United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Virginia Polytechnic Institute and State University, Virginia Department of Conservation and Recreation, Brunswick County Board of Supervisors, and Lake Country Soil and Water Conservation District

Soil Survey of Brunswick County, Virginia

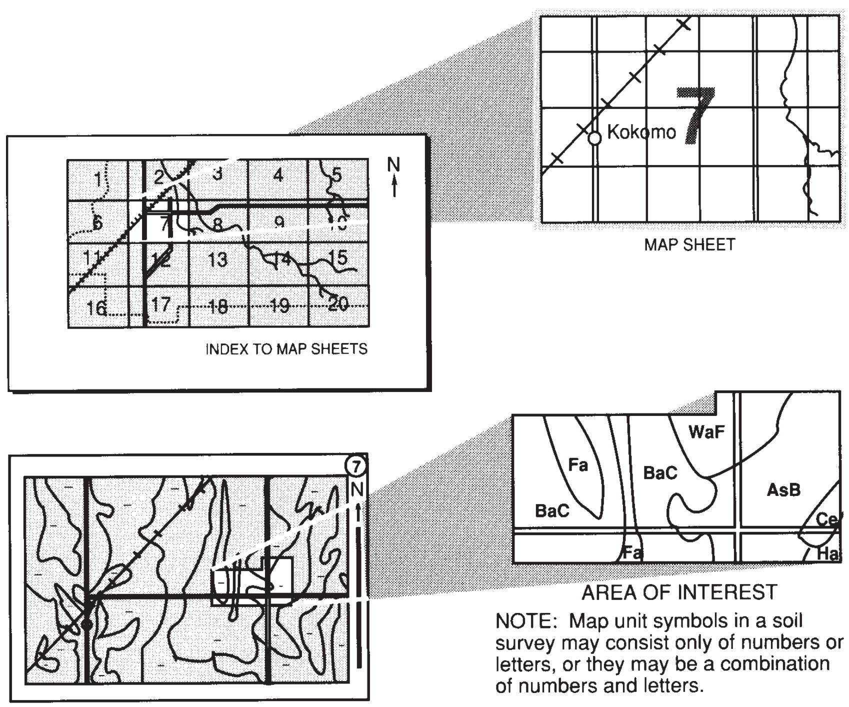
How To Use This Soil Survey

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

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

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

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



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, the Virginia Polytechnic Institute and State University, the Virginia Department of Conservation and Recreation, the Brunswick County Board of Supervisors, and the Lake Country Soil and Water Conservation District.

Major fieldwork for this soil survey was completed in 2005. Soil names and descriptions were approved in 2007. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2007. The most current official data are available on the Internet (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.

Nondiscrimination Statement

Cover Caption

Agriculture and tree production run much of Brunswick County's economy.

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

Contents

Issued 2009

Foreword

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, ranchers, 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.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency—nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

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 map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

John A. Bricker
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Brunswick County, Virginia

By John David Harper Jr. and John C. Nicholson, Natural Resources Conservation Service

Fieldwork by Dabney Easthan, Joanne B. Dixon, John C. Nicholson, Greg A. Hammer, and John David Harper Jr., Natural Resources Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service,
in cooperation with
Virginia Polytechnic Institute and State University, Virginia Department of Conservation and Recreation, Brunswick County Board of Supervisors, and Lake Country Soil and Water Conservation District

Brunswick County is located in south-central Virginia on the North Carolina border (fig. 1). It is about 60 miles south of Richmond and 160 miles south of Washington, D.C. The survey area is bordered by Dinwiddie and Nottoway Counties on the north, Lunenburg and Mecklenburg Counties on the west, Greensville and Sussex Counties on the east, and Warren and Northampton Counties, North Carolina, on the south. The county consists of 579 square miles. It has three incorporated towns: Alberta, Brodnax, and Lawrenceville. Lawrenceville is the county seat. According to the U.S. Census Bureau, the population of the survey area in 2000 was 18,419.

The major industries in Brunswick County are related to wood and textiles. Three-quarters of the survey area is covered by woodland, with 285,000 acres in commercial forestland. Agriculture is also an important industry and includes field crop and livestock operations. Farming has steadily decreased in recent years, but the county still remains the fourth largest tobacco producer in Virginia.

General Nature of the Survey Area

This section provides general information about the survey area. It describes physiography, general land use, history, general geology, geologic history, land uses of soils weathered from the rock types, and climate.

Physiography

The survey area is located just to the west of the Fall Zone in the Southern Piedmont Major Land Resource Area (MLRA 136). The Southern Piedmont MLRA consists of nearly level to steep residual uplands, high river terraces, and gently sloping flood plains along the major rivers. Soils are predominantly well drained and clayey. Elevations range from 200 feet, which is the normal water level of Lake Gaston, to 470 feet in the northwestern portion of the county.

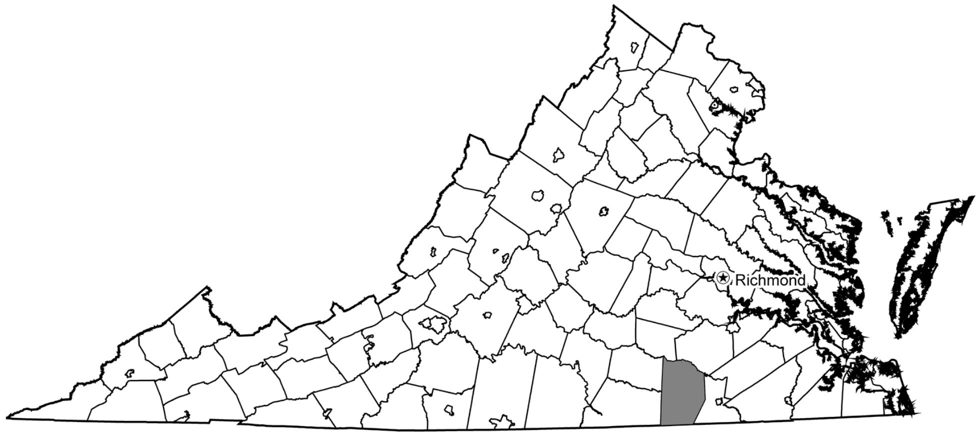


Figure 1.—Location of Brunswick County in Virginia.

