
	Droughty	0.16	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.29	Slope	0.50	Rock fragments	0.12
	Too acid	0.50			Depth to bedrock	0.29
RrE:						
Rhodhiss, very bouldery	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Slope	0.00
	Too acid	0.50			Rock fragments	0.88
Bannertown, very bouldery	Fair		Poor		Poor	
	Droughty	0.16	Slope	0.00	Slope	0.00
	Depth to bedrock	0.29	Depth to bedrock	0.00	Rock fragments	0.12
	Too acid	0.50			Depth to bedrock	0.29
Rock outcrop	Not rated		Not rated		Not rated	
RsB:						
Rhodhiss, stony	Fair		Good		Good	
	Too acid	0.32				
	Organic matter content low	0.50				
Stott Knob, stony	Fair		Poor		Fair	
	Organic matter content low	0.12	Depth to bedrock	0.00	Rock fragments	0.50
	Too acid	0.50			Too acid	0.76
	Droughty	0.75			Depth to bedrock	0.84
RsC:						
Rhodhiss, stony	Fair		Good		Fair	
	Too acid	0.32			Slope	0.37
	Organic matter content low	0.50				
Stott Knob, stony	Fair		Poor		Fair	
	Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.37
					Rock fragments	0.50
	Too acid	0.50			Too acid	0.76
	Droughty	0.75				
RsD:						
Rhodhiss, stony	Fair		Fair		Poor	
	Too acid	0.32	Slope	0.50	Slope	0.00
	Organic matter content low	0.50				

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
Stott Knob, stony---	Fair		Poor		Poor	
	Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
			Slope	0.50	Rock fragments	0.50
	Too acid	0.50			Too acid	0.76
	Droughty	0.75				
RsE:						
Rhodhiss, stony-----	Fair		Poor		Poor	
	Too acid	0.32	Slope	0.00	Slope	0.00
	Organic matter content low	0.50				
Stott Knob, stony---	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Slope	0.00
			Depth to bedrock	0.00	Rock fragments	0.50
	Too acid	0.50			Too acid	0.76
	Droughty	0.75				
SrC:						
Siloam--------------	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.00
	Depth to bedrock	0.00	Shrink-swell	0.87	Rock fragments	0.12
					Slope	0.96
Redbrush------------	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Droughty	0.00	Low strength	0.00	Depth to bedrock	0.16
	Organic matter content low	0.12	Shrink-swell	0.83	Rock fragments	0.88
SrE:						
Siloam--------------	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
			Shrink-swell	0.87	Rock fragments	0.12
Redbrush------------	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
	Droughty	0.00	Slope	0.00	Too clayey	0.00
	Organic matter content low	0.12	Low strength	0.00	Depth to bedrock	0.16
StC:						
Stott Knob, stony---	Fair		Poor		Fair	
	Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.37
					Rock fragments	0.50
	Too acid	0.50			Too acid	0.76
	Droughty	0.75				
StD:						
Stott Knob, stony---	Fair		Poor		Poor	
	Organic matter content low	0.12	Depth to bedrock	0.00	Slope	0.00
					Rock fragments	0.50
	Too acid	0.50	Slope	0.50	Too acid	0.76
	Droughty	0.75				

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
StE:						
Stott Knob, stony	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Slope	0.00
	Too acid	0.50	Depth to bedrock	0.00	Rock fragments	0.50
	Droughty	0.75			Too acid	0.76
TaD:						
Tate, extremely stony	Fair		Fair		Poor	
	Organic matter content low	0.50	Slope	0.92	Slope	0.00
	Too acid	0.68			Hard to reclaim (rock fragments)	0.08
					Rock fragments	0.88
TcC:						
Tate	Fair		Good		Fair	
	Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
	Too acid	0.68			Rock fragments	0.88
Colvard	Fair		Good		Fair	
	Too acid	0.68			Hard to reclaim (rock fragments)	0.32
	Organic matter content low	0.88				
	Water erosion	0.99				
ToB:						
Toast, rocky	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Too acid	0.59
	Too acid	0.50				
TtC:						
Toast, very rocky	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Slope	0.37
	Too acid	0.50			Too acid	0.59
Bannertown, very rocky	Fair		Poor		Fair	
	Droughty	0.16	Depth to bedrock	0.00	Rock fragments	0.12
	Depth to bedrock	0.29			Depth to bedrock	0.29
	Too acid	0.50			Slope	0.37
TuB:						
Toast, rocky	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Too acid	0.59
	Too acid	0.50				
Urban land	Not rated		Not rated		Not rated	

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
TwC:						
Toast, very rocky---	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Slope	0.37
	Too acid	0.50			Too acid	0.59
Urban land----------	Not rated		Not rated		Not rated	
Bannertown, very rocky--------------	Fair		Poor		Fair	
	Droughty	0.16	Depth to bedrock	0.00	Rock fragments	0.12
	Depth to bedrock	0.29			Depth to bedrock	0.29
	Too acid	0.50			Slope	0.37
Ud:						
Udorthents, loamy---	Fair		Good		Not rated	
	Organic matter content low	0.50				
	Too acid	0.97				
Ur:						
Urban land----------	Not rated		Not rated		Not rated	
WfB2:						
Woolwine, moderately eroded-------------	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Droughty	0.01			Rock fragments	0.50
	Organic matter content low	0.12			Depth to bedrock	0.54
Fairview, moderately eroded-------------	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12				
	Too acid	0.68				
Westfield, moderately eroded--	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Too clayey	0.00
	Organic matter content low	0.12	Depth to bedrock	0.39	Rock fragments	0.88
					Hard to reclaim (rock fragments)	0.92
	Too acid	0.68				
WfC2:						
Woolwine, moderately eroded-------------	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Droughty	0.01			Slope	0.37
	Organic matter content low	0.12			Rock fragments	0.50

Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	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
Fairview, moderately eroded	Poor		Good		Poor	
	Too clayey	0.00			Too clayey	0.00
	Organic matter content low	0.12			Slope	0.37
	Too acid	0.68				
Westfield, moderately eroded	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Too clayey	0.00
	Organic matter content low	0.12	Depth to bedrock	0.39	Slope	0.37
					Rock fragments	0.88
	Too acid	0.68				
WoD:						
Woolwine, stony	Poor		Poor		Poor	
	Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
	Droughty	0.00	Slope	0.50	Too clayey	0.00
	Organic matter content low	0.12			Rock fragments	0.50
Fairview, stony	Poor		Fair		Poor	
	Too clayey	0.00	Slope	0.50	Slope	0.00
	Organic matter content low	0.12			Too clayey	0.00
	Too acid	0.68				
Westfield, stony	Poor		Fair		Poor	
	Too clayey	0.00	Low strength	0.22	Slope	0.00
	Organic matter content low	0.12	Depth to bedrock	0.39	Too clayey	0.00
			Slope	0.50	Rock fragments	0.88
	Too acid	0.68				
WoE:						
Woolwine, stony	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Slope	0.00
	Droughty	0.00	Depth to bedrock	0.00	Too clayey	0.00
	Organic matter content low	0.12			Rock fragments	0.50
Fairview, stony	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12			Too clayey	0.00
	Too acid	0.68				
Westfield, stony	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Slope	0.00
	Organic matter content low	0.12	Low strength	0.22	Too clayey	0.00
			Depth to bedrock	0.39	Rock fragments	0.88
	Too acid	0.68				

Ponds and Embankments

(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	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
ArA:						
Arkaqua, undrained	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Piping	0.95		
			Thin layer	0.26		
BaC:						
Bandana	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
			Thin layer	0.86		
			Seepage	0.79		
Tate	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.04	Depth to water	1.00
	Slope	1.00				
Nikwasi, undrained	Very limited		Very limited		Very limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Thin layer	0.83		
BbB:						
Braddock	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.99	Piping	0.15	Depth to water	1.00
	Slope	0.08				
BbC, BbD:						
Braddock	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.15	Depth to water	1.00
	Seepage	0.99				
BcB:						
Braddock	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.99	Piping	0.13	Depth to water	1.00
	Slope	0.08				
BdC, BdD:						
Braddock, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.13	Depth to water	1.00
	Seepage	0.99				
BpC, BpD:						
Braddock, rubbly	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.16	Depth to water	1.00
	Seepage	0.99				
Pilot Mountain, rubbly	Very limited		Very limited		Very limited	
	Slope	1.00	Large stones content	1.00	Depth to water	1.00
	Seepage	1.00				
			Seepage	0.01		

Ponds and Embankments—Continued

Map symbol and soil name	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
BrD:						
Brevard, very bouldery----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.01	Depth to water	1.00
	Slope	1.00				
Greenlee, very bouldery----------	Very limited		Very limited		Very limited	
	Seepage	1.00	Large stones content	1.00	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
BrE:						
Brevard, very bouldery----------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.01	Depth to water	1.00
	Slope	1.00				
Greenlee, very bouldery----------	Very limited		Very limited		Very limited	
	Seepage	1.00	Large stones content	1.00	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
CeD, CeE:						
Chestnut, very rocky	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.88	Depth to water	1.00
	Slope	1.00	Seepage	0.01		
	Depth to bedrock	0.26				
Peaks, very rocky---	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.93				
CfF:						
Chestnut, very rocky	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.88	Depth to water	1.00
	Slope	1.00	Seepage	0.01		
	Depth to bedrock	0.26				
Peaks, very rocky---	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.93				
Tuckasegee, very rocky--------------	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	1.00				
ChE:						
Cleveland, windswept	Very limited		Very limited		Very limited	
	Slope	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	1.00	Seepage	0.01		
Rock outcrop--------	Very limited		Not rated		Not rated	
	Slope	1.00				
	Depth to bedrock	1.00				

Ponds and Embankments—Continued

Map symbol and soil name	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
Peaks, windswept----	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.93				
CkF:						
Cleveland, windswept	Very limited		Very limited		Very limited	
	Slope	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	1.00	Seepage	0.01		
Rock outcrop--------	Very limited		Not rated		Not rated	
	Slope	1.00				
	Depth to bedrock	1.00				
Peaks, windswept----	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.93				
CmD:						
Cliffield, very stony--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.99	Depth to water	1.00
	Depth to bedrock	0.99				
	Seepage	0.70				
Cowee, very stony---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.74	Depth to water	1.00
	Seepage	1.00	Seepage	0.01		
	Depth to bedrock	0.05				
CnE:						
Cliffield, very rocky--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.99	Depth to water	1.00
	Depth to bedrock	0.99				
	Seepage	0.70				
Cowee, very rocky---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.74	Depth to water	1.00
	Seepage	1.00	Seepage	0.01		
	Depth to bedrock	0.05				
CoD, CoE:						
Cliffield, rubbly---	Very limited		Very limited		Very limited	
	Slope	1.00	Large stones content	1.00	Depth to water	1.00
	Depth to bedrock	0.93				
	Seepage	0.70	Thin layer	0.93		
Sauratown, rubbly---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.95	Depth to water	1.00
	Depth to bedrock	0.88	Large stones content	0.02		
	Seepage	0.70				
CrB2:						
Clifford, moderately eroded------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.95	Piping	1.00	Depth to water	1.00
	Slope	0.08				

Ponds and Embankments—Continued

Map symbol and soil name	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
CsA:						
Colvard	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.02	Depth to water	1.00
Suches	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Piping	1.00	Cutbanks cave	0.10
			Depth to saturated zone	0.86	Depth to saturated zone	0.06
CwC, CwD, CwE:						
Cowee, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.74	Depth to water	1.00
	Seepage	1.00	Seepage	0.01		
	Depth to bedrock	0.05				
CxF:						
Cowee, rocky	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.74	Depth to water	1.00
	Seepage	1.00	Seepage	0.01		
	Depth to bedrock	0.05				
Saluda, rocky	Very limited		Very limited		Very limited	
	Slope	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.53				
Evard, rocky	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.01	Depth to water	1.00
	Seepage	1.00				
DAM:						
Dam	Not rated		Not rated		Not rated	
DeF:						
Devotion, very rocky	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.98	Depth to water	1.00
	Slope	1.00	Seepage	0.01		
	Depth to bedrock	0.30				
Rhodhiss, very rocky	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.01	Depth to water	1.00
	Seepage	1.00				
Bannertown, very rocky	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.86				
DrB:						
Dillard	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.70	Depth to saturated zone	0.99	Slow refill	0.30
			Piping	0.95	Cutbanks cave	0.10
					Depth to saturated zone	0.01
EcC, EcD, EcE:						
Evard, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.01	Depth to water	1.00
	Seepage	1.00				

Ponds and Embankments—Continued

Map symbol and soil name	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
Cowee, stony--------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.74	Depth to water	1.00
	Seepage	1.00	Seepage	0.01		
	Depth to bedrock	0.05				
FeB2:						
Fairview, moderately eroded-------------	Somewhat limited		Not limited		Very limited	
	Seepage	0.99			Depth to water	1.00
	Slope	0.08				
FeC2, FeD2:						
Fairview, moderately eroded-------------	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				
FfD:						
Fairview, stony-----	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				
FnB2:						
Fairview, moderately eroded-------------	Somewhat limited		Not limited		Very limited	
	Seepage	0.99			Depth to water	1.00
	Slope	0.08				
FnC2:						
Fairview, moderately eroded-------------	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				
FrC2, FrD2:						
Fairview, moderately eroded-------------	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				
Siloam, moderately eroded-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.95	Seepage	0.01		
FsE:						
Fairview-----------	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				
Stott Knob----------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.86	Depth to water	1.00
	Seepage	1.00	Seepage	0.01		
	Depth to bedrock	0.19				
FtE:						
Fairview, stony-----	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				

Ponds and Embankments—Continued

Map symbol and soil name	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
Stott Knob, stony---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.86	Depth to water	1.00
	Seepage	1.00	Seepage	0.01		
	Depth to bedrock	0.19				
FuB2:						
Fairview, moderately eroded-------------	Somewhat limited		Not limited		Very limited	
	Seepage	0.99			Depth to water	1.00
	Slope	0.08				
Urban land----------	Somewhat limited		Not rated		Not rated	
	Slope	0.08				
FuC2:						
Fairview, moderately eroded-------------	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				
Urban land----------	Very limited		Not rated		Not rated	
	Slope	1.00				
GrE:						
Greenlee, rubbly----	Very limited		Very limited		Very limited	
	Seepage	1.00	Large stones content	1.00	Depth to water	1.00
	Slope	1.00				
			Seepage	0.02		
HaA:						
Hatboro, drained----	Very limited		Very limited		Very limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Seepage	0.10		
Hatboro, undrained--	Very limited		Very limited		Very limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
			Depth to saturated zone	1.00		
			Seepage	0.10		
MsC, MsD, MsE:						
Meadowfield, very stony--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.91	Depth to water	1.00
	Seepage	0.99				
	Depth to bedrock	0.91				
Stott Knob, very stony--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.74	Depth to water	1.00
	Seepage	0.70				
	Depth to bedrock	0.13				
Pt:						
Pits, quarry--------	Very limited		Not rated		Not rated	
	Depth to bedrock	1.00				
	Slope	1.00				

Ponds and Embankments—Continued

Map symbol and soil name	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
RbD:						
Rhodhiss, very rocky	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.05	Depth to water	1.00
	Seepage	1.00				
Bannertown, very rocky	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.86				
RrE:						
Rhodhiss, very bouldery	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.05	Depth to water	1.00
	Seepage	1.00				
Bannertown, very bouldery	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.86				
Rock outcrop	Very limited		Not rated		Not rated	
	Slope	1.00				
	Depth to bedrock	1.00				
RsB:						
Rhodhiss, stony	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.01	Depth to water	1.00
	Slope	0.08				
Stott Knob, stony	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.70	Thin layer	0.74	Depth to water	1.00
	Depth to bedrock	0.13				
	Slope	0.08				
RsC, RsD, RsE:						
Rhodhiss, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.01	Depth to water	1.00
	Seepage	1.00				
Stott Knob, stony	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.74	Depth to water	1.00
	Seepage	0.70				
	Depth to bedrock	0.13				
SrC, SrE:						
Siloam	Very limited		Very limited		Very limited	
	Slope	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.95	Seepage	0.01		
Redbrush	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.96	Depth to water	1.00
	Depth to bedrock	0.61	Hard to pack	0.01		
	Seepage	0.01				

Ponds and Embankments—Continued

Map symbol and soil name	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
StC, StD, StE:						
Stott Knob, stony---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Thin layer	0.74	Depth to water	1.00
	Seepage	0.70				
	Depth to bedrock	0.13				
TaD:						
Tate, extremely stony--------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.04	Depth to water	1.00
	Seepage	1.00				
TcC:						
Tate----------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.04	Depth to water	1.00
	Slope	0.68				
Colvard-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.02	Depth to water	1.00
ToB:						
Toast, rocky--------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.05	Depth to water	1.00
	Slope	0.08				
TtC:						
Toast, very rocky---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.05	Depth to water	1.00
	Seepage	1.00				
Bannertown, very rocky--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.86				
TuB:						
Toast, rocky--------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.05	Depth to water	1.00
	Slope	0.08				
Urban land----------	Somewhat limited		Not rated		Not rated	
	Slope	0.08				
TwC:						
Toast, very rocky---	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Seepage	0.05	Depth to water	1.00
	Seepage	1.00				
Urban land----------	Very limited		Not rated		Not rated	
	Slope	1.00				
Bannertown, very rocky--------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.93	Depth to water	1.00
	Slope	1.00	Seepage	0.02		
	Depth to bedrock	0.86				

Ponds and Embankments—Continued

Map symbol and soil name	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
Ud:						
Udorthents, loamy---	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.92	Depth to water	1.00
	Slope	0.32				
Ur:						
Urban land----------	Very limited		Not rated		Not rated	
	Slope	1.00				
WfB2:						
Woolwine, moderately eroded-------------	Somewhat limited		Very limited		Very limited	
	Seepage	0.70	Piping	1.00	Depth to water	1.00
	Slope	0.32	Thin layer	0.86		
	Depth to bedrock	0.11				
Fairview, moderately eroded-------------	Somewhat limited		Not limited		Very limited	
	Seepage	0.99			Depth to water	1.00
	Slope	0.32				
Westfield, moderately eroded--	Somewhat limited		Very limited		Very limited	
	Seepage	0.99	Piping	1.00	Depth to water	1.00
	Slope	0.32	Thin layer	0.16		
	Depth to bedrock	0.01				
WfC2:						
Woolwine, moderately eroded-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Piping	1.00	Depth to water	1.00
	Seepage	0.70	Thin layer	0.86		
	Depth to bedrock	0.11				
Fairview, moderately eroded-------------	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				
Westfield, moderately eroded--	Very limited		Very limited		Very limited	
	Slope	1.00	Piping	1.00	Depth to water	1.00
	Seepage	0.99	Thin layer	0.16		
	Depth to bedrock	0.01				
WoD, WoE:						
Woolwine, stony-----	Very limited		Very limited		Very limited	
	Slope	1.00	Piping	1.00	Depth to water	1.00
	Seepage	0.70	Thin layer	0.86		
	Depth to bedrock	0.11				
Fairview, stony-----	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.99				
Westfield, stony----	Very limited		Very limited		Very limited	
	Slope	1.00	Piping	1.00	Depth to water	1.00
	Seepage	0.99	Thin layer	0.16		
	Depth to bedrock	0.01				

Engineering Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
ArA: Arkaqua, undrained------	0-10	Loam, fine sandy loam, sandy loam, silt loam	ML, SM, CL, SC, CL-ML, SC-SM	A-2-4, A-4	0	0	98-100	95-100	55-90	30-50	16-31	2-10
	10-45	Clay loam, silt loam, sandy clay loam, fine sandy loam, loam, sandy loam	SC-SM, CL, CL-ML	A-4, A-6	0	0	96-100	95-100	80-100	51-90	23-38	6-14
	45-80	Stratified loam to very gravelly sandy loam to extremely gravelly sand	SM, ML, GM, GC-GM	A-4	0	0-22	90-100	75-100	50-100	45-90	8-12	NP
BaC: Bandana---------	0-4	Fine sandy loam, sandy loam, loam, gravelly loamy sand, cobbly loamy fine sand	SC-SM, SM, ML, CL-ML	A-4, A-2-4	0	0-30	90-100	50-100	50-95	15-75	12-25	NP-7
	4-26	Fine sandy loam, sandy loam, loam, gravelly loamy sand, cobbly loamy fine sand	SM, SC-SM, ML, CL-ML	A-4, A-2-4	0	0-30	90-100	50-100	50-95	15-75	12-25	NP-7
	26-30	Loamy fine sand, gravelly loamy sand, cobbly sandy loam, fine sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-2-4, A-4	0	0-30	90-100	50-100	50-95	15-75	9-25	NP-7
	30-80	Extremely gravelly sand, very gravelly sand, very cobbly coarse sand, very cobbly fine sand, extremely gravelly loamy fine sand	SM, GM, GP, GP-GM, SP, SP-SM	A-1	0	0-30	40-85	10-50	5-40	1-18	8-12	NP

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	
Tate------------	0-5	Fine sandy loam, sandy loam, loam, gravelly fine sandy loam	ML, SM, SC, CL, SC-SM, CL-ML	A-4	0	0-5	85-90	80-85	60-75	40-65	12-30	NP-10
	5-47	Sandy clay loam, clay loam, loam, gravelly fine sandy loam, sandy loam	ML, CL, SC, SC-SM, CL-ML	A-6, A-4	0	0-15	85-100	80-95	65-95	40-75	23-38	6-14
	47-80	Very gravelly sandy loam, gravelly loamy fine sand, gravelly loam, sandy loam, loam, cobbly sandy loam	SC-SM, SM, GM, GC-GM, GC, SC	A-1, A-2-4, A-4	0	0-30	40-100	35-90	30-65	25-50	12-32	NP-11
Nikwasi, undrained------	0-31	Loam, fine sandy loam, sandy loam, gravelly loam	SM, ML, SC-SM, CL-ML	A-4, A-2-4	0	0-22	85-100	80-100	50-95	15-55	12-23	NP-6
	31-80	Very gravelly loamy fine sand, loamy fine sand, very cobbly sand, cobbly loamy coarse sand, very cobbly coarse sand, gravelly loamy sand	SM, GP-GM, GP, SP, GM, SP-SM	A-1, A-1-a	0	15-50	25-75	15-60	8-40	2-15	8-12	NP
BbB:												
Braddock--------	0-9	Fine sandy loam, sandy loam, loam	SC, SM, CL-ML, ML, SC-SM, CL	A-4, A-2-4	0	0-5	85-100	85-100	45-85	25-55	10-30	2-10
	9-56	Clay, clay loam, cobbly clay, sandy clay	MH, CL, SM, SC, CH, ML	A-7	0	0-15	85-100	70-100	60-95	35-90	38-61	14-27
	56-80	Clay loam, sandy clay loam, cobbly clay loam	SC-SM, CL, CL-ML, SC	A-7, A-5, A-2, A-4, A-6	0	0-25	75-95	55-90	35-85	25-70	23-43	6-17
BbC:												
Braddock--------	0-9	Fine sandy loam, sandy loam, loam	SC-SM, SC, ML, CL-ML, CL, SM	A-4, A-2-4	0	0-5	85-100	85-100	45-85	25-55	10-30	2-10
	9-56	Clay, clay loam, cobbly clay, sandy clay	SM, CL, CH, MH, ML, SC	A-7	0	0-15	85-100	70-100	60-95	35-90	38-61	14-27
	56-80	Clay loam, sandy clay loam, cobbly clay loam	CL-ML, CL, SC, SC-SM	A-7, A-6, A-5, A-2, A-4	0	0-25	75-95	55-90	35-85	25-70	23-43	6-17