General Land Use

Present land use is predominantly forestry and general agriculture. Timber stands are mostly loblolly pines and oaks. Peanuts, cotton, corn, soybeans, tobacco, hay, and pasture are the major agricultural crops. Land use adjacent to Lake Gaston, Alberta, Brodnax, and Lawrenceville is rapidly changing to residential in the form of individual homesites, farmettes, and developments. This pattern is expected to intensify in these portions of the county over the next 25 to 30 years.

History

The survey area appears to have been first inhabited by Native Americans 15,000 years ago. European exploration of the survey area began around 1650 when the fur trading industry expanded south of the James River along the Tuscarora Path. The Europeans encountered Native American residents from the Meherrin, Nottaway, Occaneeche, Sapony, and Weynoke tribes. Around 1714, the settlement of Fort Christanna was established along the Meherrin River south of Lawrenceville. Brunswick County was formed in 1720. The county's borders originally spanned from east of the Fall Line in present-day Greensville County to the Blue Ridge Mountains. The county was named for the House of Brunswick, which had assumed the British throne in 1714 (Neale, 1975).

General Geology

Tinsley Mack, Geologist, Natural Resources Conservation Service, Virginia, prepared this section.

Rock types, such as igneous metamorphic rocks, and coastal plain sediments underlie the soils of Brunswick County.

Most of the igneous rock present is granite. This rock contains feldspar, quartz, and mica minerals. Granite is the hardened product of a deep-seated molten igneous body emplaced at least a mile below the earth's surface. Continued erosion for long periods of time exposed this rock at the surface.

The metamorphic rocks occurring in Brunswick County include the granite gneiss in the western part of the county and the rocks of the Eastern Slate Belt in the central and eastern parts of the county.

The granite gneiss has minerals similar to those occurring in granite. It has a banded structure. This gneiss is the result of metamorphism of high heat and pressure upon a shale sediment.

Metamorphic rocks of the Eastern Slate Belt include sericite, chlorite, and talc schist interbedded with phyllite. A very small amount of greenstone occurs in the extreme northeastern corner of the county. The schist is the result of metamorphism upon a group of sediments such as limy shale, shale, and sandstone. The phyllite is the product of metamorphism upon a shale. Greenstone is metamorphosed from basic lava flows.

Geologic History

Tinsley Mack, Geologist, Natural Resources Conservation Service, Virginia, prepared this section.

Approximately 500 million years ago, the survey area was an inland seaway. Lying to the east of this sea was an island arc. From this island landmass came shale sediments that filled the seaway. Later down-warping of the earth's crust caused a fairly deep-sea trench to be formed where the old seaway formerly was. Into this narrow sea was deposited the sediments and lava that were later to form the Carolina Slate Belt.

Approximately 200 million years ago, this area was injected with great masses of molten granite. A great mountain range was lifted up out of the old inland sea. Intense heat and pressure changed the shale sediments and the materials in the Carolina Slate Belt into metamorphic rocks.

Finally, the high mountains, which were probably higher than the modern Himalayas, were worn down by erosion. The land became so beveled that the Atlantic Ocean invaded and covered the area.

The Atlantic Ocean receded eastward as the beveled, flattened land surface gradually rose. Remnants of this flat beveled plain still exist as the level horizon that is formed by the level tops of the higher hills. Recent streams have cut into this plain, forming the gently rolling hills.

Traces of the sediments of sand, clay, and gravel deposited in the Atlantic Ocean occur on the tops of the higher level hills in eastern Brunswick County. These traces form a thin irregular capping on the hilltops.

Land Uses of Soils Weathered From the Rock Types

Most of the soils in Brunswick County are deeply weathered and range from 10 to 30 feet to weathered rock. The soils that weathered from the granite, the granite gneiss, and the schist of the Carolina Slate Belt exhibit similar foundation conditions. These conditions are generally acceptable for normal light construction.

Dam sites for smaller dams are available on these soils that weathered from granite, gneiss, and schist. Since the alluvial soils of the smaller streams are not as deep as the deeply weathered residual soils on the gentle hills, cutoff to rock can often be obtained. Plastic soil material used to form the core of the embankment may be scarce in many cases.

The soils derived from the coastal plain sediments have generally acceptable building foundations. However, since these soils have sand and gravel present, they are porous. They are not recommended for dam sites.

Climate

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

In winter, the average temperature is 39.4 degrees F and the average daily minimum temperature is 27.9 degrees. The lowest temperature on record, which occurred at Lawrenceville on January 21, 1985, was -10 degrees. In summer, the average temperature is 74.8 degrees and the average daily maximum temperature is 87.1 degrees. The highest temperature, which occurred at Lawrenceville on July 29, 1952, was 107 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (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 average annual total precipitation is about 44.91 inches. Of this, about 23.7 inches, or 53 percent, usually falls in May through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 8.11 inches, recorded at Lawrenceville on October 5, 1972. Thunderstorms occur on about 37 days each year, and most occur between May and August.

The average seasonal snowfall is 12.9 inches. The greatest snow depth at any one time during the period of record was 16 inches, recorded on January 30, 1966. On an average, 5 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 14.5 inches, recorded on February 18, 1989.

The average relative humidity in mid-afternoon is about 53 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 68 percent of the time in summer and 55 percent in winter. The prevailing wind is from the southwest. 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.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRAs.

The soils and miscellaneous areas in the survey area occur 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.

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*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given 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, Cecil sandy clay loam, 2 to 8 percent slopes, severely eroded, is a phase of the Cecil 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. Lignum-Cid complex, 2 to 8 percent slopes, 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. Chewacla and Wehadkee soils, 0 to 2 percent slopes, frequently 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. The Rock outcrop part of Ashlar-Rock outcrop complex, 15 to 25 percent slopes, is an example.