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	
BbD:												
Braddock--------	0-9	Fine sandy loam, sandy loam, loam	SM, SC-SM, CL, CL-ML, ML, SC	A-2-4, A-4	0	0-5	85-100	85-100	45-85	25-55	10-30	2-10
	9-56	Clay, clay loam, cobbly clay, sandy clay	SC, SM, CL, CH, MH, ML	A-7	0	0-15	85-100	70-100	60-95	35-90	38-61	14-27
	56-80	Clay loam, sandy clay loam, cobbly clay loam	CL-ML, SC, SC-SM, CL	A-2, A-4, A-5, A-7, A-6	0	0-25	75-95	55-90	35-85	25-70	23-43	6-17
BcB:												
Braddock--------	0-9	Cobbly fine sandy loam, cobbly sandy loam, cobbly loam	CL-ML, SM, CL, ML, SC, SC-SM	A-2-4, A-4	0-5	6-20	85-100	50-100	40-80	20-55	16-30	2-10
	9-56	Clay, clay loam, cobbly clay, sandy clay	ML, MH, CH, CL, SM, SC	A-7	0	0-15	85-100	70-100	60-95	35-90	38-61	14-27
	56-80	Clay loam, sandy clay loam, cobbly clay loam	SC-SM, CL-ML, SC, CL	A-5, A-2, A-6, A-7, A-4	0	0-25	75-95	55-90	35-85	25-70	23-43	6-17
BdC:												
Braddock, stony-	0-9	Cobbly fine sandy loam, cobbly sandy loam, cobbly loam	CL, CL-ML, ML, SM, SC, SC-SM	A-2-4, A-4	0-5	6-20	85-100	50-100	40-80	20-55	16-30	2-10
	9-56	Clay, clay loam, cobbly clay, sandy clay	ML, MH, SM, SC, CH, CL	A-7	0	0-15	85-100	70-100	60-95	35-90	38-61	14-27
	56-80	Clay loam, sandy clay loam, cobbly clay loam	CL, SC, CL-ML, SC-SM	A-2, A-5, A-4, A-6, A-7	0	0-25	75-95	55-90	35-85	25-70	23-43	6-17
BdD:												
Braddock, stony-	0-9	Cobbly fine sandy loam, cobbly sandy loam, cobbly loam	CL, SC-SM, CL-ML, ML, SC, SM	A-2-4, A-4	0-5	6-20	85-100	50-100	40-80	20-55	16-30	2-10
	9-56	Clay, clay loam, cobbly clay, sandy clay	ML, MH, CH, CL, SM, SC	A-7	0	0-15	85-100	70-100	60-95	35-90	38-61	14-27
	56-80	Clay loam, sandy clay loam, cobbly clay loam	SC-SM, CL-ML, SC, CL	A-7, A-5, A-2, A-4, A-6	0	0-25	75-95	55-90	35-85	25-70	23-43	6-17

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	
BpC:												
Braddock, rubbly	0-7	Extremely cobbly fine sandy loam, extremely cobbly loam, extremely cobbly sandy loam	SM, SP-SM, CL-ML, SC-SM, ML	A-4, A-1, A-2-4	7-50	30-50	50-85	35-75	30-70	10-60	12-25	NP-7
	7-13	Sandy clay loam, cobbly clay loam, loam, gravelly fine sandy loam, gravelly clay loam	SC-SM, CL-ML, CL, SC	A-4, A-2-4, A-1	0-30	0-50	80-100	35-100	25-80	15-55	20-30	2-10
	13-63	Cobbly clay, gravelly clay, gravelly clay loam, sandy clay	ML, CH, MH, SC, CL, SM	A-7	0-15	0-50	85-100	70-100	60-95	35-90	38-61	14-27
	63-80	Cobbly loam, cobbly sandy clay loam, cobbly clay loam, gravelly fine sandy loam	SC, SC-SM, CL-ML, CL	A-7, A-6, A-4, A-2, A-5	0-15	0-50	75-95	55-90	35-85	25-70	23-43	6-17
Pilot Mountain, rubbly---------	0-2	Extremely cobbly slightly decomposed plant material	GP, PT	A-1, A-8	15-85	22-85	45-90	10-75	0-10	0-10	---	---
	2-12	Extremely cobbly fine sandy loam, very cobbly sandy loam, extremely cobbly loam	SC-SM, GM, GC-GM, SM	A-2-4, A-1	15-50	15-55	50-85	40-70	25-65	15-35	13-25	NP-7
	12-22	Very cobbly sandy clay loam, very cobbly clay, very cobbly fine sandy loam, extremely cobbly sandy clay, very cobbly clay loam, extremely gravelly loam	CL, SC, ML, SM, CL-ML, SC-SM, SP-SM, GC-GM, GP-GM, SP-SC	A-4, A-6, A-7, A-5, A-1, A-2	7-50	30-55	40-85	35-75	30-65	10-55	23-48	6-20
	22-30	Very cobbly clay, very cobbly fine sandy loam, very cobbly sandy clay loam, extremely cobbly sandy clay, very cobbly clay loam, extremely gravelly loam	ML, SM, GC, MH, GP-GM, CL-ML, SP-SM, GP-GC, GM, GC-GM, SC-SM	A-1, A-4, A-5, A-2, A-6, A-7	7-50	30-55	40-85	35-75	30-65	10-55	23-52	6-22

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	
	30-80	Extremely cobbly fine sandy loam, extremely stony fine sandy loam, cobbly sandy clay loam, stony sandy loam, very cobbly loam, very stony clay loam	SP-SC, CL, SM, SC, ML, SP-SM, SC-SM, CL-ML	A-2-6, A-6, A-4, A-2-4, A-1	7-50	22-55	50-85	30-80	20-60	10-50	16-38	2-14
BpD:												
Braddock, rubbly	0-7	Extremely cobbly fine sandy loam, extremely cobbly loam, extremely cobbly sandy loam	CL-ML, SM, ML, SC-SM, SP-SM	A-1, A-4, A-2-4	7-50	30-50	50-85	35-75	30-70	10-60	12-25	NP-7
	7-13	Sandy clay loam, cobbly clay loam, loam, gravelly fine sandy loam, gravelly clay loam	CL-ML, SC, SC-SM, CL	A-4, A-2-4, A-1	0-30	0-50	80-100	35-100	25-80	15-55	20-30	2-10
	13-63	Cobbly clay, gravelly clay, gravelly clay loam, sandy clay	MH, CH, ML, CL, SM, SC	A-7	0-15	0-50	85-100	70-100	60-95	35-90	38-61	14-27
	63-80	Cobbly loam, cobbly sandy clay loam, cobbly clay loam, gravelly fine sandy loam	CL, SC-SM, SC, CL-ML	A-4, A-7, A-6, A-5, A-2	0-15	0-50	75-95	55-90	35-85	25-70	23-43	6-17

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	
Pilot Mountain, rubbly---------	0-2	Extremely cobbly slightly decomposed plant material	GP, PT	A-1, A-8	15-85	22-85	45-90	10-75	0-10	0-10	---	---
	2-12	Extremely cobbly fine sandy loam, very cobbly sandy loam, extremely cobbly loam	GM, SC-SM, SM, GC-GM	A-2-4, A-1	15-50	15-55	50-85	40-70	25-65	15-35	13-25	NP-7
	12-22	Very cobbly sandy clay loam, very cobbly clay, very cobbly fine sandy loam, extremely cobbly sandy clay, very cobbly clay loam, extremely gravelly loam	GP-GM, GC-GM, SP-SM, SC-SM, SP-SC, SM, ML, SC, CL, CL-ML	A-2, A-4, A-6, A-7, A-5, A-1	7-50	30-55	40-85	35-75	30-65	10-55	23-48	6-20
	22-30	Very cobbly clay, very cobbly fine sandy loam, very cobbly sandy clay loam, extremely cobbly sandy clay, very cobbly clay loam, extremely gravelly loam	GM, SP-SM, GP-GC, CL-ML, MH, ML, GC-GM, GP-GM, SM, GC, SC-SM	A-6, A-2, A-4, A-1, A-5, A-7	7-50	30-55	40-85	35-75	30-65	10-55	23-52	6-22
	30-80	Extremely cobbly fine sandy loam, extremely stony fine sandy loam, cobbly sandy clay loam, stony sandy loam, very cobbly loam, very stony clay loam	ML, SM, CL, SP-SC, SP-SM, SC, CL-ML, SC-SM	A-2-6, A-4, A-6, A-2-4, A-1	7-50	22-55	50-85	30-80	20-60	10-50	16-38	2-14
BrD: Brevard, very bouldery-------	0-8	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, very gravelly fine sandy loam	SM, CL-ML, ML, SP-SM, SC-SM	A-2-4, A-1, A-4, A-2	0-30	0-50	50-100	25-85	15-75	10-55	12-25	NP-7
	8-48	Gravelly sandy clay loam, cobbly clay loam, loam	SC-SM, CL-ML, SC, CL	A-2-4, A-2-6, A-4, A-6, A-1, A-2	0-5	0-30	70-100	35-100	30-100	15-80	23-38	6-14
	48-80	Very gravelly fine sandy loam, very cobbly loam, gravelly sandy loam, cobbly loamy fine sand	GC-GM, GC, GP-GM, GP-GC, GM, SM, CL-ML	A-2-4, A-4, A-3, A-1	0-5	5-30	40-80	20-75	15-70	5-55	12-30	NP-10

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	
Greenlee, very bouldery-------	0-12	Extremely bouldery fine sandy loam, extremely stony fine sandy loam, extremely bouldery sandy loam, extremely bouldery loam	GM, SM, SC-SM, GC-GM	A-1, A-2-4	10-40	20-40	65-85	45-85	20-55	15-35	12-25	NP-7
	12-80	Very stony fine sandy loam, extremely stony fine sandy loam, very cobbly sandy loam, very stony loam, very bouldery sandy clay loam	SM, SC-SM, SP-SM, GC-GM, GM, GP-GM	A-2-4, A-1	10-45	20-55	50-85	45-75	18-50	10-30	12-27	1-7
BrE:												
Brevard, very bouldery-------	0-8	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, very gravelly fine sandy loam	SP-SM, ML, CL-ML, SC-SM, SM	A-2, A-4, A-2-4, A-1	0-30	0-50	50-100	25-85	15-75	10-55	12-25	NP-7
	8-48	Gravelly sandy clay loam, cobbly clay loam, loam	SC-SM, CL-ML, SC, CL	A-1, A-6, A-4, A-2-6, A-2-4, A-2	0-5	0-30	70-100	35-100	30-100	15-80	23-38	6-14
	48-80	Very gravelly fine sandy loam, very cobbly loam, gravelly sandy loam, cobbly loamy fine sand	SM, GM, GC-GM, GP-GM, GC, GP-GC	A-2-4, A-3, A-1, A-4	0-5	5-30	40-80	20-75	15-70	5-55	12-30	NP-10
Greenlee, very bouldery-------	0-12	Extremely bouldery fine sandy loam, extremely stony fine sandy loam, extremely bouldery sandy loam, extremely bouldery loam	SC-SM, GM, GC-GM, SM	A-1, A-2-4	10-40	20-40	65-85	45-80	20-55	15-35	12-25	NP-7
	12-80	Very stony fine sandy loam, extremely stony fine sandy loam, very cobbly sandy loam, very bouldery sandy clay loam, very stony loam	GP-GM, GC-GM, SP-SM, SC-SM, SM, GM	A-1, A-2-4	10-45	20-55	50-85	45-75	18-50	10-30	12-27	1-7

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	
CeD:												
Chestnut, very rocky----------	0-3	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SM, ML, SC-SM, CL-ML	A-2-4, A-4, A-2	0-5	5-15	65-85	45-85	35-80	30-50	12-25	NP-7
	3-21	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, sandy loam, fine sandy loam, loam	SC-SM, SM, ML, CL-ML	A-1, A-4, A-2, A-2-4	0-5	0-15	85-100	45-90	25-85	25-50	12-25	NP-7
	21-29	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, cobbly loamy fine sand, gravelly loamy sand	SM, ML, SC-SM, CL-ML	A-2, A-2-4, A-1, A-4	0-5	0-30	85-95	45-85	25-80	25-50	12-25	NP-7
	29-45	Weathered bedrock			---	---	---	---	---	---	---	---
	45-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Peaks, very rocky----------	0-4	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	GC-GM, GM, SM, SC-SM	A-1, A-2-4, A-2	0-10	15-25	55-90	45-65	30-60	15-34	11-21	NP-5
	4-19	Very gravelly fine sandy loam, very cobbly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam, very gravelly loam, very cobbly sandy loam, very cobbly loam	SM, GM, SC-SM, GC-GM	A-2, A-2-4, A-1	0-10	7-40	50-60	30-55	25-40	15-22	12-25	NP-7
	19-27	Extremely gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam, extremely cobbly sandy loam, extremely cobbly loam, extremely cobbly fine sandy loam	GP-GM, GC-GM, SP-SM, SC-SM, GM, SM	A-1, A-2-4, A-2	7-25	15-50	40-65	30-60	25-40	10-20	12-25	NP-7
	27-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
CeE:												
Chestnut, very rocky----------	0-3	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SM, ML, CL-ML, SC-SM	A-4, A-2, A-2-4	0-5	5-15	65-85	45-85	35-80	30-50	12-25	NP-7
	3-21	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, sandy loam, fine sandy loam, loam	SC-SM, ML, CL-ML, SM	A-2-4, A-1, A-4, A-2	0-5	0-15	85-100	45-90	25-85	25-50	12-25	NP-7
	21-29	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, cobbly loamy fine sand, gravelly loamy sand	CL-ML, ML, SC-SM, SM	A-2, A-2-4, A-1, A-4	0-5	0-30	85-95	45-85	25-80	25-50	12-25	NP-7
	29-45	Weathered bedrock			---	---	---	---	---	---	---	---
	45-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Peaks, very rocky----------	0-4	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	SM, GC-GM, GM, SC-SM	A-2, A-2-4, A-1	0-10	15-25	55-90	45-65	30-60	15-34	11-21	NP-5
	4-19	Very gravelly fine sandy loam, very cobbly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam, very gravelly loam, very cobbly sandy loam, very cobbly loam	GM, SC-SM, GC-GM, SM	A-2, A-1, A-2-4	0-10	7-40	50-60	30-55	25-40	15-22	12-25	NP-7
	19-27	Extremely gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam, extremely cobbly sandy loam, extremely cobbly loam, extremely cobbly fine sandy loam	GM, GP-GM, SC-SM, SM, SP-SM, GC-GM	A-1, A-2-4, A-2	7-25	15-50	40-65	30-60	25-40	10-20	12-25	NP-7
	27-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
CfF:												
Chestnut, very rocky----------	0-3	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SC-SM, SM, CL-ML, ML	A-2-4, A-4, A-2	0-5	5-15	65-85	45-85	35-80	30-50	12-25	NP-7
	3-21	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, sandy loam, fine sandy loam, loam	SC-SM, SM, CL-ML, ML	A-2-4, A-1, A-4, A-2	0-5	0-15	85-100	45-90	25-85	25-50	12-25	NP-7
	21-29	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, cobbly loamy fine sand, gravelly loamy sand	CL-ML, ML, SC-SM, SM	A-2-4, A-4, A-2, A-1	0-5	0-30	85-95	45-85	25-80	25-50	12-25	NP-7
	29-45	Weathered bedrock			---	---	---	---	---	---	---	---
	45-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Peaks, very rocky----------	0-4	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	GC-GM, GM, SC-SM, SM	A-2-4, A-2, A-1	0-10	15-25	55-90	45-65	30-60	15-34	11-21	NP-5
	4-19	Very gravelly fine sandy loam, very cobbly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam, very gravelly loam, very cobbly sandy loam, very cobbly loam	GC-GM, GM, SM, SC-SM	A-2, A-2-4, A-1	0-10	7-40	50-60	30-55	25-40	15-22	12-25	NP-7
	19-27	Extremely gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam, extremely cobbly sandy loam, extremely cobbly loam, extremely cobbly fine sandy loam	GP-GM, GM, GC-GM, SP-SM, SM, SC-SM	A-2-4, A-1, A-2	7-25	15-50	40-65	30-60	25-40	10-20	12-25	NP-7
	27-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
Tuckasegee, very rocky----------	0-13	Gravelly loam, gravelly sandy loam, gravelly fine sandy loam	ML, CL-ML, SC-SM, SM	A-2, A-1, A-4	0-5	0-15	70-85	60-80	30-75	20-60	12-25	NP-7
	13-47	Gravelly loam, cobbly fine sandy loam, sandy loam, sandy clay loam	SC, CL, CL-ML, ML, SM, SC-SM	A-4, A-2	0-5	0-15	75-100	65-95	55-90	35-65	15-30	2-10
	47-80	Very gravelly loam, gravelly loamy sand, cobbly fine sandy loam, very cobbly loamy fine sand, sandy loam	SM, GC-GM, SC-SM, ML, CL-ML, GM	A-4, A-2	0-10	2-15	65-100	40-75	35-70	30-60	12-25	NP-7
ChE:												
Cleveland, windswept------	0-4	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SC-SM, SM	A-4, A-2, A-2-4, A-1	0-15	0-15	70-95	55-90	50-85	25-50	12-25	NP-7
	4-15	Gravelly fine sandy loam, gravelly sandy loam, cobbly loam	SC-SM, SM	A-2, A-4, A-1, A-2-4	0-15	0-15	70-95	55-90	50-80	25-50	12-25	NP-7
	15-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Bedrock			---	---	---	---	---	---	---	---
Peaks, windswept	0-4	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	GC-GM, SM, SC-SM, GM	A-2-4, A-1, A-2	0-10	15-25	55-90	45-65	30-60	15-34	11-21	NP-5
	4-19	Very gravelly fine sandy loam, very cobbly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam, very gravelly loam, very cobbly sandy loam, very cobbly loam	GM, SM, SC-SM, GC-GM	A-2, A-1, A-2-4	0-10	7-40	50-60	30-55	25-40	15-22	12-25	NP-7
	19-27	Extremely gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam, extremely cobbly sandy loam, extremely cobbly loam, extremely cobbly fine sandy loam	SC-SM, GP-GM, GM, SP-SM, SM, GC-GM	A-1, A-2, A-2-4	7-25	15-50	40-65	30-60	25-40	10-20	12-25	NP-7
	27-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
CkF:												
Cleveland, windswept------	0-4	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	SM, SC-SM	A-2, A-2-4, A-1, A-4	0-15	0-15	70-95	55-90	50-85	25-50	12-25	NP-7
	4-15	Gravelly fine sandy loam, gravelly sandy loam, cobbly loam	SM, SC-SM	A-2-4, A-1, A-4, A-2	0-15	0-15	70-95	55-90	50-80	25-50	12-25	NP-7
	15-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Bedrock			---	---	---	---	---	---	---	---
Peaks, windswept	0-4	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	GC-GM, GM, SC-SM, SM	A-2-4, A-2, A-1	0-10	15-25	55-90	45-65	30-60	15-34	11-21	NP-5
	4-19	Very gravelly fine sandy loam, very cobbly fine sandy loam, very gravelly sandy loam, gravelly fine sandy loam, very gravelly loam, very cobbly sandy loam, very cobbly loam	GM, SC-SM, GC-GM, SM	A-1, A-2-4, A-2	0-10	7-40	50-60	30-55	25-40	15-22	12-25	NP-7
	19-27	Extremely gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam, extremely cobbly sandy loam, extremely cobbly loam, extremely cobbly fine sandy loam	SP-SM, SM, SC-SM, GP-GM, GM, GC-GM	A-2, A-2-4, A-1	7-25	15-50	40-65	30-60	25-40	10-20	12-25	NP-7
	27-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
CmD:												
Cliffield, very stony----------	0-3	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	ML, CL-ML, SM, SC-SM, GM, GC-GM	A-2, A-4, A-2-4, A-1	0-30	0-30	65-85	60-75	30-65	25-55	13-25	NP-7
	3-23	Very gravelly sandy clay loam, very cobbly clay loam, extremely cobbly loam, very cobbly sandy clay loam	GC-GM, SC-SM, SC, GC	A-4, A-6, A-2, A-2-4, A-1, A-2-6	0-30	7-30	55-85	50-65	30-55	25-45	20-38	4-14
	23-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Cowee, very stony----------	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	CL-ML, SM, SC-SM, SC, ML, CL	A-2-4, A-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	CL, SC, CL-ML, SC-SM	A-2-6, A-6, A-2-4, A-4	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	SC-SM, SM, CL-ML, SC, CL, ML	A-1, A-2-4, A-4, A-2	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---
CnE:												
Cliffield, very rocky----------	0-3	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	SC-SM, SM, ML, GM, GC-GM, CL-ML	A-1, A-2-4, A-4, A-2	0-30	0-30	65-85	60-75	30-65	25-55	13-25	NP-7
	3-23	Very gravelly sandy clay loam, very cobbly clay loam, extremely cobbly loam, very cobbly sandy clay loam	SC-SM, SC, GC, GC-GM	A-2, A-4, A-6, A-2-4, A-1, A-2-6	0-30	7-30	55-85	50-65	30-55	25-45	20-38	4-14
	23-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
Cowee, very rocky----------	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	SM, SC-SM, SC, CL-ML, CL, ML	A-4, A-2-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	SC-SM, CL-ML, SC, CL	A-4, A-2-4, A-6, A-2-6	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	SM, SC-SM, CL, CL-ML, ML, SC	A-2-4, A-1, A-4, A-2	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---
CoD: Cliffield, rubbly---------	0-7	Extremely stony fine sandy loam, extremely stony sandy loam, extremely stony loam	SM, SC-SM, GC-GM, GM	A-4, A-2-4, A-1	15-70	15-70	60-85	45-80	35-70	20-50	13-25	NP-7
	7-27	Very cobbly sandy clay loam, extremely gravelly clay loam, very stony loam	GC, SC, SC-SM, GC-GM	A-6, A-2-6, A-4, A-1, A-2-4, A-2	7-70	22-70	65-85	40-80	35-75	20-60	20-38	4-14
	27-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Sauratown, rubbly---------	0-9	Extremely stony fine sandy loam, extremely stony sandy loam, extremely stony loam	SC-SM, SM, GC-GM, GM	A-4, A-2-4, A-1	7-15	0-30	70-95	65-90	45-85	25-45	12-25	NP-7
	9-26	Cobbly sandy clay loam, stony loam, gravelly clay loam, fine sandy loam	SC-SM, CL-ML, CL, SC	A-6, A-4	0-10	7-30	75-95	75-90	65-90	40-70	23-38	6-14
	26-29	Weathered bedrock			---	---	---	---	---	---	---	---
	29-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
CoE:												
Cliffield, rubbly---------	0-7	Extremely stony fine sandy loam, extremely stony sandy loam, extremely stony loam	SC-SM, GM, SM, GC-GM	A-1, A-2-4, A-4	15-70	15-70	60-85	45-80	35-70	20-50	13-25	NP-7
	7-27	Very cobbly sandy clay loam, extremely gravelly clay loam, very stony loam	GC, SC, SC-SM, GC-GM	A-2, A-2-4, A-2-6, A-6, A-4, A-1	7-70	22-70	65-85	40-80	35-75	20-60	20-38	4-14
	27-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Sauratown, rubbly---------	0-9	Extremely stony fine sandy loam, extremely stony sandy loam, extremely stony loam	GM, SM, GC-GM, SC-SM	A-4, A-1, A-2-4	7-15	0-30	70-95	65-90	45-85	25-45	12-25	NP-7
	9-26	Cobbly sandy clay loam, stony loam, gravelly clay loam, fine sandy loam	CL, CL-ML, SC-SM, SC	A-4, A-6	0-10	7-30	75-95	75-90	65-90	40-70	23-38	6-14
	26-29	Weathered bedrock			---	---	---	---	---	---	---	---
	29-80	Unweathered bedrock			---	---	---	---	---	---	---	---
CrB2:												
Clifford, moderately eroded---------	0-6	Sandy clay loam, clay loam, loam, fine sandy loam, gravelly sandy loam	SM, SC-SM, ML	A-2-4, A-4	0	0-2	90-100	75-100	65-95	35-80	19-31	1-5
	6-52	Clay, clay loam	ML	A-6, A-4, A-5, A-7-5	0	0-10	90-100	75-100	70-95	55-95	31-45	5-11
	52-80	Clay loam, sandy clay loam, loam, fine sandy loam, sandy loam	ML, SC-SM, SM	A-4, A-2-4	0	0-10	90-100	75-100	60-90	30-60	19-34	1-6