Table 4 lists the map units in this survey area. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

1C—Appling sandy loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 12 inches—brown sandy loam; yellowish red mottles

Subsoil:
12 to 18 inches—brownish yellow clay loam; common yellowish red mottles
18 to 29 inches—strong brown clay; common yellowish red mottles
29 to 37 inches—strong brown clay; common light yellowish brown mottles
37 to 51 inches—brownish yellow and reddish yellow clay loam; common reddish yellow mottles

Substratum:
51 to 61 inches—yellowish red and brownish yellow sandy clay loam; common yellowish red mottles

Minor Components

Dissimilar components:
- Ashlar soils, which are moderately deep to hard bedrock; in similar landscape positions
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Wedowee soils, which have a thinner solum; in similar landscape positions

- Cecil soils, which are redder; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Residuum weathered from granite and gneiss

Use and Management Considerations

Cropland

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

Pastureland

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

Woodland

Suitability: Well suited to loblolly pine and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

2B—Appling-Mattaponi complex, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Appling and similar soils: Typically 60 percent, ranging from about 55 to 70 percent
Mattaponi and similar soils: Typically 35 percent, ranging from about 30 to 40 percent

Typical Profile

Appling

Surface layer:
0 to 12 inches—brown sandy loam; yellowish red mottles

Subsoil:
12 to 18 inches—brownish yellow clay loam; common yellowish red mottles
18 to 29 inches—strong brown clay; common yellowish red mottles
29 to 37 inches—strong brown clay; common light yellowish brown mottles
37 to 51 inches—brownish yellow and reddish yellow clay loam; common reddish yellow mottles

Substratum:
51 to 61 inches—yellowish red and brownish yellow sandy clay loam; common yellowish red mottles

Mattaponi

Surface layer:
0 to 10 inches—brown sandy loam

Subsurface layer:
10 to 14 inches—light yellowish brown sandy loam

Subsoil:
14 to 19 inches—brownish yellow clay
19 to 25 inches—brownish yellow clay; common strong brown mottles
25 to 35 inches—strong brown clay; common yellowish red mottles
35 to 60 inches—strong brown clay loam; red masses of oxidized iron and light gray iron depletions

Minor Components

Dissimilar components:
- Ashlar soils, which are moderately deep to hard bedrock; in similar landscape positions

Similar components:
- Wedowee soils, which have a thinner solum; in similar landscape positions

- Cecil soils, which are redder; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Appling—well drained; Mattaponi—moderately well drained
Depth to seasonal water saturation: Appling—more than 6 feet; Mattaponi—about 30 to 39 inches
Water table kind: Mattaponi—perched; Appling—none
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Appling—low; Mattaponi—moderate
Runoff class: Low
Surface fragments: None
Parent material: Appling—residuum weathered from granite and gneiss; Mattaponi—ancient clayey fluviomarine deposits

Use and Management Considerations

Cropland

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

Pastureland

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

Woodland

Suitability: Well suited to loblolly pine and yellow-popular
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- These soils are well suited to haul roads and log landings.
- These soils are well suited to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems and may lead to pollution of the water table.
- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength may cause structural damage to local roads and streets.

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: Appling—V; Mattaponi—R
Hydric soils: No

3D—Ashlar-Rock outcrop complex, 15 to 25 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Ashlar and similar soils: Typically 85 percent, ranging from about 80 to 90 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Ashlar

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

Subsoil:
3 to 10 inches—light yellowish brown sandy loam
10 to 28 inches—pale brown gravelly sandy loam

Soft bedrock:
28 to 30 inches—soft bedrock

Hard bedrock:
30 inches—hard bedrock

Rock outcrop

This part of the map unit consists of areas where igneous or metamorphic bedrock crops out at the surface.

Minor Components

Dissimilar components:
- Rion soils, which are very deep to hard bedrock; in similar landscape positions
- Wedowee soils, which have a higher clay content in the solum; in similar landscape positions

Similar components:
- Soils that are shallower to hard bedrock

Properties and Qualities of the Ashlar Soil

Available water capacity: Low (about 3.3 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)

Depth to root-restrictive feature: 28 inches to bedrock (paralithic) and 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: High
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

Suitability: Moderately suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The limited available water capacity may cause plants to suffer from moisture stress during the drier summer months.
- Rock outcrops may limit machinery operations.

Woodland

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

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

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

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Ashlar—6e; Rock outcrop—8s
Virginia soil management group: Ashlar—FF; Rock outcrop—none assigned
Hydric soils: No

3E—Ashlar-Rock outcrop complex, 25 to 45 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Ashlar and similar soils: Typically 85 percent, ranging from about 80 to 90 percent
Rock outcrop: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Ashlar

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

Subsoil:
3 to 10 inches—light yellowish brown sandy loam
10 to 28 inches—pale brown gravelly sandy loam

Soft bedrock:
28 to 30 inches—soft bedrock

Hard bedrock:
30 inches—hard bedrock

Rock outcrop

This part of the map unit consists of areas where igneous and metamorphic bedrock crops out at the surface.

Minor Components

Dissimilar components:
- Rion soils, which are very deep to hard bedrock; in similar landscape positions
- Wedowee soils, which have a higher clay content in the solum; in similar landscape positions

Similar components:
- Soils that are shallower to hard bedrock

Properties and Qualities of the Ashlar Soil

Available water capacity: Low (about 3.3 inches)
Slowest saturated hydraulic conductivity: High (about 1.98 in/hr)
Depth class: Moderately deep (20 to 40 inches)

Depth to root-restrictive feature: 28 inches to bedrock (paralithic) and 20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

- This map unit is unsuited to cropland.

Pastureland

- This map unit is not recommended for pastureland.

Woodland

Suitability: Moderately suited to northern red oak and loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality, especially in areas on the steeper slopes. A timber harvest plan should focus on the proper location of haul roads and skid trails, and careful attention should be given to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for planting and seeding is impractical.
- The slope makes the use of mechanical planting equipment impractical.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

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

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Ashlar—6e; Rock outcrop—8s

Virginia soil management group: Ashlar—FF; Rock outcrop—none assigned
Hydric soils: No

4C—Badin-Goldston complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Badin and similar soils: Typically 60 percent, ranging from about 50 to 70 percent
Goldston and similar soils: Typically 40 percent, ranging from about 30 to 50 percent

Typical Profile

Badin

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

Subsurface layer:
7 to 13 inches—brownish yellow silt loam; common yellowish brown mottles

Subsoil:
13 to 23 inches—yellowish red silty clay
23 to 37 inches—strong brown channery silty clay

Soft bedrock:
37 inches—phyllite bedrock

Goldston

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

Subsoil:
6 to 18 inches—light yellowish brown very channery silt loam

Soft bedrock:
18 to 26 inches—light gray bedrock

Hard bedrock:
26 inches—bedrock

Minor Components

Dissimilar components:
- Nason soils, which are deep to hard bedrock; in similar landscape positions
- Lignum soils, which are wetter; in drainageways

Soil Properties and Qualities

Available water capacity: Badin—moderate (about 6.4 inches); Goldston—very low (about 2.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.58 in/hr)
Depth class: Badin—moderately deep (20 to 40 inches); Goldston—shallow (10 to 20 inches)
Depth to root-restrictive feature: Badin—20 to 40 inches to bedrock (paralithic);

Goldston—15 to 20 inches to bedrock (paralithic) and 20 to 30 inches to bedrock (lithic)

Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Badin—moderate; Goldston—low
Runoff class: Badin—medium; Goldston—low
Surface fragments: None

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn, alfalfa hay, wheat, and soybeans

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The depth to bedrock restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

Suitability: Moderately suited

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

Woodland

Suitability: Moderately suited to loblolly pine

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

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

Local roads and streets

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

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Badin—3e; Goldston—7s
Virginia soil management group: Badin—X; Goldston—JJ
Hydric soils: No

5B—Cecil sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Cecil and similar soils: Typically 90 percent, ranging from about 85 to 98 percent

Typical Profile

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

Subsoil:
10 to 16 inches—strong brown sandy clay loam
16 to 25 inches—red clay loam
25 to 50 inches—red clay
50 to 65 inches—red sandy clay loam

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Pacolet soils, which have a thinner solum; in similar landscape positions
- Appling soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None

Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

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

Pastureland

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

Woodland

Suitability: Well suited to northern red oak, yellow-poplar, loblolly pine, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

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

5C—Cecil sandy loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Cecil and similar soils: Typically 90 percent, ranging from about 85 to 98 percent

Typical Profile

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

Subsoil:
10 to 16 inches—strong brown sandy clay loam
16 to 25 inches—red clay loam
25 to 50 inches—red clay
50 to 65 inches—red sandy clay loam

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Pacolet soils, which have a thinner solum; in similar landscape positions
- Appling soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

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

Pastureland

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

Woodland

Suitability: Well suited to northern red oak; moderately suited to loblolly pine, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

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

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

6B3—Cecil sandy clay loam, 2 to 8 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Cecil and similar soils: Typically 88 percent, ranging from about 85 to 95 percent

Typical Profile

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

Subsoil:
10 to 16 inches—strong brown sandy clay loam
16 to 25 inches—red clay loam
25 to 50 inches—red clay
50 to 65 inches—red sandy clay loam

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Pacolet soils, which have a thinner solum; in similar landscape positions
- Appling soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

Suitability: Moderately suited to wheat; poorly suited to corn, soybeans, and alfalfa hay
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- The high clay content restricts the rooting depth of crops.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

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

Woodland

Suitability: Well suited to northern red oak; moderately suited to loblolly pine, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites

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

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems and may lead to pollution of the water table.
- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

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

6C3—Cecil sandy clay loam, 8 to 15 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

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

Typical Profile

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

Subsoil:
10 to 16 inches—strong brown sandy clay loam
16 to 25 inches—red clay loam
25 to 50 inches—red clay
50 to 65 inches—red sandy clay loam

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Pacolet soils, which have a thinner solum; in similar landscape positions
- Appling soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from gneiss and/or saprolite derived from granite

Use and Management Considerations

Cropland

Suitability: Moderately suited to wheat; poorly suited to corn, soybeans, and alfalfa hay

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- The high clay content restricts the rooting depth of crops.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

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

Woodland

Suitability: Well suited to northern red oak; moderately suited to loblolly pine, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

7B—Cecil-Urban land complex, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Cecil and similar soils: Typically 85 percent, ranging from about 80 to 90 percent
Urban land: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Cecil

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

Subsoil:
10 to 16 inches—strong brown sandy clay loam
16 to 25 inches—red clay loam
25 to 50 inches—red clay
50 to 65 inches—red sandy clay loam

Urban land

This part of the map unit consists of areas of roads, commercial buildings, industries, schools, churches, parking lots, streets, and shopping centers.

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Pacolet soils, which have a thinner solum; in similar landscape positions
- Appling soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Properties and Qualities of the Cecil Soil

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Building sites

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

Septic tank absorption fields

- The excessive permeability limits the proper treatment of the effluent from conventional septic systems and may lead to pollution of the water table.
- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength is unfavorable for supporting heavy loads on the natural surface.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cecil—2e; Urban land—8s
Virginia soil management group: Cecil—X; Urban land—none assigned
Hydric soils: No

7C—Cecil-Urban land complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Cecil and similar soils: Typically 85 percent, ranging from about 80 to 90 percent
Urban land: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Cecil

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

Subsoil:
10 to 16 inches—strong brown sandy clay loam
16 to 25 inches—red clay loam
25 to 50 inches—red clay
50 to 65 inches—red sandy clay loam

Urban land

This part of the map unit consists of areas of roads, commercial buildings, industries, schools, churches, parking lots, streets, and shopping centers.