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	
CsA:												
Colvard---------	0-10	Fine sandy loam, sandy loam, loam	SC-SM, SM, CL-ML, ML	A-2-4, A-4	0	0-5	95-100	75-100	45-85	25-50	11-25	NP-7
	10-50	Fine sandy loam, sandy loam, loam	CL-ML, SM, SC-SM, ML	A-2-4, A-4	0	0-5	90-100	75-100	45-85	25-50	11-25	NP-7
	50-80	Gravelly loamy fine sand, stratified gravelly sandy loam to extremely gravelly sand	GM, GC-GM, SM, SC-SM	A-1-b, A-2-4, A-2	0	0-50	40-90	30-90	25-85	10-35	9-25	NP-7
Suches----------	0-12	Loam, fine sandy loam, sandy loam	ML, SM, SC-SM, CL-ML, SC, CL	A-4	0	0	90-100	90-100	70-95	40-75	16-30	2-10
	12-54	Clay loam, loam, sandy clay loam, sandy loam, fine sandy loam, silt loam	CL, SC-SM, CL-ML	A-7, A-6, A-4, A-5	0	0	90-100	90-100	70-100	55-85	23-41	6-16
	54-80	Loam, sandy clay loam, clay loam, gravelly loamy sand, gravelly sandy loam, fine sandy loam	CL, SC-SM, ML, SM, SC, CL-ML	A-6, A-4	0	0	85-100	85-100	65-100	40-70	10-38	NP-14
CwC:												
Cowee, stony----	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	SC-SM, SM, SC, CL, CL-ML, ML	A-2-4, A-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	SC-SM, CL-ML, SC, CL	A-4, A-2-4, A-6, A-2-6	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	SM, SC-SM, SC, CL-ML, CL, ML	A-2, A-4, A-1, A-2-4	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---

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	
CwD:												
Cowee, stony----	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	CL, CL-ML, ML, SC, SC-SM, SM	A-2-4, A-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	SC, CL, SC-SM, CL-ML	A-2-4, A-2-6, A-4, A-6	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	SM, SC-SM, SC, ML, CL-ML, CL	A-4, A-1, A-2-4, A-2	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---
CwE:												
Cowee, stony----	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	SC-SM, CL, SC, SM, ML, CL-ML	A-4, A-2-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	SC-SM, CL-ML, SC, CL	A-2-6, A-6, A-4, A-2-4	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	SM, CL, SC-SM, SC, ML, CL-ML	A-4, A-1, A-2-4, A-2	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---
CxF:												
Cowee, rocky----	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	CL, ML, CL-ML, SM, SC-SM, SC	A-4, A-2-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	SC, CL-ML, SC-SM, CL	A-2-4, A-2-6, A-4, A-6	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	CL-ML, ML, SC-SM, SC, CL, SM	A-4, A-1, A-2-4, A-2	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---
Saluda, rocky---	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, fine sandy loam	SM, SC-SM	A-2, A-2-4	0-5	0-15	70-85	60-80	55-75	15-35	12-30	NP-6
	4-18	Gravelly clay loam, gravelly sandy clay loam, sandy loam, fine sandy loam, loam	SC, CL, SC-SM, CL-ML	A-6, A-2-4, A-2-6, A-4	0-5	0-5	80-100	75-95	60-85	30-50	23-38	6-14
	18-80	Weathered bedrock			---	---	---	---	---	---	---	---

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	
Evard, rocky----	0-8	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, fine sandy loam	SM, SC, SC-SM	A-1, A-4, A-2, A-2-4	0-1	0-5	75-85	60-80	50-75	15-40	16-30	2-10
	8-35	Clay loam, sandy clay loam, loam	SC-SM, CL, CL-ML, SC	A-2-6, A-4, A-6, A-2-4	0	0-5	80-100	75-100	60-95	25-75	23-38	6-14
	35-80	Gravelly fine sandy loam, gravelly loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam	SC, CL-ML, SM, ML, CL, SC-SM	A-2, A-4, A-1, A-2-4	0	0-5	80-100	65-100	50-90	10-55	12-27	NP-8
DAM:												
Dam-------------	---	---	---	---	---	---	---	---	---	---	---	---
DeF:												
Devotion, very rocky----------	0-7	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, gravelly loamy sand, gravelly loamy fine sand, fine sandy loam	SM, SC-SM	A-2-4, A-1-b, A-4	0-5	0-5	75-95	65-90	45-80	20-45	8-25	NP-7
	7-20	Gravelly fine sandy loam, loam, sandy loam	SC, SM, SC-SM	A-1-b, A-2-4, A-4	0-5	0-5	70-95	65-90	40-80	25-45	8-27	NP-8
	20-24	Gravelly fine sandy loam, loam, sandy loam, gravelly loamy fine sand, gravelly loamy sand, sand	SC, SM, SC-SM, SP-SM	A-1-b, A-2-4, A-3, A-4	0-5	0-5	75-95	55-90	40-80	5-40	8-27	NP-8
	24-45	Weathered bedrock			---	---	---	---	---	---	---	---
	45-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
Rhodhiss, very rocky----------	0-4	Gravelly fine sandy loam, sandy loam, gravelly loam, fine sandy loam, loamy sand	SC, SM, SC-SM	A-2-4, A-1, A-2	0-5	0-10	75-95	60-80	40-75	10-35	16-30	2-10
	4-36	Clay loam, fine sandy loam, loam, sandy clay loam, gravelly sandy clay loam	CL-ML, SC, CL, SC-SM	A-6, A-2-4, A-2-6, A-4	0-2	0-10	90-100	80-100	60-85	30-60	23-38	6-14
	36-43	Loam, sandy loam, fine sandy loam, sandy clay loam, gravelly sandy loam	SC, SM, CL-ML, SC-SM, CL, ML	A-2-4, A-4, A-1	0-2	0-10	90-100	80-100	50-85	20-55	12-31	NP-10
	43-80	Fine sandy loam, sandy loam, loamy sand, loam, gravelly fine sandy loam	SM, ML, CL, SC-SM, SC, CL-ML	A-4, A-1, A-2-4	0-2	0-10	90-100	80-100	45-80	15-50	12-30	NP-10
Bannertown, very rocky----------	0-4	Gravelly fine sandy loam, sandy loam, fine sandy loam, loam	ML, SM, CL-ML, SC-SM	A-2, A-2-4, A-4, A-1	0-10	0-10	70-100	65-90	40-80	20-50	12-25	NP-6
	4-19	Gravelly fine sandy loam, sandy loam, fine sandy loam, loam	SM, CL-ML, SC-SM, ML	A-2, A-2-4, A-1, A-4	0-10	0-10	55-100	50-90	30-75	15-50	15-25	NP-6
	19-27	Gravelly fine sandy loam, sandy loam, fine sandy loam, loamy sand, loamy fine sand	SC-SM, SM	A-2, A-2-4, A-1, A-4	0-10	0-10	55-95	45-90	25-70	10-40	12-25	NP-6
	27-30	Weathered bedrock			---	---	---	---	---	---	---	---
	30-80	Unweathered bedrock			---	---	---	---	---	---	---	---
DrB: Dillard---------	0-10	Fine sandy loam, sandy loam, loam	CL-ML, ML, CL, SC-SM	A-4	0	0	95-100	90-100	65-95	50-75	16-30	2-10
	10-30	Sandy clay loam, clay loam, loam	CL-ML, SC, CL, SC-SM	A-4	0	0	95-100	75-100	60-95	40-80	23-38	6-14
	30-48	Clay, clay loam, sandy clay, sandy clay loam	SM, SC, CL, ML	A-5, A-7, A-6	0	0	90-100	75-100	60-95	45-95	30-50	10-24
	48-80	Clay loam, stratified gravelly loam to gravelly sand	SC-SM, SM, SC, CL-ML, CL, ML	A-4, A-2, A-1, A-6	0	0	95-100	75-100	30-70	20-60	16-35	2-20

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	
EcC:												
Evard, stony----	0-8	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, fine sandy loam	SM, SC, SC-SM	A-2, A-2-4, A-1, A-4	0-1	0-15	75-85	60-80	50-75	15-40	16-30	2-10
	8-35	Clay loam, sandy clay loam, loam	CL-ML, SC, CL, SC-SM	A-6, A-2-4, A-2-6, A-4	0	0-8	80-100	75-100	60-95	25-75	23-38	6-14
	35-80	Gravelly fine sandy loam, gravelly loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam	ML, SM, CL-ML, SC-SM, CL, SC	A-2, A-4, A-1, A-2-4	0	0-15	80-100	65-100	50-90	10-55	12-27	NP-8
Cowee, stony----	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	SC, CL, SM, SC-SM, ML, CL-ML	A-2-4, A-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	SC-SM, SC, CL-ML, CL	A-2-6, A-4, A-2-4, A-6	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	ML, SC-SM, SM, CL, CL-ML, SC	A-4, A-1, A-2-4, A-2	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---
EcD:												
Evard, stony----	0-8	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, fine sandy loam	SC, SM, SC-SM	A-1, A-4, A-2, A-2-4	0-1	0-15	75-85	60-80	50-75	15-40	16-30	2-10
	8-35	Clay loam, sandy clay loam, loam	SC-SM, CL, SC, CL-ML	A-6, A-2-4, A-4, A-2-6	0	0-8	80-100	75-100	60-95	25-75	23-38	6-14
	35-80	Gravelly fine sandy loam, gravelly loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam	CL-ML, SC-SM, CL, ML, SC, SM	A-1, A-4, A-2, A-2-4	0	0-15	80-100	65-100	50-90	10-55	12-27	NP-8

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	
Cowee, stony----	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	CL, CL-ML, ML, SC, SC-SM, SM	A-4, A-2-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	SC, CL-ML, SC-SM, CL	A-2-6, A-4, A-2-4, A-6	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	CL, CL-ML, ML, SC, SC-SM, SM	A-1, A-2, A-4, A-2-4	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---
EcE:												
Evard, stony----	0-8	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam, fine sandy loam	SM, SC-SM, SC	A-2, A-2-4, A-1, A-4	0-1	0-15	75-85	60-80	50-75	15-40	16-30	2-10
	8-35	Clay loam, sandy clay loam, loam	SC, SC-SM, CL, CL-ML	A-2-6, A-4, A-2-4, A-6	0	0-8	80-100	75-100	60-95	25-75	23-38	6-14
	35-80	Gravelly fine sandy loam, gravelly loamy fine sand, loamy sand, sandy loam, fine sandy loam, loam	CL-ML, SM, ML, SC, SC-SM, CL	A-2, A-4, A-2-4, A-1	0	0-15	80-100	65-100	50-90	10-55	12-27	NP-8
Cowee, stony----	0-3	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam	CL-ML, CL, SM, SC-SM, SC, ML	A-4, A-2-4	0-5	0-5	75-95	60-80	55-75	20-50	18-30	3-10
	3-27	Sandy clay loam, clay loam, gravelly loam	CL, SC-SM, SC, CL-ML	A-2-6, A-6, A-2-4, A-4	0-5	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	27-34	Gravelly fine sandy loam, gravelly sandy loam, sandy clay loam, cobbly loam	ML, SC-SM, CL-ML, CL, SC, SM	A-4, A-1, A-2-4, A-2	0-5	0-5	70-100	45-95	25-90	15-65	16-31	2-10
	34-80	Weathered bedrock			---	---	---	---	---	---	---	---

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	
FeB2: Fairview, moderately eroded---------	0-9	Sandy clay loam, clay loam, loam	ML, SC-SM, SM	A-4, A-2-4	0	0-5	90-100	80-100	60-90	35-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	SM, ML	A-4, A-5, A-7-5, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	SM, ML	A-6, A-7-5, A-5, A-4	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, SC-SM, ML, CL-ML	A-2-4, A-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5
FeC2: Fairview, moderately eroded---------	0-9	Sandy clay loam, clay loam, loam	ML, SC-SM, SM	A-4, A-2-4	0	0-5	90-100	80-100	60-90	35-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	ML, SM	A-6, A-7-5, A-5, A-4	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	SM, ML	A-7-5, A-6, A-4, A-5	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, SC-SM, CL-ML, ML	A-2-4, A-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5
FeD2: Fairview, moderately eroded---------	0-9	Sandy clay loam, clay loam, loam	SM, SC-SM, ML	A-4, A-2-4	0	0-5	90-100	80-100	60-90	35-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	SM, ML	A-7-5, A-5, A-4, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-7-5, A-5, A-4, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, CL-ML, SC-SM, ML	A-4, A-2-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5

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	
FfD:												
Fairview, stony-	0-9	Cobbly fine sandy loam, cobbly sandy loam, cobbly loam	SM, ML	A-4, A-2-4	0-1	0-25	75-100	55-100	45-90	30-65	12-25	NP-3
	9-24	Clay, clay loam, sandy clay	ML, SM	A-6, A-7-5, A-5, A-4	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-6, A-7-5, A-5, A-4	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	ML, SC-SM, SM, CL-ML	A-2-4, A-4	0-1	0-5	80-100	70-100	60-95	25-65	13-25	1-5
FnB2:												
Fairview, moderately eroded---------	0-9	Cobbly sandy clay loam, cobbly clay loam, cobbly loam	ML, SC-SM, SM	A-2-4, A-4	0	0-25	80-100	75-100	55-90	25-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	SM, ML	A-7-5, A-6, A-5, A-4	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-6, A-7-5, A-5, A-4	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, CL-ML, ML, SC-SM	A-4, A-2-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5
FnC2:												
Fairview, moderately eroded---------	0-9	Cobbly sandy clay loam, cobbly clay loam, cobbly loam	ML, SM, SC-SM	A-2-4, A-4	0	0-25	80-100	75-100	55-90	25-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	ML, SM	A-4, A-5, A-7-5, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	SM, ML	A-6, A-7-5, A-5, A-4	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, ML, CL-ML, SC-SM	A-4, A-2-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5

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	
FrC2:												
Fairview, moderately eroded---------	0-9	Sandy clay loam, clay loam, loam	SC-SM, ML, SM	A-2-4, A-4	0	0-5	90-100	80-100	60-90	35-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	ML, SM	A-6, A-5, A-4, A-7-5	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-6, A-7-5, A-5, A-4	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	ML, SC-SM, SM, CL-ML	A-2-4, A-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5
Siloam, moderately eroded---------	0-8	Fine sandy loam, sandy loam, gravelly loam	SC, CL-ML, SC-SM, CL	A-2-4, A-4, A-2-6, A-6	0-2	0-10	90-100	80-100	60-95	20-55	23-34	5-14
	8-15	Sandy clay loam, clay loam, clay, gravelly loam	SC, CH, CL	A-6, A-7-6	0-1	0-10	80-100	80-100	65-95	40-85	30-52	11-28
	15-26	Weathered bedrock			---	---	---	---	---	---	---	---
	26-80	Unweathered bedrock			---	---	---	---	---	---	---	---
FrD2:												
Fairview, moderately eroded---------	0-9	Sandy clay loam, clay loam, loam	ML, SC-SM, SM	A-4, A-2-4	0	0-5	90-100	80-100	60-90	35-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	ML, SM	A-7-5, A-5, A-4, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-4, A-5, A-7-5, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	ML, SC-SM, CL-ML, SM	A-2-4, A-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5
Siloam, moderately eroded---------	0-8	Fine sandy loam, sandy loam, gravelly loam	CL, SC-SM, CL-ML, SC	A-2-4, A-2-6, A-4, A-6	0-2	0-10	90-100	80-100	60-95	20-55	23-34	5-14
	8-15	Sandy clay loam, clay loam, clay, gravelly loam	SC, CH, CL	A-6, A-7-6	0-1	0-10	80-100	80-100	65-95	40-85	30-52	11-28
	15-26	Weathered bedrock			---	---	---	---	---	---	---	---
	26-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
FsE:												
Fairview--------	0-9	Fine sandy loam, sandy loam, loam	SM, ML	A-2-4, A-4	0	0-5	90-100	75-100	50-95	30-75	11-23	NP-3
	9-24	Clay, clay loam, sandy clay	ML, SM	A-5, A-7-5, A-6, A-4	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	SM, ML	A-6, A-4, A-5, A-7-5	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	CL-ML, ML, SC-SM, SM	A-4, A-2-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5
Stott Knob------	0-3	Fine sandy loam, loam, gravelly sandy loam	SC, CL-ML, SM, ML, CL, SC-SM	A-4, A-2-4	0	0-5	90-100	85-100	60-85	30-55	16-30	2-10
	3-7	Fine sandy loam, loam, gravelly sandy loam	SC-SM, CL, ML, SM, SC, CL-ML	A-4, A-2-4	0	0-5	90-100	85-100	60-85	30-55	16-30	2-10
	7-24	Sandy clay loam, gravelly loam, clay loam	SC, CL-ML, CL, SC-SM	A-1-b, A-2-6, A-6, A-2-4, A-4	0	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	24-30	Fine sandy loam, loam, gravelly sandy loam	SC-SM, CL, ML, SC, CL-ML, SM	A-2-4, A-1-b, A-4, A-1-a	0	0-7	75-100	50-95	30-90	15-65	16-28	2-8
	30-47	Weathered bedrock			---	---	---	---	---	---	---	---
	47-80	Unweathered bedrock			---	---	---	---	---	---	---	---
FtE:												
Fairview, stony-	0-9	Cobbly fine sandy loam, cobbly sandy loam, cobbly loam	SM, ML	A-2-4, A-4	0-1	0-25	75-100	55-100	45-90	30-65	12-25	NP-3
	9-24	Clay, clay loam, sandy clay	ML, SM	A-6, A-7-5, A-5, A-4	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	SM, ML	A-7-5, A-5, A-4, A-6	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	ML, SC-SM, SM, CL-ML	A-2-4, A-4	0-1	0-5	80-100	70-100	60-95	25-65	13-25	1-5

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	
Stott Knob, stony----------	0-3	Cobbly fine sandy loam, cobbly loam, cobbly sandy loam	SC, CL-ML, SM, SC-SM, CL, ML	A-2-4, A-4	0-1	0-5	75-95	60-80	50-75	20-50	16-30	2-10
	3-7	Cobbly fine sandy loam, cobbly loam, cobbly sandy loam	SC-SM, CL, ML, SM, SC, CL-ML	A-4, A-2-4	0-1	0-5	75-95	60-80	50-75	20-50	16-30	2-10
	7-24	Sandy clay loam, gravelly loam, clay loam	SC-SM, CL-ML, SC, CL	A-4, A-2-4, A-1-b, A-2-6, A-6	0-1	0-5	70-100	45-95	40-95	25-80	23-38	6-14
	24-30	Fine sandy loam, loam, gravelly sandy loam	SC, SC-SM, CL, SM, CL-ML, ML	A-1-b, A-4, A-2-4	0-1	0-7	75-100	50-95	30-90	15-65	16-28	2-8
	30-47	Weathered bedrock			---	---	---	---	---	---	---	---
	47-80	Unweathered bedrock			---	---	---	---	---	---	---	---
FuB2: Fairview, moderately eroded---------	0-9	Sandy clay loam, clay loam, loam	SM, ML, SC-SM	A-4, A-2-4	0	0-5	90-100	80-100	60-90	35-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	ML, SM	A-7-5, A-5, A-4, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-4, A-5, A-7-5, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
FuC2: Fairview, moderately eroded---------	0-9	Sandy clay loam, clay loam, loam	ML, SC-SM, SM	A-4, A-2-4	0	0-5	90-100	80-100	60-90	35-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	SM, ML	A-7-5, A-5, A-4, A-6	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	SM, ML	A-5, A-4, A-6, A-7-5	0	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, SC-SM, ML, CL-ML	A-4, A-2-4	0	0-5	80-100	70-100	60-95	25-65	13-25	1-5
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---

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	
GrE:												
Greenlee, rubbly	0-12	Extremely bouldery fine sandy loam, extremely stony fine sandy loam, extremely bouldery sandy loam, extremely bouldery loam	GM, SM, SC-SM, GC-GM	A-1, A-2-4	10-40	20-40	65-85	45-80	20-55	15-35	12-25	NP-7
	12-80	Very stony fine sandy loam, extremely stony fine sandy loam, very cobbly sandy loam, very bouldery sandy clay loam, very stony loam	SM, SC-SM, SP-SM, GC-GM, GP-GM, GM	A-1, A-2-4	10-45	20-55	50-85	45-75	18-50	10-30	12-27	1-7
HaA:												
Hatboro, drained	0-8	Loam, silt loam, sandy loam, fine sandy loam	CL-ML, CL, SC-SM, SM, ML, SC	A-2-4, A-4	0	0	95-100	85-100	55-75	25-55	16-30	2-10
	8-35	Sandy clay loam, clay loam, loam, silt loam, silty clay loam	SC, SC-SM, CL, CL-ML	A-6, A-4	0	0	95-100	85-100	80-95	45-80	23-32	3-12
	35-41	Loam, fine sandy loam, sandy loam, silt loam, sandy clay loam	SC, ML, SM, SC-SM, CL, CL-ML	A-4, A-6	0	0	95-100	85-100	55-85	35-65	16-38	2-12
	41-80	Very gravelly loamy sand, stratified sandy loam to very gravelly sand	GP-GC, GC-GM, SC-SM, SP-SC, SC, GM, GC, SM, SP-SM	A-2, A-1	0	0	45-75	10-40	5-40	1-15	10-15	NP-20
Hatboro, undrained------	0-8	Loam, silt loam, sandy loam, fine sandy loam	CL, CL-ML, SC, ML, SC-SM, SM	A-2-4, A-4	0	0	95-100	85-100	55-75	25-55	16-30	2-10
	8-35	Sandy clay loam, clay loam, loam, silt loam, silty clay loam	SC-SM, CL, CL-ML, SC	A-6, A-4	0	0	95-100	85-100	80-95	45-80	23-32	3-12
	35-41	Loam, fine sandy loam, sandy loam, silt loam, sandy clay loam	SC, ML, SM, SC-SM, CL, CL-ML	A-4, A-6	0	0	95-100	85-100	55-85	35-65	16-38	2-12
	41-80	Very gravelly loamy sand, stratified sandy loam to very gravelly sand	GP-GC, GC-GM, SC-SM, SP-SC, SP-SM, SM, GC, GM, SC	A-2, A-1	0	0	45-75	10-40	5-40	1-15	10-15	NP-20

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	
MsC:												
Meadowfield, very stony-----	0-4	Very gravelly loam, extremely gravelly very fine sandy loam, very gravelly fine sandy loam, very gravelly sandy loam	SM, GC-GM, GM, SC-SM	A-4, A-2-4, A-1	0-30	22-30	65-85	30-65	25-60	20-45	13-25	NP-7
	4-22	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam, extremely gravelly fine sandy loam, very gravelly sandy loam	GC-GM, SC-SM, GC, SC	A-2, A-6, A-2-4, A-2-6, A-1, A-4	0-30	15-30	55-85	30-55	25-55	20-45	23-38	6-14
	22-28	Very gravelly loam, very gravelly fine sandy loam, extremely gravelly sandy loam, very gravelly sandy clay loam, gravelly loam, gravelly clay loam	GC, SC, GC-GM, SC-SM	A-2, A-6, A-4, A-2-4, A-2-6, A-1	0-30	7-30	55-90	30-65	25-55	20-45	20-38	4-14
	28-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Stott Knob, very stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	SC, ML, CL-ML, SM, SC-SM, CL	A-4, A-2-4, A-1-b	0-5	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	CL-ML, SC, SC-SM, CL	A-2-4, A-4, A-2-6, A-6, A-1-b	0-5	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
MsD:												
Meadowfield, very stony-----	0-4	Very gravelly loam, extremely gravelly very fine sandy loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, GC-GM, SM, SC-SM	A-1, A-2-4, A-4	0-30	22-30	65-85	30-65	25-60	20-45	13-25	NP-7
	4-22	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam, extremely gravelly fine sandy loam, very gravelly sandy loam	SC, GC, GC-GM, SC-SM	A-6, A-2-6, A-2-4, A-1, A-2, A-4	0-30	15-30	55-85	30-55	25-55	20-45	23-38	6-14
	22-28	Very gravelly loam, very gravelly fine sandy loam, extremely gravelly sandy loam, very gravelly sandy clay loam, gravelly loam, gravelly clay loam	GC-GM, GC, SC, SC-SM	A-2-6, A-2-4, A-1, A-4, A-6, A-2	0-30	7-30	55-90	30-65	25-55	20-45	20-38	4-14
	28-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Stott Knob, very stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	ML, SC, SC-SM, CL, SM, CL-ML	A-4, A-2-4, A-1-b	0-5	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-2-4, A-2-6, A-1-b, A-6	0-5	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
MsE:												
Meadowfield, very stony-----	0-4	Very gravelly loam, extremely gravelly very fine sandy loam, very gravelly fine sandy loam, very gravelly sandy loam	SM, GC-GM, GM, SC-SM	A-1, A-2-4, A-4	0-30	22-30	65-85	30-65	25-60	20-45	13-25	NP-7
	4-22	Very gravelly clay loam, very gravelly sandy clay loam, very gravelly loam, extremely gravelly fine sandy loam, very gravelly sandy loam	SC, GC, SC-SM, GC-GM	A-6, A-1, A-4, A-2-4, A-2-6, A-2	0-30	15-30	55-85	30-55	25-55	20-45	23-38	6-14
	22-28	Very gravelly loam, very gravelly fine sandy loam, extremely gravelly sandy loam, very gravelly sandy clay loam, gravelly loam, gravelly clay loam	SC, SC-SM, GC-GM, GC	A-6, A-2, A-4, A-2-6, A-1, A-2-4	0-30	7-30	55-90	30-65	25-55	20-45	20-38	4-14
	28-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Stott Knob, very stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	SC, SM, CL-ML, ML, CL, SC-SM	A-4, A-2-4, A-1-b	0-5	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4, A-2-6, A-6, A-1-b	0-5	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Pt:												
Pits, quarry----	0-80	Bedrock			---	---	---	---	---	---	0-0	NP

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	
RbD:												
Rhodhiss, very rocky----------	0-10	Coarse sandy loam, sandy loam, loam, loamy sand	SM, SC-SM	A-2, A-1, A-4, A-2-4	0-1	0-2	90-100	80-100	50-80	20-45	12-25	NP-7
	10-27	Sandy clay loam, clay loam, loam	SC-SM, SC, CL-ML, CL	A-4, A-2, A-2-6, A-2-4, A-6	0-1	0-2	90-100	80-100	60-85	30-60	23-38	6-14
	27-80	Coarse sandy loam, sandy loam, loamy sand, loam	SM, SC, CL, SC-SM, CL-ML, ML	A-2, A-1, A-2-4, A-4	0-1	0-2	90-100	80-100	50-85	15-50	9-31	NP-10
Bannertown, very rocky----------	0-4	Gravelly coarse sandy loam, sandy loam, loam	CL-ML, ML, SM, SC-SM	A-2, A-4, A-1, A-2-4	0-5	0-22	70-95	45-90	40-80	15-50	12-25	NP-6
	4-19	Gravelly fine sandy loam, sandy loam, fine sandy loam, loam	SC-SM, CL-ML, SM, ML	A-2, A-1, A-2-4, A-4	0-10	0-10	55-100	50-90	30-75	15-50	15-25	NP-6
	19-27	Gravelly fine sandy loam, sandy loam, fine sandy loam, loamy sand, loamy fine sand	SM, SC-SM	A-2, A-4, A-1, A-2-4	0-10	0-10	55-95	45-90	25-70	10-40	12-25	NP-6
	27-30	Weathered bedrock			---	---	---	---	---	---	---	---
	30-80	Unweathered bedrock			---	---	---	---	---	---	---	---
RrE:												
Rhodhiss, very bouldery-------	0-10	Coarse sandy loam, sandy loam, loam, loamy sand	SM, SC-SM	A-2-4, A-2, A-4, A-1	1-5	2-10	90-100	80-100	50-80	20-45	12-25	NP-7
	10-27	Sandy clay loam, clay loam, loam	CL-ML, SC-SM, SC, CL	A-2, A-6, A-4, A-2-4, A-2-6	1-5	0-2	90-100	80-100	60-85	30-60	23-38	6-14
	27-80	Coarse sandy loam, sandy loam, loamy sand, loam	SC, CL-ML, ML, SM, CL, SC-SM	A-4, A-2, A-1, A-2-4	1-5	0-2	90-100	80-100	50-85	15-50	9-31	NP-10

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	
Bannertown, very bouldery-------	0-4	Gravelly coarse sandy loam, sandy loam, loam	SC-SM, ML, SM, CL-ML	A-2, A-1, A-2-4, A-4	0-10	0-22	70-95	45-90	40-80	15-50	12-25	NP-6
	4-19	Gravelly fine sandy loam, sandy loam, fine sandy loam, loam	SM, ML, CL-ML, SC-SM	A-4, A-1, A-2, A-2-4	0-10	0-10	55-100	50-90	30-75	15-50	15-25	NP-6
	19-27	Gravelly fine sandy loam, sandy loam, fine sandy loam, loamy sand, loamy fine sand	SC-SM, SM	A-2-4, A-2, A-4, A-1	0-10	0-10	55-95	45-90	25-70	10-40	12-25	NP-6
	27-30	Weathered bedrock			---	---	---	---	---	---	---	---
	30-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock outcrop----	0-80	Bedrock			---	---	---	---	---	---	---	---
RsB:												
Rhodhiss, stony-	0-4	Gravelly fine sandy loam, sandy loam, gravelly loam, fine sandy loam, loamy sand	SC-SM, SM, SC	A-1, A-2-4, A-2	0-1	0-10	75-95	60-80	40-75	10-35	16-30	2-10
	4-36	Clay loam, fine sandy loam, loam, sandy clay loam, gravelly sandy clay loam	CL, SC, CL-ML, SC-SM	A-2-4, A-2-6, A-6, A-4	0-1	0-10	90-100	80-100	60-85	30-60	23-38	6-14
	36-43	Loam, sandy loam, fine sandy loam, sandy clay loam, gravelly sandy loam	CL, ML, SM, SC-SM, CL-ML, SC	A-2-4, A-4, A-1	0-1	0-10	90-100	80-100	50-85	20-55	12-31	NP-10
	43-80	Fine sandy loam, sandy loam, loamy sand, loam, gravelly fine sandy loam	CL, ML, SM, SC, CL-ML, SC-SM	A-4, A-1, A-2-4	0-1	0-10	90-100	80-100	45-80	15-50	12-30	NP-10
Stott Knob, stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	CL, ML, SM, SC-SM, CL-ML, SC	A-4, A-1-b, A-2-4	0-1	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	CL, CL-ML, SC, SC-SM	A-4, A-2-6, A-6, A-2-4, A-1-b	0-1	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
RsC:												
Rhodhiss, stony-	0-4	Gravelly fine sandy loam, sandy loam, gravelly loam, fine sandy loam, loamy sand	SC-SM, SM, SC	A-2, A-2-4, A-1	0-1	0-10	75-95	60-80	40-75	10-35	16-30	2-10
	4-36	Clay loam, fine sandy loam, loam, sandy clay loam, gravelly sandy clay loam	SC-SM, CL, SC, CL-ML	A-6, A-2-4, A-2-6, A-4	0-1	0-10	90-100	80-100	60-85	30-60	23-38	6-14
	36-43	Loam, sandy loam, fine sandy loam, sandy clay loam, gravelly sandy loam	SC-SM, CL, ML, SM, SC, CL-ML	A-4, A-2-4, A-1	0-1	0-10	90-100	80-100	50-85	20-55	12-31	NP-10
	43-80	Fine sandy loam, sandy loam, loamy sand, loam, gravelly fine sandy loam	CL-ML, SC-SM, CL, ML, SM, SC	A-4, A-1, A-2-4	0-1	0-10	90-100	80-100	45-80	15-50	12-30	NP-10
Stott Knob, stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	SC, SC-SM, SM, ML, CL-ML, CL	A-1-b, A-2-4, A-4	0-1	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	SC, SC-SM, CL-ML, CL	A-1-b, A-6, A-2-6, A-4, A-2-4	0-1	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---
RsD:												
Rhodhiss, stony-	0-4	Gravelly fine sandy loam, sandy loam, gravelly loam, fine sandy loam, loamy sand	SC, SC-SM, SM	A-2, A-2-4, A-1	0-1	0-10	75-95	60-80	40-75	10-35	16-30	2-10
	4-36	Clay loam, fine sandy loam, loam, sandy clay loam, gravelly sandy clay loam	SC-SM, CL, SC, CL-ML	A-2-4, A-2-6, A-4, A-6	0-1	0-10	90-100	80-100	60-85	30-60	23-38	6-14
	36-43	Loam, sandy loam, fine sandy loam, sandy clay loam, gravelly sandy loam	SC-SM, CL-ML, SC, SM, ML, CL	A-4, A-1, A-2-4	0-1	0-10	90-100	80-100	50-85	20-55	12-31	NP-10
	43-80	Fine sandy loam, sandy loam, loamy sand, loam, gravelly fine sandy loam	SC-SM, CL, ML, SM, SC, CL-ML	A-4, A-1, A-2-4	0-1	0-10	90-100	80-100	45-80	15-50	12-30	NP-10

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	
Stott Knob, stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	ML, SC-SM, SC, CL-ML, CL, SM	A-4, A-1-b, A-2-4	0-1	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	SC-SM, SC, CL-ML, CL	A-2-6, A-6, A-1-b, A-4, A-2-4	0-1	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---
RsE: Rhodhiss, stony-	0-4	Gravelly fine sandy loam, sandy loam, gravelly loam, fine sandy loam, loamy sand	SC, SC-SM, SM	A-1, A-2, A-2-4	0-5	0-10	75-95	60-80	40-75	10-35	16-30	2-10
	4-36	Clay loam, fine sandy loam, loam, sandy clay loam, gravelly sandy clay loam	SC-SM, CL, SC, CL-ML	A-2-4, A-6, A-4, A-2-6	0-2	0-10	90-100	80-100	60-85	30-60	23-38	6-14
	36-43	Loam, sandy loam, fine sandy loam, sandy clay loam, gravelly sandy loam	SC-SM, CL, ML, SM, SC, CL-ML	A-1, A-4, A-2-4	0-2	0-10	90-100	80-100	50-85	20-55	12-31	NP-10
	43-80	Fine sandy loam, sandy loam, loamy sand, loam, gravelly fine sandy loam	SC-SM, CL, ML, CL-ML, SC, SM	A-2-4, A-1, A-4	0-2	0-10	90-100	80-100	45-80	15-50	12-30	NP-10
Stott Knob, stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	SM, SC-SM, CL, CL-ML, ML, SC	A-4, A-2-4, A-1-b	0-1	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	SC-SM, SC, CL-ML, CL	A-2-6, A-1-b, A-2-4, A-4, A-6	0-1	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
SrC:												
Siloam----------	0-8	Fine sandy loam, sandy loam, gravelly loam	SC-SM, SC	A-1, A-4, A-2-4	0-2	0-10	70-95	65-90	45-75	20-48	15-30	5-10
	8-15	Sandy clay loam, clay loam, clay, gravelly loam	CL, SC, CH	A-7-6, A-6	0-1	0-10	80-100	80-100	65-95	40-85	30-52	11-28
	15-26	Weathered bedrock			---	---	---	---	---	---	---	---
	26-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Redbrush--------	0-8	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, very gravelly sandy loam	SC, CL-ML, SC-SM, CL	A-6, A-2-6, A-2-4, A-4	0-1	0-10	80-100	70-90	40-90	30-75	21-34	4-14
	8-18	Clay, gravelly clay loam, sandy clay	SC, CH, CL	A-7, A-2-7	0-1	0-10	65-95	60-95	50-95	30-80	44-66	22-39
	18-25	Clay loam, fine sandy loam, sandy clay loam, gravelly loam, sandy clay	CL, SC	A-6, A-4, A-5, A-7, A-2	0-1	0-20	60-95	45-95	40-95	25-80	26-48	8-25
	25-37	Weathered bedrock			---	---	---	---	---	---	---	---
	37-80	Unweathered bedrock			---	---	---	---	---	---	---	---
SrE:												
Siloam----------	0-8	Fine sandy loam, sandy loam, gravelly loam	SC, SC-SM	A-2-4, A-1, A-4	0-2	0-10	70-95	65-90	45-75	20-48	15-30	5-10
	8-15	Sandy clay loam, clay loam, clay, gravelly loam	CH, CL, SC	A-7-6, A-6	0-1	0-10	80-100	80-100	65-95	40-85	30-52	11-28
	15-26	Weathered bedrock			---	---	---	---	---	---	---	---
	26-80	Unweathered bedrock			---	---	---	---	---	---	---	---
Redbrush--------	0-8	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, very gravelly sandy loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-2-6, A-2-4	0-1	0-10	80-100	70-90	40-90	30-75	21-34	4-14
	8-18	Clay, gravelly clay loam, sandy clay	SC, CL, CH	A-2-7, A-7	0-1	0-10	65-95	60-95	50-95	30-80	44-66	22-39
	18-25	Clay loam, fine sandy loam, sandy clay loam, gravelly loam, sandy clay	CL, SC	A-7, A-6, A-4, A-2, A-5	0-1	0-20	60-95	45-95	40-95	25-80	26-48	8-25
	25-37	Weathered bedrock			---	---	---	---	---	---	---	---
	37-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
StC:												
Stott Knob, stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	CL-ML, SC, SM, SC-SM, ML, CL	A-4, A-2-4, A-1-b	0-1	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	SC, CL, SC-SM, CL-ML	A-4, A-2-6, A-2-4, A-6, A-1-b	0-1	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---
StD:												
Stott Knob, stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	SM, SC-SM, SC, ML, CL-ML, CL	A-4, A-1-b, A-2-4	0-1	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	CL-ML, SC-SM, SC, CL	A-1-b, A-6, A-2-6, A-4, A-2-4	0-1	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---
StE:												
Stott Knob, stony----------	0-4	Gravelly loam, gravelly fine sandy loam, gravelly sandy loam, loam	CL-ML, ML, CL, SC-SM, SM, SC	A-1-b, A-2-4, A-4	0-1	0-5	70-95	60-85	50-75	20-50	16-27	2-8
	4-34	Gravelly loam, gravelly clay loam, sandy clay loam	SC, SC-SM, CL, CL-ML	A-2-6, A-6, A-4, A-2-4, A-1-b	0-1	0-5	70-95	45-85	40-85	25-65	23-38	6-14
	34-49	Weathered bedrock			---	---	---	---	---	---	---	---
	49-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
TaD: Tate, extremely stony	0-5	Extremely gravelly fine sandy loam, gravelly fine sandy loam, very gravelly fine sandy loam	GC-GM, SC, SM, GM, GC, SC-SM	A-2-4, A-1, A-4	3-15	5-15	70-80	65-70	40-65	25-40	12-30	NP-10
	5-47	Sandy clay loam, clay loam, loam, gravelly fine sandy loam, sandy loam	ML, SC, SC-SM, CL-ML, CL	A-6, A-4	0-2	0-15	85-100	80-95	65-95	40-75	23-38	6-14
	47-80	Very gravelly sandy loam, gravelly loamy fine sand, gravelly loam, sandy loam, loam, cobbly sandy loam	SC, SC-SM, SM, GC, GM, GC-GM	A-4, A-2-4, A-1	0-2	0-30	40-100	35-90	30-65	25-50	12-32	NP-11
TcC: Tate	0-5	Fine sandy loam, sandy loam, loam, gravelly fine sandy loam	CL, CL-ML, ML, SC, SC-SM, SM	A-4	0	0-5	85-90	80-85	60-75	40-65	12-30	NP-10
	5-47	Sandy clay loam, clay loam, loam, gravelly fine sandy loam, sandy loam	CL, CL-ML, SC-SM, SC, ML	A-4, A-6	0	0-15	85-100	80-95	65-95	40-75	23-38	6-14
	47-80	Very gravelly sandy loam, gravelly loamy fine sand, gravelly loam, sandy loam, loam, cobbly sandy loam	SC, GC, GC-GM, GM, SC-SM, SM	A-1, A-2-4, A-4	0	0-30	40-100	35-90	30-65	25-50	12-32	NP-11
Colvard	0-10	Fine sandy loam, sandy loam, loam	SM, CL-ML, ML, SC-SM	A-4, A-2-4	0	0-5	95-100	75-100	45-85	25-50	11-25	NP-7
	10-50	Fine sandy loam, sandy loam, loam	SM, CL-ML, SC-SM, ML	A-2-4, A-4	0	0-5	90-100	75-100	45-85	25-50	11-25	NP-7
	50-80	Gravelly loamy fine sand, stratified gravelly sandy loam to extremely gravelly sand	GC-GM, GM, SC-SM, SM	A-2-4, A-2, A-1-b	0	0-50	40-90	30-90	25-85	10-35	9-25	NP-7