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Pacolet soils, which have a thinner solum; in similar landscape positions
- Appling soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Properties and Qualities of the Cecil Soil

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None

Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength is unfavorable for supporting heavy loads on the natural surface.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Cecil—3e; Urban land—8s
Virginia soil management group: Cecil—X; Urban land—none assigned
Hydric soils: No

8A—Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plain
Position on the landform: Flood plain

Map Unit Composition

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

Typical Profile

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

Subsurface layer:
8 to 15 inches—yellowish brown silt loam; few yellowish brown mottles

Subsoil:
15 to 30 inches—yellowish brown silt loam; common light yellowish brown mottles and light brownish gray clay depletions
30 to 36 inches—brown silt loam; light brownish gray clay depletions
36 to 42 inches—light yellowish brown silty clay loam; light gray clay depletions
42 to 48 inches—light yellowish brown silty clay loam; yellowish brown iron-manganese concretions and light gray clay depletions

48 to 55 inches—light brownish gray silty clay loam; common yellowish brown mottles and yellowish brown iron-manganese concretions

Substratum:
55 to 62 inches—light brownish gray silt loam; yellowish brown iron-manganese concretions

Minor Components

Dissimilar components:
- Wehadkee soils, which are poorly drained; in similar landscape positions
- Riverview soils, which are well drained; in similar landscape positions

Similar components:
- Soils that are moderatley well drained; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 10.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Somewhat poorly drained
Depth to seasonal water saturation: About 6 to 18 inches
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Loamy alluvium

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn, soybeans, and wheat
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Flooding may damage crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland

Suitability: Well suited to sweetgum; moderately suited to yellow-poplar and loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.

- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

- Flooding is a limitation affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

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

Interpretive Groups

Prime farmland: Prime farmland if drained
Land capability class: 4w
Virginia soil management group: I
Hydric soil: No

9A—Chewacla and Wehadkee soils, 0 to 2 percent slopes, frequently flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plain
Position on the landform: Flood plain

Map Unit Composition

Chewacla and similar soils: Typically 60 percent, ranging from about 50 to 90 percent
Wehadkee and similar soils: Typically 40 percent, ranging from about 10 to 50 percent

Typical Profile

Chewacla

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

Subsurface layer:
8 to 15 inches—yellowish brown silt loam; few yellowish brown mottles

Subsoil:
15 to 30 inches—yellowish brown silt loam; common light yellowish brown mottles and light brownish gray clay depletions
30 to 36 inches—brown silt loam; light brownish gray clay depletions
36 to 42 inches—light yellowish brown silty clay loam; light gray clay depletions

42 to 48 inches—light yellowish brown silty clay loam; yellowish brown iron-manganese concretions and light gray clay depletions
48 to 55 inches—light brownish gray silty clay loam; common yellowish brown mottles and yellowish brown iron-manganese concretions

Substratum:
55 to 62 inches—light brownish gray silt loam; yellowish brown iron-manganese concretions

Wehadkee

Surface layer:
0 to 4 inches—grayish brown silt loam

Subsoil:
4 to 16 inches—light brownish gray fine sandy loam; dark yellowish brown and reddish brown masses of oxidized iron
16 to 26 inches—light brownish gray sandy clay loam; brownish yellow masses of oxidized iron
26 to 48 inches—gray clay loam; yellowish brown and olive yellow masses of oxidized iron and dark grayish brown iron depletions
48 to 62 inches—gray clay loam; gray iron depletions and yellowish brown and olive yellow masses of oxidized iron

Substratum:
62 to 72 inches—gray sandy clay loam; yellowish brown and olive yellow masses of oxidized iron and gray iron depletions

Minor Components

Similar components:
- Riverview soils, which are well drained; in similar landscape positions
- Soils that are moderately well drained; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 10.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Chewacla—somewhat poorly drained; Wehadkee—poorly drained
Depth to seasonal water saturation: Chewacla—about 6 to 18 inches; Wehadkee—about 0 to 12 inches
Water table kind: Apparent
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Loamy alluvium

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- Frequent flooding restricts the use of winter grain crops.

- Flooding may damage crops.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland

Suitability: Well suited to sweetgum; moderately suited to yellow-poplar and loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

- Flooding is a limitation affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland if drained
Land capability class: Chewacla—4w; Wehadkee—6w
Virginia soil management group: Chewacla—I; Wehadkee—MM
Hydric soils: Chewacla—no; Wehadkee—yes

10B—Emporia sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Coastal plain capping
Position on the landform: Summit

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 8 inches—brown sandy loam

Subsurface layer:
8 to 18 inches—pale brown sandy loam

Subsoil:
18 to 40 inches—brownish yellow sandy clay loam; common yellowish red mottles
40 to 55 inches—brownish yellow sandy clay loam; many yellowish red mottles; light brownish gray iron depletions
55 to 60 inches—brownish yellow sandy clay loam; many yellowish red mottles

Minor Components

Dissimilar components:
- Worsham soils, which are poorly drained; at the head of drains
- Mattaponi soils, which are moderately well drained; in similar landscape positions

Similar components:
- Soils which have less clay; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Low (about 0.00 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: About 36 to 47 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Fluviomarine deposits

Use and Management Considerations

Cropland

Suitability: Well suited to soybeans, peanuts, and wheat; moderately suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

Pastureland

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

Woodland

Suitability: Well suited to loblolly pine; moderately suited to southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential

negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

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

11B—Enon loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 8 inches—brown loam; iron-manganese concretions

Subsoil:
8 to 18 inches—yellowish brown clay
18 to 23 inches—yellowish brown clay
23 to 43 inches—white, dark yellowish brown, and yellowish brown clay

Substratum:
43 to 60 inches—olive, yellowish brown, and dark yellowish brown sandy loam

Minor Components

Dissimilar components:
- Worsham soils, which are poorly drained; in similar landscape positions
- Iredell soils, which are moderately well drained; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 10.4 inches)

Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Very high
Runoff class: High
Surface fragments: None
Parent material: Residuum weathered from hornblende gneiss

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

- The restricted permeabilty limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