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	
ToB:												
Toast, rocky----	0-8	Coarse sandy loam, sandy loam, loam	ML, SM	A-4, A-2-4	0-1	0-2	90-100	80-100	50-95	25-50	9-23	NP-3
	8-23	Clay, clay loam, sandy clay	SM, ML	A-7, A-6, A-4, A-5	0-1	0-2	90-100	85-100	65-95	45-75	31-48	5-12
	23-29	Sandy clay, sandy clay loam, loam, clay loam	SC-SM, ML, SM	A-4	0-1	0-2	90-100	85-100	60-95	45-70	24-36	3-7
	29-80	Coarse sandy loam, sandy clay loam, sandy loam, loamy coarse sand, loamy sand, loam	SM, ML	A-4, A-2-4	0-1	0-2	80-100	70-100	55-80	20-50	9-23	NP-3
TtC:												
Toast, very rocky----------	0-8	Coarse sandy loam, sandy loam, loam	SM, ML	A-4, A-2-4	0-1	0-2	90-100	80-100	50-95	25-50	9-23	NP-3
	8-23	Clay, clay loam, sandy clay	SM, ML	A-4, A-6, A-7, A-5	0-1	0-2	90-100	85-100	65-95	45-75	31-48	5-12
	23-29	Sandy clay, sandy clay loam, loam, clay loam	SM, ML, SC-SM	A-4	0-1	0-2	90-100	85-100	60-95	45-70	24-36	3-7
	29-80	Coarse sandy loam, sandy clay loam, sandy loam, loamy coarse sand, loamy sand, loam	SM, ML	A-2-4, A-4	0-1	0-2	80-100	70-100	55-80	20-50	9-23	NP-3
Bannertown, very rocky----------	0-4	Gravelly coarse sandy loam, sandy loam, loam	CL-ML, ML, SC-SM, SM	A-2, A-2-4, A-4, A-1	0-5	0-22	70-95	45-90	40-80	15-50	12-25	NP-6
	4-19	Gravelly fine sandy loam, sandy loam, fine sandy loam, loam	SC-SM, CL-ML, SM, ML	A-1, A-2-4, A-2, A-4	0-10	0-10	55-100	50-90	30-75	15-50	15-25	NP-6
	19-27	Gravelly fine sandy loam, sandy loam, fine sandy loam, loamy sand, loamy fine sand	SM, SC-SM	A-1, A-2-4, A-2, A-4	0-10	0-10	55-95	45-90	25-70	10-40	12-25	NP-6
	27-30	Weathered bedrock			---	---	---	---	---	---	---	---
	30-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
TuB:												
Toast, rocky----	0-8	Coarse sandy loam, sandy loam, loam	SM, ML	A-4, A-2-4	0-1	0-2	90-100	80-100	50-95	25-50	9-23	NP-3
	8-23	Clay, clay loam, sandy clay	ML, SM	A-6, A-4, A-5, A-7	0-1	0-2	90-100	85-100	65-95	45-75	31-48	5-12
	23-29	Sandy clay, sandy clay loam, loam, clay loam	SM, ML, SC-SM	A-4	0-1	0-2	90-100	85-100	60-95	45-70	24-36	3-7
	29-80	Coarse sandy loam, sandy clay loam, sandy loam, loamy coarse sand, loamy sand, loam	SM, ML	A-2-4, A-4	0-1	0-2	80-100	70-100	55-80	20-50	9-23	NP-3
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
TwC:												
Toast, very rocky----------	0-8	Coarse sandy loam, sandy loam, loam	SM, ML	A-4, A-2-4	0-1	0-2	90-100	80-100	50-95	25-50	9-23	NP-3
	8-23	Clay, clay loam, sandy clay	SM, ML	A-7, A-6, A-4, A-5	0-1	0-2	90-100	85-100	65-95	45-75	31-48	5-12
	23-29	Sandy clay, sandy clay loam, loam, clay loam	SM, ML, SC-SM	A-4	0-1	0-2	90-100	85-100	60-95	45-70	24-36	3-7
	29-80	Coarse sandy loam, sandy clay loam, sandy loam, loamy coarse sand, loamy sand, loam	ML, SM	A-2-4, A-4	0-1	0-2	80-100	70-100	55-80	20-50	9-23	NP-3
Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
Bannertown, very rocky----------	0-4	Gravelly coarse sandy loam, sandy loam, loam	SM, ML, SC-SM, CL-ML	A-2-4, A-2, A-4, A-1	0-5	0-22	70-95	45-90	40-80	15-50	12-25	NP-6
	4-19	Gravelly fine sandy loam, sandy loam, fine sandy loam, loam	SC-SM, CL-ML, SM, ML	A-1, A-2, A-4, A-2-4	0-10	0-10	55-100	50-90	30-75	15-50	15-25	NP-6
	19-27	Gravelly fine sandy loam, sandy loam, fine sandy loam, loamy sand, loamy fine sand	SC-SM, SM	A-4, A-1, A-2-4, A-2	0-10	0-10	55-95	45-90	25-70	10-40	12-25	NP-6
	27-30	Weathered bedrock			---	---	---	---	---	---	---	---
	30-80	Unweathered bedrock			---	---	---	---	---	---	---	---

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	
Ud: Udorthents, loamy----------	0-80	Stratified loamy sand to clay loam	SC-SM, SC, CL-ML, CL	A-7, A-1, A-5, A-4, A-6, A-2	0	0-15	80-100	70-100	35-100	10-80	12-60	NP-26
Ur: Urban land------	---	---	---	---	---	---	---	---	---	---	---	---
WfB2: Woolwine, moderately eroded---------	0-8	Gravelly sandy clay loam, gravelly loam, gravelly clay loam, sandy loam, fine sandy loam	ML, SM, SC-SM	A-2-4, A-4	0	0-5	80-100	75-100	55-90	25-55	14-30	1-5
	8-30	Gravelly clay, clay, clay loam, sandy clay	SM, ML	A-6, A-7-5, A-5, A-4	0-1	0-5	75-100	50-95	45-90	40-81	31-48	5-12
	30-80	Weathered bedrock			---	---	---	---	---	---	---	---
Fairview, moderately eroded---------	0-9	Gravelly sandy clay loam, clay loam, loam	SM, SC-SM, ML	A-2-4, A-4	0	0-5	80-100	75-100	55-90	25-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	SM, ML	A-6, A-4, A-5, A-7-5	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-6, A-4, A-5, A-7-5	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SC-SM, CL-ML, SM, ML	A-2-4, A-4	0-1	0-5	80-100	70-100	60-95	25-65	13-25	1-5

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	
Westfield, moderately eroded---------	0-9	Gravelly sandy clay loam, gravelly loam, gravelly clay loam, sandy loam, fine sandy loam	SC-SM, SM, ML	A-4, A-2-4	0	0-5	80-100	75-100	55-90	25-55	14-30	1-5
	9-28	Clay, clay loam, gravelly sandy clay	SM, ML	A-7, A-5, A-4, A-6	0-1	0-5	85-100	80-100	65-95	45-80	31-48	5-12
	28-35	Gravelly sandy clay loam, sandy loam, fine sandy loam, loam, clay loam	ML, SM, SC-SM	A-2-4, A-4	0-1	0-5	80-100	70-100	60-95	25-65	16-30	NP-5
	35-48	Gravelly loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, ML, SC-SM	A-4, A-2-4	0-1	0-5	80-100	65-95	60-95	25-65	14-30	NP-5
	48-80	Weathered bedrock			---	---	---	---	---	---	---	---
WfC2: Woolwine, moderately eroded---------	0-8	Gravelly sandy clay loam, gravelly loam, gravelly clay loam, sandy loam, fine sandy loam	ML, SC-SM, SM	A-2-4, A-4	0	0-5	80-100	75-100	55-90	25-55	14-30	1-5
	8-30	Gravelly clay, clay, clay loam, sandy clay	SM, ML	A-4, A-5, A-7-5, A-6	0-1	0-5	75-100	50-95	45-90	40-81	31-48	5-12
	30-80	Weathered bedrock			---	---	---	---	---	---	---	---
Fairview, moderately eroded---------	0-9	Gravelly sandy clay loam, clay loam, loam	SC-SM, SM, ML	A-2-4, A-4	0	0-5	80-100	75-100	55-90	25-55	14-30	1-5
	9-24	Clay, clay loam, sandy clay	SM, ML	A-4, A-5, A-7-5, A-6	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	24-29	Sandy clay loam, clay loam, sandy loam, loam	SM, ML	A-6, A-4, A-5, A-7-5	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	29-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	CL-ML, SC-SM, SM, ML	A-4, A-2-4	0-1	0-5	80-100	70-100	60-95	25-65	13-25	1-5

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	
Westfield, moderately eroded---------	0-9	Gravelly sandy clay loam, gravelly loam, gravelly clay loam, sandy loam, fine sandy loam	SC-SM, ML, SM	A-4, A-2-4	0	0-5	80-100	75-100	55-90	25-55	14-30	1-5
	9-28	Clay, clay loam, gravelly sandy clay	SM, ML	A-4, A-7, A-6, A-5	0-1	0-5	85-100	80-100	65-95	45-80	31-48	5-12
	28-35	Gravelly sandy clay loam, sandy loam, fine sandy loam, loam, clay loam	SM, SC-SM, ML	A-2-4, A-4	0-1	0-5	80-100	70-100	60-95	25-65	16-30	NP-5
	35-48	Gravelly loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, SC-SM, ML	A-4, A-2-4	0-1	0-5	80-100	65-95	60-95	25-65	14-30	NP-5
	48-80	Weathered bedrock			---	---	---	---	---	---	---	---
WoD:												
Woolwine, stony-	0-4	Gravelly loam, gravelly clay loam, gravelly sandy clay loam, sandy loam, fine sandy loam	SM, SC-SM	A-1-b, A-2-4, A-4	0-1	0-8	75-90	50-80	32-55	15-40	14-20	NP-5
	4-30	Gravelly clay, clay, clay loam, sandy clay	SM, ML	A-5, A-4, A-7-5, A-6	0-1	0-5	75-100	50-95	45-90	40-81	31-48	5-12
	30-80	Weathered bedrock			---	---	---	---	---	---	---	---
Fairview, stony-	0-5	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	ML, SM	A-4, A-2-4	0-1	0-15	75-100	55-100	45-90	30-65	12-25	NP-3
	5-20	Clay, clay loam, sandy clay	SM, ML	A-6, A-7-5, A-5, A-4	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	20-25	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-6, A-7-5, A-5, A-4	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	25-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SC-SM, SM, ML, CL-ML	A-2-4, A-4	0-1	0-5	80-100	70-100	60-95	25-65	13-25	1-5

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	
Westfield, stony	0-7	Gravelly fine sandy loam, gravelly loam, gravelly sandy loam, sandy clay loam	SM, ML	A-2-4, A-4	0-1	0-15	75-100	55-100	45-90	30-65	12-25	NP-3
	7-35	Clay, clay loam, gravelly sandy clay	ML, SM	A-5, A-7, A-6, A-4	0-1	0-5	85-100	80-100	65-95	45-80	31-48	5-12
	35-48	Gravelly loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SM, SC-SM, ML	A-2-4, A-4	0-1	0-5	80-100	65-95	60-95	25-65	14-30	NP-5
	48-80	Weathered bedrock			---	---	---	---	---	---	---	---
WoE:												
Woolwine, stony-	0-4	Gravelly loam, gravelly clay loam, gravelly sandy clay loam, sandy loam, fine sandy loam	SM, SC-SM	A-1-b, A-4, A-2-4	0-1	0-8	75-90	50-80	32-55	15-40	14-20	NP-5
	4-30	Gravelly clay, clay, clay loam, sandy clay	SM, ML	A-4, A-5, A-7-5, A-6	0-1	0-5	75-100	50-95	45-90	40-81	31-48	5-12
	30-80	Weathered bedrock			---	---	---	---	---	---	---	---
Fairview, stony-	0-5	Gravelly fine sandy loam, gravelly sandy loam, gravelly loam	ML, SM	A-4, A-2-4	0-1	0-15	75-100	55-100	45-90	30-65	12-25	NP-3
	5-20	Clay, clay loam, sandy clay	SM, ML	A-6, A-4, A-5, A-7-5	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	20-25	Sandy clay loam, clay loam, sandy loam, loam	ML, SM	A-5, A-7-5, A-6, A-4	0-1	0-5	90-100	80-100	65-100	45-80	31-48	5-12
	25-80	Loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	CL-ML, ML, SC-SM, SM	A-2-4, A-4	0-1	0-5	80-100	70-100	60-95	25-65	13-25	1-5
Westfield, stony	0-9	Gravelly fine sandy loam, gravelly loam, gravelly sandy loam, sandy clay loam	ML, SM	A-4, A-2-4	0-1	0-15	75-100	55-100	45-90	30-65	12-25	NP-3
	9-35	Clay, clay loam, gravelly sandy clay	ML, SM	A-4, A-6, A-7, A-5	0-1	0-5	85-100	80-100	65-95	45-80	31-48	5-12
	35-48	Gravelly loam, sandy loam, fine sandy loam, sandy clay loam, clay loam	SC-SM, ML, SM	A-4, A-2-4	0-1	0-5	80-100	65-95	60-95	25-65	14-30	NP-5
	48-80	Weathered bedrock			---	---	---	---	---	---	---	---

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			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
ArA:												
Arkaqua, undrained---	0-10	10-27	1.20-1.50	14.00-42.00	0.13-0.22	0.0-2.9	1.0-8.0	.24	.24	5	6	48
	10-45	18-35	1.30-1.55	4.00-14.00	0.13-0.20	0.0-2.9	1.0-2.0	.28	.28			
	45-80	5-45	1.30-1.70	14.00-42.00	0.02-0.20	0.0-2.9	0.1-1.0	.10	.28			
BaC:												
Bandana--------------	0-4	5-20	1.30-1.60	14.00-42.00	0.08-0.20	0.0-2.9	1.0-8.0	.28	.28	4	3	86
	4-26	5-20	1.30-1.60	14.00-42.00	0.08-0.17	0.0-2.9	0.5-2.0	.32	.32			
	26-30	2-20	1.30-1.60	14.00-42.00	0.09-0.17	0.0-2.9	1.0-2.0	.28	.28			
	30-80	1-10	1.40-1.70	42.00-141.00	0.02-0.05	0.0-2.9	0.1-1.0	.02	.05			
Tate-----------------	0-5	5-25	1.35-1.60	14.00-42.00	0.11-0.21	0.0-2.9	1.0-8.0	.15	.17	5	3	86
	5-47	18-35	1.30-1.55	4.00-14.00	0.13-0.18	0.0-2.9	0.2-1.0	.15	.17			
	47-80	5-28	1.35-1.60	4.00-42.00	0.06-0.18	0.0-2.9	0.1-1.0	.05	.20			
Nikwasi, undrained---	0-31	5-18	1.30-1.50	14.00-42.00	0.11-0.21	0.0-2.9	5.0-12	.10	.10	4	5	56
	31-80	1-5	1.40-1.70	42.00-141.00	0.02-0.08	0.0-2.9	0.1-2.0	.10	.32			
BbB, BbC, BbD:												
Braddock-------------	0-9	10-25	1.20-1.50	4.00-42.00	0.13-0.18	0.0-2.9	1.0-8.0	.17	.20	5	3	86
	9-56	35-65	1.20-1.50	4.00-14.00	0.10-0.17	3.0-5.9	0.0-0.5	.17	.17			
	56-80	18-40	1.20-1.50	4.00-42.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
BcB:												
Braddock-------------	0-9	10-25	1.20-1.50	14.00-42.00	0.10-0.14	0.0-2.9	1.0-8.0	.10	.17	5	4	86
	9-56	35-65	1.20-1.50	4.00-14.00	0.10-0.17	3.0-5.9	0.0-0.5	.17	.17			
	56-80	18-40	1.20-1.50	4.00-42.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
BdC, BdD:												
Braddock, stony------	0-9	10-25	1.20-1.50	14.00-42.00	0.10-0.14	0.0-2.9	1.0-8.0	.10	.17	5	4	86
	9-56	35-65	1.20-1.50	4.00-14.00	0.10-0.17	3.0-5.9	0.0-0.5	.17	.17			
	56-80	18-40	1.20-1.50	4.00-42.00	0.11-0.18	0.0-2.9	0.0-0.5	.24	.28			
BpC, BpD:												
Braddock, rubbly-----	0-7	5-20	1.20-1.50	14.00-42.00	0.08-0.13	0.0-2.9	1.0-8.0	.05	.20	5	8	0
	7-13	15-35	1.20-1.50	4.00-14.00	0.11-0.17	3.0-5.9	0.0-0.5	.15	.20			
	13-63	35-65	1.20-1.50	4.00-14.00	0.10-0.17	3.0-5.9	0.0-0.5	.10	.17			
	63-80	18-40	1.20-1.50	4.00-42.00	0.11-0.18	0.0-2.9	0.0-0.5	.17	.28			

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					
Pilot Mountain, rubbly	0-2	---	0.50-0.53	42.00-141.00	0.55-0.65	---	70-95	---	---	5	8	0
	2-12	7-20	1.30-1.60	14.00-42.00	0.05-0.14	0.0-2.9	1.0-8.0	.05	.24			
	12-22	18-45	1.20-1.60	4.00-14.00	0.05-0.12	0.0-2.9	0.5-1.0	.05	.20			
	22-30	18-50	1.20-1.60	4.00-14.00	0.05-0.12	3.0-5.9	0.5-1.0	.05	.20			
	30-80	10-35	1.20-1.60	4.00-42.00	0.04-0.14	0.0-2.9	0.2-1.0	.05	.24			
BrD, BrE:												
Brevard, very bouldery	0-8	5-20	1.30-1.60	14.00-42.00	0.07-0.15	0.0-2.9	1.0-8.0	.10	.17	5	4	86
	8-48	18-35	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.2-1.0	.15	.20			
	48-80	5-25	1.35-1.60	14.00-42.00	0.07-0.15	0.0-2.9	0.1-1.0	.10	.24			
Greenlee, very bouldery	0-12	5-20	1.30-1.60	14.00-42.00	0.04-0.09	0.0-2.9	1.0-8.0	.02	.24	3	5	56
	12-80	8-22	1.40-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.0	.05	.28			
CeD, CeE:												
Chestnut, very rocky	0-3	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	1.0-8.0	.10	.20	3	4	86
	3-21	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	0.2-1.0	.20	.32			
	21-29	5-20	1.35-1.60	14.00-42.00	0.06-0.15	0.0-2.9	0.1-1.0	.28	.43			
	29-45	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	45-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Peaks, very rocky	0-4	4-16	1.20-1.50	14.00-42.00	0.05-0.14	0.0-2.9	1.0-8.0	.05	.10	2	5	56
	4-19	5-20	1.20-1.60	14.00-42.00	0.05-0.12	0.0-2.9	0.2-1.0	.05	.28			
	19-27	5-20	1.20-1.60	14.00-42.00	0.04-0.12	0.0-2.9	0.1-1.0	.05	.37			
	27-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
CfF:												
Chestnut, very rocky	0-3	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	1.0-8.0	.10	.20	3	4	86
	3-21	5-20	1.35-1.60	14.00-42.00	0.09-0.18	0.0-2.9	0.2-1.0	.20	.32			
	21-29	5-20	1.35-1.60	14.00-42.00	0.06-0.15	0.0-2.9	0.1-1.0	.28	.43			
	29-45	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	45-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Peaks, very rocky	0-4	4-16	1.20-1.50	14.00-42.00	0.05-0.14	0.0-2.9	1.0-8.0	.05	.10	2	5	56
	4-19	5-20	1.20-1.60	14.00-42.00	0.05-0.12	0.0-2.9	0.2-1.0	.05	.28			
	19-27	5-20	1.20-1.60	14.00-42.00	0.04-0.12	0.0-2.9	0.1-1.0	.05	.37			
	27-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Tuckasegee, very rocky	0-13	5-20	1.20-1.50	14.00-42.00	0.11-0.18	0.0-2.9	3.0-8.0	.15	.20	5	6	48
	13-47	9-25	1.30-1.60	14.00-42.00	0.09-0.19	0.0-2.9	0.5-3.0	.24	.37			
	47-80	5-20	1.30-1.60	14.00-42.00	0.05-0.19	0.0-2.9	0.5-3.0	.20	.43			

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					
ChE:												
Cleveland, windswept-	0-4	6-20	1.20-1.50	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.15	.24	1	4	86
	4-15	6-20	1.20-1.50	14.00-42.00	0.10-0.18	0.0-2.9	0.5-8.0	.17	.37			
	15-80	---	---	0.00-0.00	0.00-0.01	---	---	---	---			
Rock outcrop---------	0-80	---	---	0.00-0.07	0.00-0.01	---	---	---	---	--	8	0
Peaks, windswept-----	0-4	4-16	1.20-1.50	14.00-42.00	0.05-0.14	0.0-2.9	1.0-8.0	.05	.10	2	5	56
	4-19	5-20	1.20-1.60	14.00-42.00	0.05-0.12	0.0-2.9	0.2-1.0	.05	.28			
	19-27	5-20	1.20-1.60	14.00-42.00	0.04-0.12	0.0-2.9	0.1-1.0	.05	.37			
	27-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
CkF:												
Cleveland, windswept-	0-4	6-20	1.20-1.50	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.15	.24	1	4	86
	4-15	6-20	1.20-1.50	14.00-42.00	0.10-0.18	0.0-2.9	0.5-8.0	.17	.37			
	15-80	---	---	0.00-0.00	0.00-0.01	---	---	---	---			
Rock outcrop---------	0-80	---	---	0.00-0.07	0.00-0.01	---	---	---	---	--	8	0
Peaks, windswept-----	0-4	4-16	1.20-1.50	14.00-42.00	0.05-0.14	0.0-2.9	1.0-8.0	.05	.10	2	5	56
	4-19	5-20	1.20-1.60	14.00-42.00	0.05-0.12	0.0-2.9	0.2-1.0	.05	.28			
	19-27	5-20	1.20-1.60	14.00-42.00	0.04-0.12	0.0-2.9	0.1-1.0	.05	.37			
	27-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
CmD:												
Cliffield, very stony	0-3	7-20	1.30-1.60	14.00-42.00	0.06-0.14	0.0-2.9	1.0-8.0	.05	.15	2	5	56
	3-23	15-35	1.30-1.60	4.00-14.00	0.07-0.12	0.0-2.9	0.2-1.0	.10	.24			
	23-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Cowee, very stony----	0-3	12-25	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.10	.17	3	7	38
	3-27	18-35	1.30-1.60	4.00-14.00	0.13-0.19	0.0-2.9	0.2-1.0	.17	.20			
	27-34	10-27	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.1-1.0	.24	.32			
	34-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
CnE:												
Cliffield, very rocky	0-3	7-20	1.30-1.60	14.00-42.00	0.06-0.14	0.0-2.9	1.0-8.0	.05	.15	2	5	56
	3-23	15-35	1.30-1.60	4.00-14.00	0.07-0.12	0.0-2.9	0.2-1.0	.10	.24			
	23-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Cowee, very rocky----	0-3	12-25	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.10	.17	3	7	38
	3-27	18-35	1.30-1.60	4.00-14.00	0.13-0.19	0.0-2.9	0.2-1.0	.17	.20			
	27-34	10-27	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.1-1.0	.24	.32			
	34-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			