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

Interpretive Groups

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

12B—Fluvanna-Lignum complex, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Fluvanna and similar soils: Typically 50 percent, ranging from about 15 to 80 percent
Lignum and similar soils: Typically 35 percent, ranging from about 10 to 50 percent

Typical Profile

Fluvanna

Surface layer:
0 to 1 inch—very dark grayish brown fine sandy loam

Subsurface layer:
1 to 5 inches—yellowish brown fine sandy loam

Subsoil:
5 to 11 inches—strong brown clay loam; many yellowish brown mottles
11 to 23 inches—strong brown clay; common yellowish red mottles
23 to 44 inches—yellowish red clay; common strong brown mottles
44 to 55 inches—yellowish red silty clay; many dark red and brownish yellow mottles

Substratum:
55 to 70 inches—brownish yellow, yellowish red, and dark red silty clay loam
70 to 99 inches—dark red, black, and brownish yellow silty clay loam

Lignum

Surface layer:
0 to 6 inches—light olive brown loam

Subsoil:
6 to 14 inches—yellowish brown clay; strong brown and red masses of oxidized iron and gray iron depletions
14 to 28 inches—yellowish brown silty clay; gray iron depletions and strong brown and red masses of oxidized iron
28 to 35 inches—gray silty clay; strong brown masses of oxidized iron

Substratum:
35 to 56 inches—yellowish brown silt loam

Soft bedrock:
56 to 59 inches—weathered bedrock

Minor Components

Dissimilar components:
- Tatum soils, which are deep to hard bedrock; in similar landscape positions
- Cid soils, which are in drainageways

Similar components:
- Herndon soils, which are very deep; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.0 inches)

Slowest saturated hydraulic conductivity: Low (about 0.00 in/hr)
Depth class: Fluvanna—very deep (more than 60 inches); Lignum—deep (40 to 60 inches)
Depth to root-restrictive feature: Fluvanna—more than 60 inches; Lignum—40 to 60 inches to bedrock (paralithic)
Drainage class: Fluvanna—well drained; Lignum—moderately well drained
Depth to seasonal water saturation: Fluvanna—more than 6 feet; Lignum—about 18 to 30 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from phyllite and/or saprolite derived from slate

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, soybeans, and wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to northern red oak and loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

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

Local roads and streets

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

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

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 2e
Virginia soil management group: Fluvanna—Y; Lignum—KK
Hydric soils: No

13B—Georgeville loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Georgeville and similar soils: Typically 85 percent, ranging from about 82 to 97 percent

Typical Profile

Surface layer:
0 to 4 inches—brown loam

Subsoil:
4 to 8 inches—yellowish red silty clay loam
8 to 17 inches—red silty clay
17 to 28 inches—red silty clay; common strong brown mottles
28 to 39 inches—red silty clay loam; common strong brown mottles
39 to 50 inches—red silt loam; many strong brown mottles

Substratum:
50 to 60 inches—red silt loam; many strong brown mottles

Minor Components

Dissimilar components:
- Tatum soils, which are deep to hard bedrock; in similar landscape positions
- Lignum soils, which are wetter; in drainageways

Similar components:
- Herndon soils, which are yellower; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from phyllite and/or from slate

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and soybeans; well suited to wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

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

13C—Georgeville loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Georgeville and similar soils: Typically 85 percent, ranging from about 82 to 97 percent

Typical Profile

Surface layer:
0 to 4 inches—brown loam

Subsoil:
4 to 8 inches—yellowish red silty clay loam
8 to 17 inches—red silty clay
17 to 28 inches—red silty clay; common strong brown mottles
28 to 39 inches—red silty clay loam; common strong brown mottles
39 to 50 inches—red silt loam; many strong brown mottles

Substratum:
50 to 60 inches—red silt loam; many strong brown mottles

Minor Components

Dissimilar components:
- Tatum soils, which are deep to hard bedrock; in similar landscape positions
- Lignum soils, which are wetter; in drainageways

Similar components:
- Herndon soils, which are yellower; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from phyllite and/or from slate

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, soybeans, and wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

14C—Georgeville-Mattaponi complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Georgeville and similar soils: Typically 85 percent, ranging from about 80 to 95 percent
Mattaponi and similar soils: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Georgeville

Surface layer:
0 to 4 inches—brown loam

Subsoil:
4 to 8 inches—yellowish red silty clay loam
8 to 17 inches—red silty clay
17 to 28 inches—red silty clay; common strong brown mottles
28 to 39 inches—red silty clay loam; common strong brown mottles
39 to 50 inches—red silt loam; many strong brown mottles

Substratum:
50 to 60 inches—red silt loam; many strong brown mottles

Mattaponi

Surface layer:
0 to 10 inches—brown gravelly sandy loam

Subsurface layer:
10 to 14 inches—light yellowish brown sandy loam

Subsoil:
14 to 19 inches—brownish yellow clay
19 to 25 inches—brownish yellow clay; common strong brown mottles
25 to 35 inches—strong brown clay; common yellowish red mottles
35 to 60 inches—strong brown clay loam; red masses of oxidized iron and light gray iron depletions

Minor Components

Dissimilar components:
- Tatum soils, which are deep to hard bedrock; in similar landscape positions
- Lignum soils, which are wetter; in drainageways

Similar components:
- Herndon soils, which are yellower; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.9 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Georgeville—well drained; Mattaponi—moderately well drained
Depth to seasonal water saturation: Georgeville—more than 6 feet; Mattaponi—about 30 to 39 inches
Water table kind: Georgeville—none; Mattaponi—perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Georgeville—low; Mattaponi—moderate
Runoff class: Georgeville—medium; Mattaponi—high
Surface fragments: None
Parent material: Georgeville—saprolite derived from phyllite and/or saprolite derived from slate; Mattaponi—ancient clayey fluviomarine deposits

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, soybeans, wheat, and tobacco
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

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

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Georgeville—2e; Mattaponi—3e
Virginia soil management group: Georgeville—X; Mattaponi—R
Hydric soils: No

15D—Goldston-Badin complex, 15 to 35 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Goldston and similar soils: Typically 85 percent, ranging from about 80 to 90 percent
Badin and similar soils: Typically 15 percent, ranging from about 10 to 20 percent

Typical Profile

Goldston

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

Subsoil:
6 to 18 inches—light yellowish brown very channery silt loam

Soft bedrock:
18 to 26 inches—light gray bedrock

Hard bedrock:
26 inches—bedrock

Badin

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

Subsurface layer:
7 to 13 inches—brownish yellow silt loam; common yellowish brown mottles

Subsoil:
13 to 23 inches—yellowish red silty clay
23 to 37 inches—strong brown channery silty clay

Soft bedrock:
37 inches—phyllite bedrock

Minor Components

Dissimilar components:
- Tatum soils, which are deep to hard bedrock; in similar landscape positions
- Lignum soils, which are wetter; in drainageways

Soil Properties and Qualities

Available water capacity: Goldston—very low (about 2.8 inches); Badin—moderate (about 6.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Goldston—shallow (10 to 20 inches); Badin—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Goldston—15 to 20 inches to bedrock (paralithic) and 20 to 30 inches to bedrock (lithic); Badin—20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Goldston—low; Badin—moderate
Runoff class: Medium
Surface fragments: Goldston—about 2.00 to 20.00 percent channers; Badin—none
Parent material: Residuum weathered from slate and/or residuum weathered from phyllite

Use and Management Considerations

Cropland

- These soils are unsuited to cropland.

Pastureland

- These soils are unsuited to pastureland.

Woodland

Suitability: Poorly suited to loblolly pine and southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The use of mechanical planting equipment is impractical because of the content of rock fragments.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low strength interferes with the construction of haul roads and log landings.

- The low strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

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

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Goldston—7s; Badin—4e
Virginia soil management group: Golston—JJ; Badin—X
Hydric soils: No

16B—Helena sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Uplands
Position on the landform: Summit, head of drain, and shoulder

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 8 inches—yellowish brown sandy loam

Subsoil:
8 to 15 inches—yellowish brown sandy clay loam
15 to 30 inches—yellowish brown sandy clay; red masses of oxidized iron
30 to 40 inches—yellowish brown sandy clay; light gray iron depletions
40 to 50 inches—strong brown and brownish yellow clay loam; light gray iron depletions

Substratum:
50 to 61 inches—yellowish brown sandy clay loam; light gray iron depletions

Minor Components

Dissimilar components:
- Worsham soils, which are poorly drained; at the heads of drainageways
- Enon soils, which are well drained; in similar landscape positions

Similar components:
- Iredell soils, which have high shrink-swell expansive clays

Soil Properties and Qualities

Available water capacity: Moderate (about 7.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 30 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, soybeans, and wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Shrinking and swelling of the soil may crack foundations and basement walls.

Septic tank absorption fields

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

- The restricted permeabilty limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

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

16C—Helena sandy loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 8 inches—yellowish brown sandy loam

Subsoil:
8 to 15 inches—yellowish brown sandy clay loam
15 to 30 inches—yellowish brown sandy clay; red masses of oxidized iron
30 to 40 inches—yellowish brown sandy clay; light gray iron depletions
40 to 50 inches—strong brown and brownish yellow clay loam; light gray iron depletions

Substratum:
50 to 61 inches—yellowish brown sandy clay loam; light gray iron depletions

Minor Components

Dissimilar components:
- Worsham soils, which are poorly drained; at the heads of drainageways
- Enon soils, which are well drained; in similar landscape positions

Similar components:
- Iredell soils, which have high shrink-swell expansive clays

Soil Properties and Qualities

Available water capacity: Moderate (about 7.8 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained

Depth to seasonal water saturation: About 18 to 30 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: High
Runoff class: High
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, soybeans, and wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.

Septic tank absorption fields

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

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

17B—Herndon loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Herndon and similar soils: Typically 85 percent, ranging from about 82 to 96 percent

Typical Profile

Surface layer:
0 to 6 inches—brown loam

Subsoil:
6 to 10 inches—yellowish brown silty clay loam
10 to 23 inches—strong brown silty clay; common yellowish red mottles
23 to 50 inches—strong brown silty clay; common red and yellowish brown mottles
50 to 61 inches—strong brown silt loam

Minor Components

Dissimilar components:
- Tatum soils, which are deep to hard bedrock; in similar landscape positions
- Lignum soils, which are wetter; in drainageways

Similar components:
- Georgeville soils, which are redder; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 9.4 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.65 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from phyllite and/or saprolite derived from slate

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn, soybeans, and wheat

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

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

18B—Iredell gravelly sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 4 inches—olive brown gravelly sandy loam; iron-manganese concretions

Subsurface layer:
4 to 9 inches—yellowish brown gravelly sandy loam; reddish brown masses of oxidized iron

Subsoil:
9 to 15 inches—yellowish brown clay; black manganese masses
15 to 24 inches—yellowish brown clay; light gray iron depletions and black manganese masses
24 to 31 inches—yellowish brown clay; black manganese masses and light gray iron depletions
31 to 40 inches—yellowish brown, white, dark yellowish brown, and olive clay loam

Substratum:
40 to 61 inches—olive, white, and yellowish brown loam

Minor Components

Dissimilar components:
- Worsham soils, which are poorly drained; at the heads of drainageways
- Enon soils, which are well drained; in similar landscape positions

Similar components:
- Helena soils, which are in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 10.1 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Very high
Runoff class: High
Surface fragments: None
Parent material: Saprolite derived from diabase

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn, soybeans, and wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Poorly suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

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

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

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

18C—Iredell gravelly sandy loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Iredell and similar soils: Typically 82 percent, ranging from about 80 to 90 percent

Typical Profile

Surface layer:
0 to 4 inches—olive brown gravelly sandy loam; iron-manganese concretions

Subsurface layer:
4 to 9 inches—yellowish brown gravelly sandy loam; reddish brown masses of oxidized iron