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					
CoD, CoE:												
Cliffield, rubbly----	0-7	7-20	1.30-1.60	14.00-42.00	0.04-0.10	0.0-2.9	1.0-8.0	.02	.10	2	8	0
	7-27	15-35	1.30-1.60	4.00-14.00	0.06-0.11	0.0-2.9	0.2-1.0	.05	.24			
	27-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Sauratown, rubbly----	0-9	5-20	1.20-1.60	14.00-42.00	0.05-0.19	0.0-2.9	1.0-8.0	.05	.17	2	8	0
	9-26	18-35	1.30-1.60	4.00-14.00	0.11-0.17	0.0-2.9	0.2-1.0	.15	.24			
	26-29	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	29-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
CrB2:												
Clifford, moderately eroded--------------	0-6	18-35	1.20-1.60	4.00-14.00	0.10-0.18	0.0-2.9	1.0-2.0	.15	.17	5	5	56
	6-52	35-65	1.30-1.50	4.00-14.00	0.10-0.16	0.0-2.9	0.2-1.0	.20	.20			
	52-80	18-39	1.30-1.50	4.00-42.00	0.12-0.18	0.0-2.9	0.1-0.5	.28	.28			
CsA:												
Colvard--------------	0-10	4-20	1.45-1.65	14.00-42.00	0.11-0.17	0.0-2.9	1.0-8.0	.28	.28	5	3	86
	10-50	4-20	1.45-1.65	14.00-42.00	0.11-0.15	0.0-2.9	0.5-1.0	.37	.37			
	50-80	0-20	1.50-1.75	14.00-141.00	0.02-0.12	0.0-2.9	0.1-1.0	.20	.32			
Suches---------------	0-12	10-25	1.30-1.60	4.00-14.00	0.12-0.19	0.0-2.9	1.0-8.0	.37	.37	5	5	56
	12-54	18-38	1.35-1.60	4.00-14.00	0.14-0.20	0.0-2.9	0.5-2.0	.32	.32			
	54-80	3-35	1.40-1.70	4.00-42.00	0.05-0.19	0.0-2.9	0.1-1.0	.32	.32			
CwC, CwD, CwE:												
Cowee, stony---------	0-3	12-25	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.10	.17	3	7	38
	3-27	18-35	1.30-1.60	4.00-14.00	0.13-0.19	0.0-2.9	0.2-1.0	.17	.20			
	27-34	10-27	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.1-1.0	.24	.32			
	34-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
CxF:												
Cowee, rocky---------	0-3	12-25	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.10	.17	3	7	38
	3-27	18-35	1.30-1.60	4.00-14.00	0.13-0.19	0.0-2.9	0.2-1.0	.17	.20			
	27-34	10-27	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.1-1.0	.24	.32			
	34-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
Saluda, rocky--------	0-4	5-20	1.20-1.50	14.00-42.00	0.08-0.17	0.0-2.9	1.0-8.0	.20	.28	2	7	38
	4-18	18-35	1.30-1.60	4.00-14.00	0.07-0.16	0.0-2.9	0.2-1.0	.28	.37			
	18-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
Evard, rocky---------	0-8	10-25	1.20-1.50	14.00-42.00	0.10-0.20	0.0-2.9	1.0-8.0	.05	.10	5	4	86
	8-35	18-35	1.30-1.50	4.00-14.00	0.14-0.17	0.0-2.9	0.2-1.0	.24	.28			
	35-80	5-22	1.30-1.60	4.00-42.00	0.08-0.17	0.0-2.9	0.1-1.0	.17	.24			

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					
DAM:												
Dam	---	---	---	---	---	---	---	---	---	--	---	---
DeF:												
Devotion, very rocky	0-7	5-20	1.35-1.60	14.00-42.00	0.08-0.17	0.0-2.9	1.0-8.0	.10	.17	3	4	86
	7-20	5-22	1.35-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.2-1.0	.20	.32			
	20-24	5-22	1.35-1.65	14.00-42.00	0.06-0.17	0.0-2.9	0.1-1.0	.20	.37			
	24-45	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	45-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Rhodhiss, very rocky	0-4	10-25	1.20-1.50	14.00-42.00	0.08-0.17	0.0-2.9	1.0-8.0	.10	.15	5	4	86
	4-36	18-35	1.30-1.60	4.00-14.00	0.12-0.17	0.0-2.9	0.2-1.0	.28	.32			
	36-43	5-27	1.40-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.1-1.0	.28	.32			
	43-80	5-25	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.1-1.0	.24	.24			
Bannertown, very rocky	0-4	5-20	1.35-1.60	14.00-42.00	0.11-0.17	0.0-2.9	1.0-8.0	.10	.15	2	4	86
	4-19	5-20	1.35-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.2-1.0	.20	.32			
	19-27	5-20	1.35-1.65	14.00-42.00	0.07-0.16	0.0-2.9	0.1-1.0	.20	.37			
	27-30	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	30-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
DrB:												
Dillard	0-10	10-25	1.20-1.60	4.00-14.00	0.12-0.18	0.0-2.9	1.0-8.0	.17	.17	5	3	86
	10-30	18-35	1.35-1.60	4.00-14.00	0.15-0.18	0.0-2.9	0.2-1.0	.20	.20			
	30-48	25-55	1.30-1.60	1.40-4.00	0.08-0.16	3.0-5.9	0.1-1.0	.24	.24			
	48-80	6-45	1.30-1.70	1.40-141.00	0.02-0.20	0.0-2.9	0.1-1.0	.28	.28			
EcC, EcD, EcE:												
Evard, stony	0-8	10-25	1.20-1.50	14.00-42.00	0.10-0.20	0.0-2.9	1.0-8.0	.05	.10	5	4	86
	8-35	18-35	1.30-1.50	4.00-14.00	0.14-0.17	0.0-2.9	0.2-1.0	.24	.28			
	35-80	5-22	1.30-1.60	4.00-42.00	0.08-0.17	0.0-2.9	0.1-1.0	.17	.24			
Cowee, stony	0-3	12-25	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.10	.17	3	7	38
	3-27	18-35	1.30-1.60	4.00-14.00	0.13-0.19	0.0-2.9	0.2-1.0	.17	.20			
	27-34	10-27	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.1-1.0	.24	.32			
	34-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
FeB2, FeC2, FeD2:												
Fairview, moderately eroded	0-9	12-34	1.20-1.60	4.00-14.00	0.16-0.17	0.0-2.9	1.0-2.0	.20	.20	5	5	56
	9-24	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	24-29	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	29-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			

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					
FfD:												
Fairview, stony------	0-9	12-34	1.20-1.60	4.00-14.00	0.16-0.17	0.0-2.9	1.0-8.0	.10	.17	5	4	86
	9-24	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	24-29	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	29-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			
FnB2, FnC2:												
Fairview, moderately eroded--------------	0-9	12-34	1.20-1.60	4.00-14.00	0.16-0.17	0.0-2.9	1.0-2.0	.10	.17	5	6	48
	9-24	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	24-29	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	29-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			
FrC2, FrD2:												
Fairview, moderately eroded--------------	0-9	12-34	1.20-1.60	4.00-14.00	0.16-0.17	0.0-2.9	1.0-2.0	.20	.20	5	5	56
	9-24	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	24-29	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	29-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			
Siloam, moderately eroded--------------	0-8	12-25	1.30-1.60	14.00-42.00	0.10-0.17	0.0-2.9	1.0-8.0	.20	.28	2	3	86
	8-15	20-45	1.35-1.60	1.40-4.00	0.06-0.17	3.0-5.9	0.1-1.0	.24	.32			
	15-26	---	---	0.00-0.06	0.00-0.01	---	---	---	---			
	26-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
FsE:												
Fairview-------------	0-9	8-24	1.30-1.50	14.00-42.00	0.11-0.20	0.0-2.9	1.0-8.0	.17	.20	5	3	86
	9-24	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	24-29	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	29-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			
Stott Knob-----------	0-3	10-20	1.25-1.60	14.00-42.00	0.10-0.21	0.0-2.9	1.0-8.0	.15	.17	3	3	86
	3-7	10-20	1.25-1.60	14.00-42.00	0.10-0.21	0.0-2.9	0.5-1.5	.20	.20			
	7-24	18-35	1.30-1.60	4.00-14.00	0.15-0.18	0.0-2.9	0.2-1.0	.17	.20			
	24-30	10-23	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.1-1.0	.28	.37			
	30-47	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	47-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
FtE:												
Fairview, stony------	0-9	12-34	1.20-1.60	4.00-14.00	0.16-0.17	0.0-2.9	1.0-8.0	.10	.17	5	4	86
	9-24	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	24-29	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	29-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			

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					
Stott Knob, stony----	0-3	10-20	1.25-1.60	14.00-42.00	0.10-0.21	0.0-2.9	0.5-1.5	.15	.20	3	4	86
	3-7	10-20	1.25-1.60	14.00-42.00	0.10-0.21	0.0-2.9	1.0-8.0	.10	.17			
	7-24	18-35	1.30-1.60	4.00-14.00	0.15-0.18	0.0-2.9	0.2-1.0	.17	.20			
	24-30	10-23	1.30-1.60	4.00-42.00	0.10-0.18	0.0-2.9	0.1-1.0	.28	.37			
	30-47	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	47-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
FuB2, FuC2:												
Fairview, moderately eroded--------------	0-9	12-34	1.20-1.60	4.00-14.00	0.16-0.17	0.0-2.9	1.0-2.0	.20	.20	5	5	56
	9-24	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	24-29	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	29-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			
Urban land-----------	---	---	---	---	---	---	---	---	---	--	---	---
GrE:												
Greenlee, rubbly-----	0-12	5-20	1.30-1.60	14.00-42.00	0.04-0.09	0.0-2.9	1.0-8.0	.02	.24	3	8	0
	12-80	8-22	1.40-1.60	14.00-42.00	0.04-0.10	0.0-2.9	0.1-1.0	.05	.28			
HaA:												
Hatboro, drained-----	0-8	10-25	1.20-1.50	4.00-14.00	0.13-0.22	0.0-2.9	2.0-8.0	.28	.28	5	6	48
	8-35	18-35	1.30-1.55	4.00-14.00	0.15-0.21	0.0-2.9	1.0-3.0	.24	.24			
	35-41	10-35	1.20-1.50	4.00-14.00	0.13-0.23	0.0-2.9	2.0-4.0	.28	.28			
	41-80	5-45	1.30-1.70	14.00-141.00	0.02-0.14	0.0-2.9	0.1-1.0	.05	.17			
Hatboro, undrained---	0-8	10-25	1.20-1.50	4.00-14.00	0.13-0.22	0.0-2.9	2.0-8.0	.28	.28	5	6	48
	8-35	18-35	1.30-1.55	4.00-14.00	0.15-0.21	0.0-2.9	1.0-3.0	.24	.24			
	35-41	10-35	1.20-1.50	4.00-14.00	0.13-0.23	0.0-2.9	2.0-4.0	.28	.28			
	41-80	5-45	1.30-1.70	14.00-141.00	0.02-0.14	0.0-2.9	0.1-1.0	.05	.17			
MsC, MsD, MsE:												
Meadowfield, very stony---------------	0-4	7-20	1.30-1.60	14.00-42.00	0.05-0.14	0.0-2.9	1.0-8.0	.10	.32	2	7	38
	4-22	18-35	1.30-1.60	4.00-14.00	0.04-0.12	0.0-2.9	0.2-1.0	.10	.32			
	22-28	15-35	1.20-1.60	4.00-42.00	0.04-0.13	0.0-2.9	0.1-1.0	.10	.43			
	28-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Stott Knob, very stony---------------	0-4	10-22	1.25-1.60	14.00-42.00	0.10-0.21	0.0-2.9	1.0-8.0	.15	.28	3	6	48
	4-34	18-35	1.30-1.60	4.00-14.00	0.11-0.18	0.0-2.9	0.1-1.0	.20	.37			
	34-49	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	49-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			

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					
Pt:												
Pits, quarry---------	0-80	---	---	0.00-0.07	0.00-0.01	---	---	---	---	--	8	0
RbD:												
Rhodhiss, very rocky-	0-10	5-20	1.30-1.60	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.10	.15	5	3	86
	10-27	18-35	1.40-1.60	4.00-14.00	0.14-0.17	0.0-2.9	0.2-1.0	.17	.20			
	27-80	2-27	1.30-1.60	14.00-42.00	0.08-0.17	0.0-2.9	0.1-1.0	.20	.24			
Bannertown, very rocky---------------	0-4	5-20	1.35-1.60	14.00-42.00	0.09-0.20	0.0-2.9	1.0-8.0	.10	.15	2	4	86
	4-19	5-20	1.35-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.2-1.0	.20	.32			
	19-27	5-20	1.35-1.65	14.00-42.00	0.07-0.16	0.0-2.9	0.1-1.0	.24	.37			
	27-30	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	30-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
RrE:												
Rhodhiss, very bouldery------------	0-10	5-20	1.30-1.60	14.00-42.00	0.10-0.18	0.0-2.9	1.0-8.0	.10	.15	5	3	86
	10-27	18-35	1.40-1.60	4.00-14.00	0.14-0.17	0.0-2.9	0.2-1.0	.17	.20			
	27-80	2-27	1.30-1.60	14.00-42.00	0.08-0.17	0.0-2.9	0.1-1.0	.20	.24			
Bannertown, very bouldery------------	0-4	5-20	1.35-1.60	14.00-42.00	0.09-0.20	0.0-2.9	1.0-8.0	.10	.15	2	4	86
	4-19	5-20	1.35-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.2-1.0	.20	.32			
	19-27	5-20	1.35-1.65	14.00-42.00	0.07-0.16	0.0-2.9	0.1-1.0	.24	.37			
	27-30	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	30-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Rock outcrop---------	0-80	---	---	0.00-0.07	0.00-0.01	---	---	---	---	--	8	0
RsB, RsC, RsD, RsE:												
Rhodhiss, stony------	0-4	10-25	1.20-1.50	14.00-42.00	0.08-0.17	0.0-2.9	1.0-8.0	.15	.15	5	4	86
	4-36	18-35	1.30-1.60	4.00-14.00	0.12-0.17	0.0-2.9	0.2-1.0	.28	.32			
	36-43	5-27	1.40-1.60	4.00-14.00	0.10-0.19	0.0-2.9	0.1-1.0	.28	.32			
	43-80	5-25	1.40-1.60	14.00-42.00	0.07-0.19	0.0-2.9	0.1-1.0	.24	.24			
Stott Knob, stony----	0-4	10-22	1.25-1.60	14.00-42.00	0.10-0.21	0.0-2.9	1.0-8.0	.15	.32	3	6	48
	4-34	18-35	1.30-1.60	4.00-14.00	0.11-0.18	0.0-2.9	0.1-1.0	.20	.37			
	34-49	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	49-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			

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			Wind erodibility group	Wind erodibility index
								Kw	Kf	T		
	In	Pct	g/cc	um/sec	In/in	Pct	Pct					
SrC, SrE:												
Siloam----------------	0-8	12-20	1.30-1.60	14.00-42.00	0.10-0.17	0.0-2.9	1.0-8.0	.20	.28	2	3	86
	8-15	20-45	1.35-1.60	1.40-4.00	0.06-0.17	3.0-5.9	0.1-1.0	.24	.32			
	15-26	---	---	0.00-0.06	0.00-0.01	---	---	---	---			
	26-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Redbrush--------------	0-8	10-25	1.25-1.60	4.00-14.00	0.06-0.16	0.0-2.9	1.0-8.0	.24	.43	2	6	48
	8-18	35-60	1.25-1.50	0.41-4.00	0.06-0.14	6.0-8.9	0.2-1.0	.20	.24			
	18-25	15-40	1.30-1.60	0.41-14.00	0.11-0.16	0.0-2.9	0.1-1.0	.32	.37			
	25-37	---	---	0.00-0.06	0.00-0.01	---	---	---	---			
	37-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
StC, StD, StE:												
Stott Knob, stony----	0-4	10-22	1.25-1.60	14.00-42.00	0.10-0.21	0.0-2.9	1.0-8.0	.15	.28	3	6	48
	4-34	18-35	1.30-1.60	4.00-14.00	0.11-0.18	0.0-2.9	0.1-1.0	.20	.37			
	34-49	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	49-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
TaD:												
Tate, extremely stony	0-5	5-25	1.35-1.60	14.00-42.00	0.05-0.14	0.0-2.9	1.0-8.0	.02	.17	5	8	0
	5-47	18-35	1.30-1.55	4.00-14.00	0.13-0.18	0.0-2.9	0.2-1.0	.15	.17			
	47-80	5-28	1.35-1.60	4.00-42.00	0.06-0.18	0.0-2.9	0.1-1.0	.05	.20			
TcC:												
Tate------------------	0-5	5-25	1.35-1.60	14.00-42.00	0.11-0.21	0.0-2.9	1.0-8.0	.15	.17	5	3	86
	5-47	18-35	1.30-1.55	4.00-14.00	0.13-0.18	0.0-2.9	0.2-1.0	.15	.17			
	47-80	5-28	1.35-1.60	4.00-42.00	0.06-0.18	0.0-2.9	0.1-1.0	.05	.20			
Colvard---------------	0-10	4-20	1.45-1.65	14.00-42.00	0.11-0.17	0.0-2.9	1.0-8.0	.28	.28	5	3	86
	10-50	4-20	1.45-1.65	14.00-42.00	0.11-0.15	0.0-2.9	0.5-1.0	.37	.37			
	50-80	0-20	1.50-1.75	14.00-141.00	0.02-0.12	0.0-2.9	0.1-1.0	.20	.32			
ToB:												
Toast, rocky----------	0-8	5-24	1.25-1.60	14.00-42.00	0.11-0.17	0.0-2.9	1.0-8.0	.10	.10	5	3	86
	8-23	35-60	1.30-1.55	4.00-14.00	0.08-0.13	0.0-2.9	0.2-1.0	.15	.17			
	23-29	25-42	1.30-1.50	4.00-14.00	0.08-0.16	0.0-2.9	0.1-1.0	.15	.15			
	29-80	5-24	1.30-1.50	4.00-42.00	0.08-0.15	0.0-2.9	0.1-1.0	.17	.17			
TtC:												
Toast, very rocky----	0-8	5-24	1.25-1.60	14.00-42.00	0.11-0.17	0.0-2.9	1.0-8.0	.10	.10	5	3	86
	8-23	35-60	1.30-1.55	4.00-14.00	0.08-0.13	0.0-2.9	0.2-1.0	.15	.17			
	23-29	25-42	1.30-1.50	4.00-14.00	0.08-0.16	0.0-2.9	0.1-1.0	.15	.15			
	29-80	5-24	1.30-1.50	4.00-42.00	0.08-0.15	0.0-2.9	0.1-1.0	.17	.17			

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					
Bannertown, very rocky	0-4	5-20	1.35-1.60	14.00-42.00	0.09-0.20	0.0-2.9	1.0-8.0	.10	.15	2	4	86
	4-19	5-20	1.35-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.2-1.0	.20	.32			
	19-27	5-20	1.35-1.65	14.00-42.00	0.07-0.16	0.0-2.9	0.1-1.0	.24	.37			
	27-30	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	30-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
TuB:												
Toast, rocky	0-8	5-24	1.25-1.60	14.00-42.00	0.11-0.17	0.0-2.9	1.0-8.0	.10	.10	5	3	86
	8-23	35-60	1.30-1.55	4.00-14.00	0.08-0.13	0.0-2.9	0.2-1.0	.15	.17			
	23-29	25-42	1.30-1.50	4.00-14.00	0.08-0.16	0.0-2.9	0.1-1.0	.15	.15			
	29-80	5-24	1.30-1.50	4.00-42.00	0.08-0.15	0.0-2.9	0.1-1.0	.17	.17			
Urban land	---	---	---	---	---	---	---	---	---	--	---	---
TwC:												
Toast, very rocky	0-8	5-24	1.25-1.60	14.00-42.00	0.11-0.17	0.0-2.9	1.0-8.0	.10	.10	5	3	86
	8-23	35-60	1.30-1.55	4.00-14.00	0.08-0.13	0.0-2.9	0.2-1.0	.15	.17			
	23-29	25-42	1.30-1.50	4.00-14.00	0.08-0.16	0.0-2.9	0.1-1.0	.15	.15			
	29-80	5-24	1.30-1.50	4.00-42.00	0.08-0.15	0.0-2.9	0.1-1.0	.17	.17			
Urban land	---	---	---	---	---	---	---	---	---	--	---	---
Bannertown, very rocky	0-4	5-20	1.35-1.60	14.00-42.00	0.09-0.20	0.0-2.9	1.0-8.0	.10	.15	2	4	86
	4-19	5-20	1.35-1.60	14.00-42.00	0.10-0.17	0.0-2.9	0.2-1.0	.20	.32			
	19-27	5-20	1.35-1.65	14.00-42.00	0.07-0.16	0.0-2.9	0.1-1.0	.24	.37			
	27-30	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
	30-80	---	---	0.00-0.01	0.00-0.01	---	---	---	---			
Ud:												
Udorthents, loamy	0-80	5-60	1.30-1.65	4.00-42.00	0.05-0.15	0.0-5.9	0.0-8.0	.15	.15	2	5	56
Ur:												
Urban land	---	---	---	---	---	---	---	---	---	--	---	---
WfB2, WfC2:												
Woolwine, moderately eroded	0-8	12-34	1.30-1.50	4.00-14.00	0.11-0.17	0.0-2.9	1.0-2.0	.10	.17	3	6	48
	8-30	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.1-1.0	.15	.20			
	30-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			

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					
Fairview, moderately eroded---------------	0-9	12-34	1.30-1.50	4.00-14.00	0.11-0.17	0.0-2.9	1.0-2.0	.10	.17	5	6	48
	9-24	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	24-29	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	29-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			
Westfield, moderately eroded---------------	0-9	12-34	1.30-1.50	4.00-14.00	0.11-0.17	0.0-2.9	1.0-2.0	.10	.17	4	6	48
	9-28	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.15	.20			
	28-35	15-34	1.30-1.50	4.00-14.00	0.08-0.21	0.0-2.9	0.1-0.5	.15	.20			
	35-48	12-34	1.35-1.60	4.00-42.00	0.10-0.16	0.0-2.9	0.1-0.5	.20	.32			
	48-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
WoD, WoE: Woolwine, stony------	0-4	12-32	1.35-1.60	4.00-14.00	0.11-0.21	0.0-2.9	1.0-8.0	.20	.28	3	6	48
	4-30	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.1-1.0	.15	.20			
	30-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			
Fairview, stony------	0-5	12-34	1.20-1.60	4.00-14.00	0.16-0.17	0.0-2.9	1.0-8.0	.10	.17	5	4	86
	5-20	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.20	.20			
	20-25	15-35	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-0.5	.24	.24			
	25-80	10-34	1.30-1.60	4.00-42.00	0.12-0.17	0.0-2.9	0.1-0.5	.32	.32			
Westfield, stony-----	0-7	12-34	1.20-1.60	4.00-14.00	0.16-0.17	0.0-2.9	1.0-8.0	.10	.17	4	4	86
	7-35	35-60	1.30-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.2-1.0	.15	.20			
	35-48	12-34	1.35-1.60	4.00-42.00	0.10-0.16	0.0-2.9	0.1-0.5	.20	.32			
	48-80	---	---	0.01-0.06	0.00-0.01	---	---	---	---			

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
ArA:				
Arkaqua, undrained---	0-10	7.0-16	5.2-12	4.5-6.5
	10-45	6.0-13	4.5-9.8	4.5-6.5
	45-80	1.2-12	0.9-9.3	4.5-6.5
BaC:				
Bandana--------------	0-4	3.5-16	2.6-12	5.1-6.5
	4-26	1.2-7.2	0.9-5.4	5.1-6.5
	26-30	0.5-7.2	0.4-5.4	5.1-6.5
	30-80	0.2-5.8	0.2-4.3	5.1-6.5
Tate-----------------	0-5	3.5-13	2.6-9.8	4.5-6.5
	5-47	1.2-11	0.9-8.2	4.5-6.5
	47-80	1.2-9.9	0.9-7.4	4.5-6.5
Nikwasi, undrained---	0-31	12-32	9.4-24	4.5-6.0
	31-80	0.2-3.5	0.2-2.6	4.5-6.0
BbB, BbC, BbD:				
Braddock-------------	0-9	4.8-24	3.6-18	3.5-5.5
	9-56	8.8-17	6.6-13	3.5-5.5
	56-80	4.5-11	3.4-8.3	3.5-5.5
BcB:				
Braddock-------------	0-9	4.8-24	3.6-18	3.5-5.5
	9-56	8.8-17	6.6-13	3.5-5.5
	56-80	4.5-11	3.4-8.3	3.5-5.5
BdC, BdD:				
Braddock, stony------	0-9	4.8-24	3.6-18	3.5-5.5
	9-56	8.8-17	6.6-13	3.5-5.5
	56-80	4.5-11	3.4-8.3	3.5-5.5
BpC, BpD:				
Braddock, rubbly-----	0-7	3.5-23	2.6-17	3.5-5.5
	7-13	3.8-9.9	2.8-7.4	3.5-5.5
	13-63	8.8-17	6.6-13	3.5-5.5
	63-80	4.5-11	3.4-8.3	3.5-5.5
Pilot Mountain, rubbly--------------	0-2	---	150-175	3.5-5.5
	2-12	4.0-16	3.0-12	3.5-5.5
	12-22	3.6-14	2.7-10	3.5-5.5
	22-30	3.6-14	2.7-10	3.5-5.5
	30-80	2.5-11	1.9-8.3	3.5-5.5
BrD, BrE:				
Brevard, very bouldery------------	0-8	3.5-12	2.6-8.8	4.5-6.0
	8-48	5.0-9.9	3.8-7.4	4.5-6.0
	48-80	2.0-7.4	1.5-5.5	4.5-6.0
Greenlee, very bouldery------------	0-12	5.8-16	4.3-12	3.5-6.0
	12-80	1.2-7.9	0.9-5.9	3.5-6.0

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
CeD, CeE:				
Chestnut, very rocky-	0-3	3.5-23	2.6-17	3.5-6.0
	3-21	1.2-11	0.9-8.1	3.5-6.0
	21-29	1.2-11	0.9-8.1	3.5-6.0
	29-45	---	---	---
	45-80	---	---	---
Peaks, very rocky----	0-4	3.2-13	2.4-9.8	4.5-6.0
	4-19	1.2-5.6	0.9-4.2	4.5-6.0
	19-27	1.2-5.6	0.9-4.2	4.5-6.0
	27-80	---	---	---
CfF:				
Chestnut, very rocky-	0-3	3.5-23	2.6-17	3.5-6.0
	3-21	1.2-11	0.9-8.1	3.5-6.0
	21-29	1.2-11	0.9-8.1	3.5-6.0
	29-45	---	---	---
	45-80	---	---	---
Peaks, very rocky----	0-4	3.2-13	2.4-9.8	4.5-6.0
	4-19	1.2-5.6	0.9-4.2	4.5-6.0
	19-27	1.2-5.6	0.9-4.2	4.5-6.0
	27-80	---	---	---
Tuckasegee, very rocky---------------	0-13	8.0-23	6.0-17	4.5-6.5
	13-47	2.9-11	2.2-8.4	4.5-6.0
	47-80	1.2-7.2	0.9-5.4	4.5-6.0
ChE:				
Cleveland, windswept-	0-4	2.6-23	2.0-17	3.5-6.0
	4-15	2.6-23	2.0-17	3.5-6.0
	15-80	---	---	---
Rock outcrop---------	0-80	---	---	---
Peaks, windswept-----	0-4	3.2-13	2.4-9.8	4.5-6.0
	4-19	1.2-5.6	0.9-4.2	4.5-6.0
	19-27	1.2-5.6	0.9-4.2	4.5-6.0
	27-80	---	---	---
CkF:				
Cleveland, windswept-	0-4	2.6-23	2.0-17	3.5-6.0
	4-15	2.6-23	2.0-17	3.5-6.0
	15-80	---	---	---
Rock outcrop---------	0-80	---	---	---
Peaks, windswept-----	0-4	3.2-13	2.4-9.8	4.5-6.0
	4-19	1.2-5.6	0.9-4.2	4.5-6.0
	19-27	1.2-5.6	0.9-4.2	4.5-6.0
	27-80	---	---	---
CmD:				
Cliffield, very stony	0-3	4.0-16	3.0-12	3.5-5.5
	3-23	2.5-9.9	1.9-7.4	3.5-5.5
	23-80	---	---	---

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
Cowee, very stony----	0-3	4.2-16	3.2-12	3.5-6.0
	3-27	5.6-11	4.2-8.2	4.5-5.5
	27-34	5.6-9.0	4.2-6.8	4.5-5.5
	34-80	---	---	---
CnE:				
Cliffield, very rocky	0-3	4.0-16	3.0-12	3.5-5.5
	3-23	2.5-9.9	1.9-7.4	3.5-5.5
	23-80	---	---	---
Cowee, very rocky----	0-3	4.2-16	3.2-12	3.5-6.0
	3-27	5.6-11	4.2-8.2	4.5-5.5
	27-34	5.6-9.0	4.2-6.8	4.5-5.5
	34-80	---	---	---
CoD, CoE:				
Cliffield, rubbly----	0-7	4.0-16	3.0-12	3.5-5.5
	7-27	2.5-9.9	1.9-7.4	3.5-5.5
	27-80	---	---	---
Sauratown, rubbly----	0-9	3.5-12	2.6-8.8	3.5-6.0
	9-26	4.5-9.9	3.4-7.4	3.5-6.0
	26-29	---	---	---
	29-80	---	---	---
CrB2:				
Clifford, moderately eroded--------------	0-6	4.0-8.0	3.0-6.0	4.5-6.0
	6-52	4.1-8.8	3.0-6.6	4.5-6.0
	52-80	2.0-5.0	1.5-3.8	4.5-6.0
CsA:				
Colvard--------------	0-10	6.0-11	4.5-8.1	5.1-7.8
	10-50	4.9-8.5	3.7-6.4	5.1-7.8
	50-80	1.2-9.9	0.9-7.4	5.1-7.8
Suches---------------	0-12	7.0-15	5.2-11	4.5-6.0
	12-54	5.6-14	4.2-10	4.5-6.0
	54-80	1.9-11	1.4-8.2	4.5-6.0
CwC, CwD, CwE:				
Cowee, stony---------	0-3	4.2-16	3.2-12	3.5-6.0
	3-27	5.6-11	4.2-8.2	4.5-5.5
	27-34	5.6-9.0	4.2-6.8	4.5-5.5
	34-80	---	---	---
CxF:				
Cowee, rocky---------	0-3	4.2-16	3.2-12	3.5-6.0
	3-27	5.6-11	4.2-8.2	4.5-5.5
	27-34	5.6-9.0	4.2-6.8	4.5-5.5
	34-80	---	---	---
Saluda, rocky--------	0-4	2.4-9.5	1.8-7.1	4.5-6.5
	4-18	4.5-9.9	3.4-7.4	4.5-6.5
	18-80	---	---	---
Evard, rocky---------	0-8	3.5-16	5.0-12	3.5-6.0
	8-35	4.5-9.9	3.4-7.4	4.5-5.5
	35-80	1.2-6.1	0.9-4.6	4.5-5.5

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
DAM:				
Dam------------------	---	---	---	---
DeF:				
Devotion, very rocky-	0-7	3.5-23	2.6-17	3.5-6.0
	7-20	1.8-7.8	1.4-5.8	3.5-6.0
	20-24	1.5-7.8	1.1-5.8	3.5-6.0
	24-45	---	---	---
	45-80	---	---	---
Rhodhiss, very rocky-	0-4	2.4-9.5	1.8-7.1	4.5-6.5
	4-36	4.5-9.9	3.4-7.4	4.5-6.5
	36-43	1.2-7.9	0.9-5.9	4.5-6.5
	43-80	0.5-7.9	0.4-5.9	4.5-6.5
Bannertown, very rocky---------------	0-4	4.0-16	3.0-12	3.5-6.0
	4-19	1.8-7.2	1.3-5.4	3.5-6.0
	19-27	1.2-6.0	0.9-4.5	3.5-6.0
	27-30	---	---	---
	30-80	---	---	---
DrB:				
Dillard--------------	0-10	3.6-16	2.7-12	5.1-6.0
	10-30	5.6-11	4.2-8.2	4.5-6.0
	30-48	5.0-14	3.8-10	4.5-6.0
	48-80	1.2-12	0.9-9.3	4.5-6.0
EcC, EcD, EcE:				
Evard, stony---------	0-8	3.5-16	5.0-12	3.5-6.0
	8-35	4.5-9.9	3.4-7.4	4.5-5.5
	35-80	1.2-6.1	0.9-4.6	4.5-5.5
Cowee, stony---------	0-3	4.2-16	3.2-12	3.5-6.0
	3-27	5.6-11	4.2-8.2	4.5-5.5
	27-34	5.6-9.0	4.2-6.8	4.5-5.5
	34-80	---	---	---
FeB2, FeC2, FeD2:				
Fairview, moderately eroded--------------	0-9	3.5-7.9	2.6-5.9	3.5-6.0
	9-24	4.1-8.2	3.0-6.2	3.5-6.0
	24-29	2.1-4.6	1.5-3.5	3.5-6.0
	29-80	1.2-4.5	0.9-3.4	3.5-6.0
FfD:				
Fairview, stony------	0-9	3.5-21	2.6-16	3.5-6.0
	9-24	4.1-8.2	3.0-6.2	3.5-6.0
	24-29	2.1-4.6	1.5-3.5	3.5-6.0
	29-80	1.2-4.5	0.9-3.4	3.5-6.0
FnB2, FnC2:				
Fairview, moderately eroded--------------	0-9	3.5-7.9	2.6-5.9	3.5-6.0
	9-24	4.1-8.2	3.0-6.2	3.5-6.0
	24-29	2.1-4.6	1.5-3.5	3.5-6.0
	29-80	1.2-4.5	0.9-3.4	3.5-6.0

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
FrC2, FrD2:				
Fairview, moderately eroded	0-9	3.5-7.9	2.6-5.9	3.5-6.0
	9-24	4.1-8.2	3.0-6.2	3.5-6.0
	24-29	2.1-4.6	1.5-3.5	3.5-6.0
	29-80	1.2-4.5	0.9-3.4	3.5-6.0
Siloam, moderately eroded	0-8	2.9-12	2.2-8.6	5.1-6.5
	8-15	7.0-17	5.2-13	5.6-7.8
	15-26	---	---	---
	26-80	---	---	---
FsE:				
Fairview	0-9	3.0-20	2.3-15	3.5-6.0
	9-24	4.1-8.2	3.0-6.2	3.5-6.0
	24-29	2.1-4.6	1.5-3.5	3.5-6.0
	29-80	1.2-4.5	0.9-3.4	3.5-6.0
Stott Knob	0-3	3.2-20	2.4-15	3.5-6.0
	3-7	2.1-5.4	1.6-4.0	3.5-6.0
	7-24	2.4-5.8	1.8-4.3	3.5-6.0
	24-30	1.2-4.5	0.9-3.4	3.5-6.0
	30-47	---	---	---
	47-80	---	---	---
FtE:				
Fairview, stony	0-9	3.5-21	2.6-16	3.5-6.0
	9-24	4.1-8.2	3.0-6.2	3.5-6.0
	24-29	2.1-4.6	1.5-3.5	3.5-6.0
	29-80	1.2-4.5	0.9-3.4	3.5-6.0
Stott Knob, stony	0-3	3.2-20	2.4-15	3.5-6.0
	3-7	2.1-5.4	1.6-4.0	3.5-6.0
	7-24	2.4-5.8	1.8-4.3	3.5-6.0
	24-30	1.2-4.5	0.9-3.4	3.5-6.0
	30-47	---	---	---
	47-80	---	---	---
FuB2, FuC2:				
Fairview, moderately eroded	0-9	3.5-7.9	2.6-5.9	3.5-6.0
	9-24	4.1-8.2	3.0-6.2	3.5-6.0
	24-29	2.1-4.6	1.5-3.5	3.5-6.0
	29-80	1.2-4.5	0.9-3.4	3.5-6.0
Urban land	---	---	---	---
GrE:				
Greenlee, rubbly	0-12	5.8-16	4.3-12	3.5-6.0
	12-80	1.2-7.9	0.9-5.9	3.5-6.0
HaA:				
Hatboro, drained	0-8	7.0-14	5.2-10	4.5-7.3
	8-35	5.0-9.9	3.8-7.4	4.5-7.3
	35-41	2.5-7.9	1.9-5.9	5.6-6.5
	41-80	1.2-12	0.9-9.3	5.6-6.5

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
Hatboro, undrained---	0-8	7.0-14	5.2-10	4.5-7.3
	8-35	5.0-9.9	3.8-7.4	4.5-7.3
	35-41	2.5-7.9	1.9-5.9	5.6-6.5
	41-80	1.2-12	0.9-9.3	5.6-6.5
MsC, MsD, MsE:				
Meadowfield, very stony---------------	0-4	4.0-16	3.0-12	3.5-6.0
	4-22	6.8-20	5.1-15	3.5-6.0
	22-28	2.5-9.9	1.9-7.4	3.5-6.0
	28-80	---	---	---
Stott Knob, very stony---------------	0-4	3.2-20	2.4-15	3.5-6.0
	4-34	2.0-5.8	1.5-4.3	3.5-6.0
	34-49	---	---	---
	49-80	---	---	---
Pt:				
Pits, quarry---------	0-80	---	---	---
RbD:				
Rhodhiss, very rocky-	0-10	2.4-9.5	1.8-7.1	4.5-6.5
	10-27	4.5-9.9	3.4-7.4	4.5-6.5
	27-80	0.5-7.9	0.4-5.9	4.5-6.5
Bannertown, very rocky---------------	0-4	4.0-16	3.0-12	3.5-6.0
	4-19	1.8-7.2	1.3-5.4	3.5-6.0
	19-27	1.2-6.0	0.9-4.5	3.5-6.0
	27-30	---	---	---
	30-80	---	---	---
RrE:				
Rhodhiss, very bouldery------------	0-10	2.4-9.5	1.8-7.1	4.5-6.5
	10-27	4.5-9.9	3.4-7.4	4.5-6.5
	27-80	0.5-7.9	0.4-5.9	4.5-6.5
Bannertown, very bouldery------------	0-4	4.0-16	3.0-12	3.5-6.0
	4-19	1.8-7.2	1.3-5.4	3.5-6.0
	19-27	1.2-6.0	0.9-4.5	3.5-6.0
	27-30	---	---	---
	30-80	---	---	---
Rock outcrop---------	0-80	---	---	---
RsB, RsC, RsD, RsE:				
Rhodhiss, stony------	0-4	2.4-9.5	1.8-7.1	4.5-6.5
	4-36	4.5-9.9	3.4-7.4	4.5-6.5
	36-43	1.2-7.9	0.9-5.9	4.5-6.5
	43-80	0.5-7.9	0.4-5.9	4.5-6.5
Stott Knob, stony----	0-4	3.2-20	2.4-15	3.5-6.0
	4-34	2.0-5.8	1.5-4.3	3.5-6.0
	34-49	---	---	---
	49-80	---	---	---

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
SrC, SrE:				
Siloam---------------	0-8	2.9-12	2.2-8.6	5.1-6.5
	8-15	7.0-17	5.2-13	5.6-7.8
	15-26	---	---	---
	26-80	---	---	---
Redbrush-------------	0-8	3.6-14	2.7-10	5.1-6.5
	8-18	12-22	9.2-17	5.6-7.8
	18-25	3.5-19	2.6-14	5.6-7.8
	25-37	---	---	---
	37-80	---	---	---
StC, StD, StE:				
Stott Knob, stony----	0-4	3.2-20	2.4-15	3.5-6.0
	4-34	2.0-5.8	1.5-4.3	3.5-6.0
	34-49	---	---	---
	49-80	---	---	---
TaD:				
Tate, extremely stony	0-5	3.5-13	2.6-9.8	4.5-6.5
	5-47	1.2-11	0.9-8.2	4.5-6.5
	47-80	1.2-9.9	0.9-7.4	4.5-6.5
TcC:				
Tate-----------------	0-5	3.5-13	2.6-9.8	4.5-6.5
	5-47	1.2-11	0.9-8.2	4.5-6.5
	47-80	1.2-9.9	0.9-7.4	4.5-6.5
Colvard--------------	0-10	6.0-11	4.5-8.1	5.1-7.8
	10-50	4.9-8.5	3.7-6.4	5.1-7.8
	50-80	1.2-9.9	0.9-7.4	5.1-7.8
ToB:				
Toast, rocky---------	0-8	2.8-20	2.1-15	3.5-5.5
	8-23	4.1-8.2	3.0-6.2	3.5-5.5
	23-29	2.7-6.5	2.0-4.8	3.5-5.5
	29-80	0.7-4.7	0.5-3.5	3.5-5.5
TtC:				
Toast, very rocky----	0-8	2.8-20	2.1-15	3.5-5.5
	8-23	4.1-8.2	3.0-6.2	3.5-5.5
	23-29	2.7-6.5	2.0-4.8	3.5-5.5
	29-80	0.7-4.7	0.5-3.5	3.5-5.5
Bannertown, very rocky---------------	0-4	4.0-16	3.0-12	3.5-6.0
	4-19	1.8-7.2	1.3-5.4	3.5-6.0
	19-27	1.2-6.0	0.9-4.5	3.5-6.0
	27-30	---	---	---
	30-80	---	---	---
TuB:				
Toast, rocky---------	0-8	2.8-20	2.1-15	3.5-5.5
	8-23	4.1-8.2	3.0-6.2	3.5-5.5
	23-29	2.7-6.5	2.0-4.8	3.5-5.5
	29-80	0.7-4.7	0.5-3.5	3.5-5.5
Urban land-----------	---	---	---	---

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
TwC:				
Toast, very rocky----	0-8	2.8-20	2.1-15	3.5-5.5
	8-23	4.1-8.2	3.0-6.2	3.5-5.5
	23-29	2.7-6.5	2.0-4.8	3.5-5.5
	29-80	0.7-4.7	0.5-3.5	3.5-5.5
Urban land-----------	---	---	---	---
Bannertown, very rocky---------------	0-4	4.0-16	3.0-12	3.5-6.0
	4-19	1.8-7.2	1.3-5.4	3.5-6.0
	19-27	1.2-6.0	0.9-4.5	3.5-6.0
	27-30	---	---	---
	30-80	---	---	---
Ud:				
Udorthents, loamy----	0-80	1.0-25	0.7-18	4.5-7.8
Ur:				
Urban land-----------	---	---	---	---
WfB2, WfC2:				
Woolwine, moderately eroded--------------	0-8	3.5-7.9	2.6-5.9	3.5-6.0
	8-30	3.7-8.2	2.8-6.2	3.5-6.0
	30-80	---	---	---
Fairview, moderately eroded--------------	0-9	3.5-7.9	2.6-5.9	3.5-6.0
	9-24	4.1-8.2	3.0-6.2	3.5-6.0
	24-29	2.1-4.6	1.5-3.5	3.5-6.0
	29-80	1.2-4.5	0.9-3.4	3.5-6.0
Westfield, moderately eroded--------------	0-9	3.5-7.9	2.6-5.9	3.5-6.0
	9-28	4.1-8.2	3.0-6.2	3.5-6.0
	28-35	1.7-4.5	1.3-3.4	3.5-6.0
	35-48	1.4-4.5	1.1-3.4	3.5-6.0
	48-80	---	---	---
WoD, WoE:				
Woolwine, stony------	0-4	3.5-21	2.6-16	3.5-6.0
	4-30	3.7-8.2	2.8-6.2	3.5-6.0
	30-80	---	---	---
Fairview, stony------	0-5	3.5-21	2.6-16	3.5-6.0
	5-20	4.1-8.2	3.0-6.2	3.5-6.0
	20-25	2.1-4.6	1.5-3.5	3.5-6.0
	25-80	1.2-4.5	0.9-3.4	3.5-6.0
Westfield, stony-----	0-7	3.5-21	2.6-16	3.5-6.0
	7-35	4.1-8.2	3.0-6.2	3.5-6.0
	35-48	1.4-4.5	1.1-3.4	3.5-6.0
	48-80	---	---	---

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: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
ArA:										
Arkaqua, undrained--------	C	Very high								
			Dec.-Apr.	1.0-2.0	>6.0	---	---	None	Very brief	Frequent
			May	1.5-2.0	>6.0	---	---	None	---	---
			June	1.5-3.0	>6.0	---	---	None	---	---
			July	2.0-4.0	>6.0	---	---	None	---	---
			October .	2.0-4.0	>6.0	---	---	None	---	---
			November	1.5-3.5	>6.0	---	---	None	---	---
BaC:										
Bandana-------------------	A	Very high								
			Dec.-Apr.	1.0-2.0	>6.0	---	---	None	Very brief	Frequent
			May	1.0-2.0	>6.0	---	---	None	---	---
			June	1.5-3.0	>6.0	---	---	None	---	---
			July	2.0-4.0	>6.0	---	---	None	---	---
			October	2.0-4.0	>6.0	---	---	None	---	---
			November	1.5-3.5	>6.0	---	---	None	---	---
Tate----------------------	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Nikwasi, undrained--------	B/D	Negligible								
			Dec.-Mar.	0.0-1.0	>6.0	0.0-0.5	Brief	Frequent	Very brief	Frequent
			Apr.-May	0.0-1.0	>6.0	---	---	None	---	---
			June	0.5-2.0	>6.0	---	---	None	---	---
			July	1.0-3.0	>6.0	---	---	None	---	---
			August	2.0-5.0	>6.0	---	---	None	---	---
			September	0.5-2.0	>6.0	---	---	None	---	---
			Oct.-Nov.	0.0-1.0	>6.0	---	---	None	---	---
BbB:										
Braddock------------------	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
BbC:										
Braddock------------------	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
BbD:										
Braddock	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
BcB:										
Braddock	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
BdC:										
Braddock, stony	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
BdD:										
Braddock, stony	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
BpC:										
Braddock, rubbly	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Pilot Mountain, rubbly	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
BpD:										
Braddock, rubbly	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Pilot Mountain, rubbly	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
BrD:										
Brevard, very bouldery	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Greenlee, very bouldery	A	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
BrE:										
Brevard, very bouldery	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Greenlee, very bouldery	A	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
CeD, CeE:										
Chestnut, very rocky	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Peaks, very rocky	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
CfF:										
Chestnut, very rocky	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Peaks, very rocky	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Tuckasegee, very rocky	A	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
ChE:										
Cleveland, windswept	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Peaks, windswept	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
CkF:										
Cleveland, windswept	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Rock outcrop	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Peaks, windswept	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
CmD:										
Cliffield, very stony	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Cowee, very stony	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
CnE:										
Cliffield, very rocky-----	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Cowee, very rocky---------	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
CoD, CoE:										
Cliffield, rubbly---------	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Sauratown, rubbly---------	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
CrB2:										
Clifford, moderately eroded-------------------	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
CsA:										
Colvard-------------------	A	Very low								
			Dec.-Apr.	4.0-6.6	>6.0	---	---	None	Very brief	Occasional
			May	4.5-6.6	>6.0	---	---	None	Very brief	Occasional
			June	6.0-6.6	>6.0	---	---	None	---	---
			November	6.0-6.6	>6.0	---	---	None	Very brief	Occasional
Suches--------------------	B	Low								
			Dec.-May	2.5-4.0	>6.0	---	---	None	Very brief	Occasional
			June	4.0-6.0	>6.0	---	---	None	---	---
			November	4.0-6.0	>6.0	---	---	None	Very brief	Occasional
CwC, CwD, CwE:										
Cowee, stony--------------	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
CxF:										
Cowee, rocky--------------	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Saluda, rocky-------------	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Evard, rocky--------------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
DAM:										
Dam----------------------	---	---								
			Jan.-Dec.	---	---	---	---	None	---	None
DeF:										
Devotion, very rocky------	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Rhodhiss, very rocky------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Bannertown, very rocky----	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
DrB:										
Dillard-------------------	C	Low								
			Dec.-Apr.	2.0-3.0	>6.0	---	---	None	---	Rare
			May	3.0-6.0	>6.0	---	---	None	---	Rare
			June	4.0-6.6	>6.0	---	---	None	---	Rare
			July-Sep.	---	---	---	---	None	---	Rare
			October	4.0-6.6	>6.0	---	---	None	---	Rare
			November	3.0-6.0	>6.0	---	---	None	---	Rare
EcC:										
Evard, stony--------------	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Cowee, stony--------------	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
EcD, EcE:										
Evard, stony--------------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Cowee, stony--------------	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
FeB2:										
Fairview, moderately eroded-------------------	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
FeC2:										
Fairview, moderately eroded-------------------	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
FeD2:										
Fairview, moderately eroded-------------------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
FfD:										
Fairview, stony-----------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
FnB2:										
Fairview, moderately eroded-------------------	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
FnC2:										
Fairview, moderately eroded-------------------	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
FrC2:										
Fairview, moderately eroded-------------------	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Siloam, moderately eroded-	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
FrD2:										
Fairview, moderately eroded-------------------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Siloam, moderately eroded-	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
FsE:										
Fairview------------------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
Stott Knob	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
FtE:										
Fairview, stony	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Stott Knob, stony	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
FuB2:										
Fairview, moderately eroded	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
Urban land	---	---								
			Jan.-Dec.	---	---	---	---	None	---	None
FuC2:										
Fairview, moderately eroded	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Urban land	---	---								
			Jan.-Dec.	---	---	---	---	None	---	None
GrE:										
Greenlee, rubbly	A	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
HaA:										
Hatboro, drained	B/D	Negligible								
			Dec.-Apr.	0.0-1.0	>6.0	0.0-0.5	Brief	Frequent	Very brief	Frequent
			May	0.0-1.0	>6.0	---	---	None	---	---
			June	0.5-2.0	>6.0	---	---	None	---	---
			July	1.0-3.0	>6.0	---	---	None	---	---
			August	2.0-5.0	>6.0	---	---	None	---	---
			September	0.5-2.0	>6.0	---	---	None	---	---
			Oct.-Nov.	0.0-1.0	>6.0	---	---	None	---	---

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				
Hatboro, undrained--------	B/D	Negligible								
			Dec.-Apr.	0.0-1.0	>6.0	0.0-0.5	Brief	Frequent	Very brief	Frequent
			May	0.0-1.0	>6.0	---	---	None	---	---
			June	0.5-2.0	>6.0	---	---	None	---	---
			July	1.0-3.0	>6.0	---	---	None	---	---
			August	2.0-5.0	>6.0	---	---	None	---	---
			September	0.5-2.0	>6.0	---	---	None	---	---
			Oct.-Nov.	0.0-1.0	>6.0	---	---	None	---	---
MsC, MsD, MsE:										
Meadowfield, very stony---	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Stott Knob, very stony----	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Pt:										
Pits, quarry--------------	---	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
RbD:										
Rhodhiss, very rocky------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Bannertown, very rocky----	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
RrE:										
Rhodhiss, very bouldery---	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Bannertown, very bouldery-	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Rock outcrop--------------	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
RsB:										
Rhodhiss, stony-----------	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
Stott Knob, stony---------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
RsC:										
Rhodhiss, stony	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Stott Knob, stony	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
RsD, RsE:										
Rhodhiss, stony	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Stott Knob, stony	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
SrC, SrE:										
Siloam	D	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Redbrush	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
StC, StD, StE:										
Stott Knob, stony	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
TaD:										
Tate, extremely stony	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
TcC:										
Tate	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Colvard	A	Very low								
			Dec.-Apr.	4.0-6.6	>6.0	---	---	None	Very brief	Frequent
			May	4.5-6.6	>6.0	---	---	None	---	---
			June	6.0-6.6	>6.0	---	---	None	---	---
			November	6.0-6.6	>6.0	---	---	None	---	---
ToB:										
Toast, rocky	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
TtC:										
Toast, very rocky	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Bannertown, very rocky	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
TuB:										
Toast, rocky	B	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
Urban land	---	---								
			Jan.-Dec.	---	---	---	---	None	---	None
TwC:										
Toast, very rocky	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Urban land	---	---								
			Jan.-Dec.	---	---	---	---	None	---	None
Bannertown, very rocky	C	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Ud:										
Udorthents, loamy	C	Low								
			Jan.-Dec.	---	---	---	---	None	---	None
Ur:										
Urban land	---	---								
			Jan.-Dec.	---	---	---	---	None	---	None
WfB2, WfC2:										
Woolwine, moderately eroded	B	Very high								
			Jan.-Dec.	---	---	---	---	None	---	None
Fairview, moderately eroded	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None
Westfield, moderately eroded	B	Medium								
			Jan.-Dec.	---	---	---	---	None	---	None

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				
WoD, WoE:										
Woolwine, stony-----------	B	Very high								
			Jan.-Dec	---	---	---	---	None	---	None
Fairview, stony-----------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None
Westfield, stony----------	B	High								
			Jan.-Dec.	---	---	---	---	None	---	None

Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
ArA:							
Arkaqua, undrained-----	Strongly contrasting textural stratification	44-72	---	---	Low	High	Moderate
BaC:							
Bandana----------------	Strongly contrasting textural stratification	20-40	---	---	Low	High	Moderate
Tate-------------------	---	---	---	---	Low	Moderate	Moderate
Nikwasi, undrained-----	Strongly contrasting textural stratification	24-40	---	---	Low	High	Moderate
BbB, BbC, BbD:							
Braddock---------------	---	---	---	---	Low	High	High
BcB:							
Braddock---------------	---	---	---	---	Low	High	High
BdC, BdD:							
Braddock, stony--------	---	---	---	---	Low	High	High
BpC, BpD:							
Braddock, rubbly-------	---	---	---	---	Low	High	High
Pilot Mountain, rubbly-	---	---	---	---	Low	Moderate	High
BrD, BrE:							
Brevard, very bouldery-	---	---	---	---	Low	Moderate	Moderate
Greenlee, very bouldery	---	---	---	---	Low	High	High

Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
CeD, CeE:							
Chestnut, very rocky---	Paralithic bedrock	20-40	---	Moderately cemented	Moderate	Low	High
	Lithic bedrock	40-80	---	Indurated			
Peaks, very rocky------	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Moderate
CfF:							
Chestnut, very rocky---	Paralithic bedrock	20-40	---	Moderately cemented	Moderate	Low	High
	Lithic bedrock	40-80	---	Indurated			
Peaks, very rocky------	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Moderate
Tuckasegee, very rocky-	---	---	---	---	Moderate	Moderate	Moderate
ChE:							
Cleveland, windswept---	Lithic bedrock	10-20	---	Indurated	Moderate	Low	Moderate
Rock outcrop-----------	Lithic bedrock	0-0	---	Indurated	None	---	---
Peaks, windswept-------	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Moderate
CkF:							
Cleveland, windswept---	Lithic bedrock	10-20	---	Indurated	Moderate	Low	Moderate
Rock outcrop-----------	Lithic bedrock	0-0	---	Indurated	None	---	---
Peaks, windswept-------	Lithic bedrock	20-40	---	Indurated	Moderate	Low	Moderate
CmD:							
Cliffield, very stony--	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	High
Cowee, very stony------	Paralithic bedrock	20-40	---	Moderately cemented	Moderate	Moderate	High
	Lithic bedrock	40-80	---	Indurated			

Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top (In)	Restrictive layer: Thickness (In)	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
CnE:							
Cliffield, very rocky	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	High
Cowee, very rocky	Paralithic bedrock	20-40	---	Moderately cemented	Moderate	Moderate	High
	Lithic bedrock	40-80	---	Indurated			
CoD, CoE:							
Cliffield, rubbly	Lithic bedrock	20-40	---	Indurated	Moderate	Moderate	High
Sauratown, rubbly	Paralithic bedrock	20-40	---	Moderately cemented	Moderate	Moderate	High
	Lithic bedrock	20-40	---	Indurated			
CrB2:							
Clifford, moderately eroded	---	---	---	---	Low	High	High
CsA:							
Colvard	---	---	---	---	Low	Low	Low
Suches	---	---	---	---	Low	Moderate	Moderate
CwC, CwD, CwE:							
Cowee, stony	Paralithic bedrock	20-40	---	Moderately cemented	Moderate	Moderate	High
	Lithic bedrock	40-80	---	Indurated			
CxF:							
Cowee, rocky	Paralithic bedrock	20-40	---	Moderately cemented	Moderate	Moderate	Moderate
	Lithic bedrock	40-80	---	Indurated			
Saluda, rocky	Paralithic bedrock	10-20	---	Moderately cemented	Moderate	Moderate	Moderate
	Lithic bedrock	40-80	---	Indurated			
Evard, rocky	---	---	---	---	Moderate	Moderate	Moderate

Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
DAM:							
Dam---------------------	---	---	---	---	Low	---	---
DeF:							
Devotion, very rocky---	Paralithic bedrock	20-40	---	Weakly cemented	Low	Low	High
	Lithic bedrock	40-80	---	Weakly cemented			
Rhodhiss, very rocky---	---	---	---	---	Low	Moderate	Moderate
Bannertown, very rocky-	Paralithic bedrock	20-40	---	Weakly cemented	Low	Low	High
	Lithic bedrock	20-40	---	Weakly cemented			
DrB:							
Dillard----------------	---	---	---	---	Low	Moderate	Moderate
EcC, EcD, EcE:							
Evard, stony-----------	---	---	---	---	Moderate	Moderate	Moderate
Cowee, stony-----------	Paralithic bedrock	20-40	---	Moderately cemented	Moderate	Moderate	High
	Lithic bedrock	40-80	---	Indurated			
FeB2, FeC2, FeD2:							
Fairview, moderately eroded----------------	---	---	---	---	Low	High	High
FfD:							
Fairview, stony--------	---	---	---	---	Low	High	High
FnB2, FnC2:							
Fairview, moderately eroded----------------	---	---	---	---	Low	High	High
FrC2, FrD2:							
Fairview, moderately eroded----------------	---	---	---	---	Low	High	High

Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Depth to top	Thickness	Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Concrete
		In	In				
Siloam, moderately eroded	Paralithic bedrock	10-20	---	Weakly cemented	Low	Moderate	Moderate
	Lithic bedrock	20-40	---	Weakly cemented			
FsE:							
Fairview	---	---	---	---	Low	High	High
Stott Knob	Paralithic bedrock	20-40	---	Weakly cemented	Low	Moderate	High
	Lithic bedrock	40-80	---	Strongly cemented			
FtE:							
Fairview, stony	---	---	---	---	Low	High	High
Stott Knob, stony	Paralithic bedrock	20-40	---	Weakly cemented	Low	Moderate	High
	Lithic bedrock	40-80	---	Strongly cemented			
FuB2, FuC2:							
Fairview, moderately eroded	---	---	---	---	Low	High	High
Urban land	---	---	---	---	Low	---	---
GrE:							
Greenlee, rubbly	---	---	---	---	Low	High	High
HaA:							
Hatboro, drained	Strongly contrasting textural stratification	30-60	---	Noncemented	Low	High	Moderate
Hatboro, undrained	Strongly contrasting textural stratification	30-60	---	Noncemented	Low	High	Moderate

Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
MsC, MsD, MsE:							
Meadowfield, very stony	Lithic bedrock	20-40	---	Indurated	Low	Moderate	High
Stott Knob, very stony-	Paralithic bedrock	20-40	---	Weakly cemented	Low	Moderate	High
	Lithic bedrock	40-80	---	Strongly cemented			
Pt:							
Pits, quarry-----------	Lithic bedrock	0-0	---	Indurated	Low	---	---
RbD:							
Rhodhiss, very rocky---	---	---	---	---	Low	Moderate	Moderate
Bannertown, very rocky-	Paralithic bedrock	20-40	---	Weakly cemented	Low	Low	High
	Lithic bedrock	20-40	---	Weakly cemented			
RrE:							
Rhodhiss, very bouldery	---	---	---	---	Low	Moderate	Moderate
Bannertown, very bouldery--------------	Paralithic bedrock	20-40	---	Weakly cemented	Low	Low	High
	Lithic bedrock	20-40	---	Weakly cemented			
Rock outcrop-----------	Lithic bedrock	0-0	---	Indurated	Low	---	---
RsB, RsC, RsD, RsE:							
Rhodhiss, stony--------	---	---	---	---	Low	Moderate	Moderate
Stott Knob, stony------	Paralithic bedrock	20-40	---	Weakly cemented	Low	Moderate	High
	Lithic bedrock	40-80	---	Strongly cemented			
SrC, SrE:							
Siloam-----------------	Paralithic bedrock	10-20	---	Weakly cemented	Low	Moderate	Moderate
	Lithic bedrock	20-40	---	Weakly cemented			

Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
Redbrush	Paralithic bedrock	20-40	---	Weakly cemented	Low	High	Moderate
	Lithic bedrock	20-40	---	Weakly cemented			
StC, StD, StE:							
Stott Knob, stony	Paralithic bedrock	20-40	---	Weakly cemented	Low	Moderate	High
	Lithic bedrock	40-80	---	Strongly cemented			
TaD:							
Tate, extremely stony	---	---	---	---	Low	Moderate	Moderate
TcC:							
Tate	---	---	---	---	Low	Moderate	Moderate
Colvard	---	---	---	---	Low	Low	Low
ToB:							
Toast, rocky	---	---	---	---	Low	High	High
TtC:							
Toast, very rocky	---	---	---	---	Low	High	High
Bannertown, very rocky	Paralithic bedrock	20-40	---	Weakly cemented	Low	Low	High
	Lithic bedrock	20-40	---	Weakly cemented			
TuB:							
Toast, rocky	---	---	---	---	Low	High	High
Urban land	---	---	---	---	Low	---	---
TwC:							
Toast, very rocky	---	---	---	---	Low	High	High
Urban land	---	---	---	---	Low	---	---
Bannertown, very rocky	Paralithic bedrock	20-40	---	Weakly cemented	Low	Low	High
	Lithic bedrock	20-40	---	Weakly cemented			

Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In				
Ud:							
Udorthents, loamy------	---	---	---	---	Low	Moderate	High
Ur:							
Urban land-------------	---	---	---	---	Low	---	---
WfB2, WfC2:							
Woolwine, moderately eroded----------------	Paralithic bedrock	20-40	---	Weakly cemented	Low	High	High
	Lithic bedrock	40-80	---	Weakly cemented			
Fairview, moderately eroded----------------	---	---	---	---	Low	High	High
Westfield, moderately eroded----------------	Paralithic bedrock	40-60	---	Weakly cemented	Low	High	High
WoD, WoE:							
Woolwine, stony--------	Paralithic bedrock	20-40	---	Weakly cemented	Low	High	High
	Lithic bedrock	40-80	---	Weakly cemented			
Fairview, stony--------	---	---	---	---	Low	High	High
Westfield, stony-------	Paralithic bedrock	40-60	---	Weakly cemented	Low	High	High

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
Arkaqua	Fine-loamy, mixed, active, mesic Fluvaquentic Dystrudepts
Bandana	Coarse-loamy, mixed, active, nonacid, mesic Aeric Fluvaquents
Bannertown	Coarse-loamy, mixed, semiactive, mesic Typic Dystrudepts
Braddock	Fine, mixed, semiactive, mesic Typic Hapludults
Brevard	Fine-loamy, parasesquic, mesic Typic Hapludults
Chestnut	Coarse-loamy, mixed, active, mesic Typic Dystrudepts
Cleveland	Loamy, mixed, active, mesic Lithic Dystrudepts
Cliffield	Loamy-skeletal, mixed, subactive, mesic Typic Hapludults
Clifford	Fine, kaolinitic, mesic Typic Kanhapludults
Colvard	Coarse-loamy, mixed, active, nonacid, mesic Typic Udifluvents
Cowee	Fine-loamy, parasesquic, mesic Typic Hapludults
Devotion	Coarse-loamy, mixed, semiactive, mesic Typic Dystrudepts
Dillard	Fine-loamy, mixed, semiactive, mesic Aquic Hapludults
Evard	Fine-loamy, parasesquic, mesic Typic Hapludults
Fairview	Fine, kaolinitic, mesic Typic Kanhapludults
*Greenlee	Loamy-skeletal, siliceous, semiactive, mesic Typic Dystrudepts
Hatboro	Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Meadowfield	Loamy-skeletal, mixed, subactive, mesic Typic Hapludults
Nikwasi	Coarse-loamy over sandy or sandy-skeletal, mixed, superactive, nonacid, mesic Cumulic Humaquepts
Peaks	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Pilot Mountain	Loamy-skeletal, parasesquic, mesic Typic Hapludults
Redbrush	Fine, mixed, superactive, mesic Typic Hapludalfs
Rhodhiss	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Saluda	Loamy, mixed, active, mesic, shallow Typic Hapludults
Sauratown	Fine-loamy, mixed, subactive, mesic Typic Hapludults
Siloam	Loamy, mixed, superactive, mesic, shallow Typic Hapludalfs
Stott Knob	Fine-loamy, parasesquic, mesic Typic Hapludults
Suches	Fine-loamy, mixed, semiactive, mesic Fluventic Dystrudepts
Tate	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Toast	Fine, kaolinitic, mesic Typic Kanhapludults
Tuckasegee	Fine-loamy, isotic, mesic Humic Dystrudepts
Udorthents	Udorthents
Westfield	Fine, kaolinitic, mesic Typic Kanhapludults
Woolwine	Fine, kaolinitic, mesic Typic Kanhapludults

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