Subsoil:
9 to 15 inches—yellowish brown clay; black manganese masses
15 to 24 inches—yellowish brown clay; light gray iron depletions and black manganese masses
24 to 31 inches—yellowish brown clay; black manganese masses and light gray iron depletions
31 to 40 inches—yellowish brown, white, dark yellowish brown, and olive clay loam

Substratum:
40 to 61 inches—olive, white, and yellowish brown loam

Minor Components

Dissimilar components:
- Worsham soils, which are poorly drained; at the heads of drainageways
- Enon soils, which are well drained; in similar landscape positions

Similar components:
- Helena soils, which are in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 10.1 inches)
Slowest saturated hydraulic conductivity: Moderately low (about 0.06 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Very high
Runoff class: Very high
Surface fragments: None
Parent material: Saprolite derived from diabase

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn, soybeans, and wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Poorly suited to loblolly pine
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The slope influences the use of machinery and the amount of excavation required.
- Shrinking and swelling of the soil may crack foundations and basement walls.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

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

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

19B—Lignum-Cid complex, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Drainageway and summit

Map Unit Composition

Lignum and similar soils: Typically 60 percent, ranging from about 50 to 70 percent
Cid and similar soils: Typically 35 percent, ranging from about 30 to 50 percent

Typical Profile

Lignum

Surface layer:
0 to 6 inches—light olive brown loam

Subsoil:
6 to 14 inches—yellowish brown clay; strong brown and red masses of oxidized iron and gray iron depletions

14 to 28 inches—yellowish brown silty clay; gray iron depletions and strong brown and red masses of oxidized iron
28 to 35 inches—gray silty clay; strong brown masses of oxidized iron

Substratum:
35 to 56 inches—yellowish brown silt loam

Soft bedrock:
56 to 59 inches—weathered bedrock

Cid

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

Subsoil:
6 to 18 inches—yellowish brown silty clay; yellowish red masses of oxidized iron
18 to 26 inches—yellowish brown silty clay; gray iron depletions and strong brown masses of oxidized iron
26 to 31 inches—brownish yellow silty clay loam; gray iron depletions and strong brown masses of oxidized iron

Soft bedrock:
31 to 35 inches—weathered bedrock

Hard bedrock:
35 inches—unweathered bedrock

Minor Components

Dissimilar components:
- Tatum soils, which are deep to hard bedrock; in upland landscape positions

Similar components:
- Georgeville soils, which are well drained and more red

Soil Properties and Qualities

Available water capacity: Lignum—moderate (about 8.0 inches); Cid—low (about 4.8 inches)
Slowest saturated hydraulic conductivity: Lignum—low (about 0.00 in/hr); Cid—moderately low (about 0.07 in/hr)
Depth class: Lignum—deep (40 to 60 inches); Cid—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Lignum—40 to 60 inches to bedrock (paralithic); Cid—20 to 40 inches to bedrock (paralithic) and 20 to 40 inches to bedrock (lithic)
Drainage class: Lignum—somewhat poorly drained; Cid—moderately well drained
Depth to seasonal water saturation: Lignum—about 10 to 30 inches; Cid—about 18 to 30 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Lignum—very high; Cid—low
Surface fragments: None
Parent material: Saprolite derived from phyllite and/or saprolite derived from slate

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn and soybeans

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

Suitability: Well suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The low strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

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

Local roads and streets

- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- Because of shrinking and swelling, the use of these soils as base material for local roads and streets is restricted.
- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: Lignum—2w; Cid—2e
Virginia soil management group: KK
Hydric soils: No

20C3—Madison clay loam, 8 to 15 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Madison and similar soils: Typically 88 percent, ranging from about 80 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown clay loam

Subsoil:
4 to 25 inches—red clay
25 to 40 inches—yellowish red clay loam
40 to 48 inches—yellowish red sandy clay loam; many strong brown mottles

Substratum:
48 to 60 inches—strong brown sandy loam

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Pacolet soils, which have less mica; in similar landscape positions
- Appling soils, which are less red and have less mica; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from mica schist

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.
- The high clay content restricts the rooting depth of crops.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.

Pastureland

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

Woodland

Suitability: Poorly suited to loblolly pine; moderately suited to northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

20D3—Madison clay loam, 15 to 25 percent slopes, severely eroded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Madison and similar soils: Typically 88 percent, ranging from about 80 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown clay loam

Subsoil:
4 to 25 inches—red clay
25 to 40 inches—yellowish red clay loam
40 to 48 inches—yellowish red sandy clay loam; many strong brown mottles

Substratum:
48 to 60 inches—strong brown sandy loam

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Pacolet soils, which have less mica; in similar landscape positions
- Appling soils, which are less red and have less mica; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from mica schist

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

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

Woodland

Suitability: Poorly suited to loblolly pine; moderately suited to northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- The low strength may cause structural damage to local roads and streets.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

21B—Mattaponi gravelly sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: High terrace
Position on the landform: Summit

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 10 inches—brown gravelly sandy loam

Subsurface layer:
10 to 14 inches—light yellowish brown sandy loam

Subsoil:
14 to 19 inches—brownish yellow clay
19 to 25 inches—brownish yellow clay; common strong brown mottles
25 to 35 inches—strong brown clay; common yellowish red mottles
35 to 60 inches—strong brown clay loam; red masses of oxidized iron and light gray iron depletions

Minor Components

Dissimilar components:
- Worsham soils, which are poorly drained; at the head of drains
- Emporia soils, which are well drained; in similar landscape positions

Similar components:
- Soils that have less clay; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.21 in/hr)
Depth class: Very deep (more than 60 inches)

Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 30 to 39 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Medium
Surface fragments: None
Parent material: Ancient clayey fluviomarine deposits

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn; well suited to soybeans and wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- Coarse textured soil layers increase the maintenance of haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

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

Local roads and streets

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

Interpretive Groups

Prime farmland: Not prime farmland

Land capability class: 2e
Virginia soil management group: R
Hydric soil: No

22C—Pacolet sandy loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Pacolet and similar soils: Typically 88 percent, ranging from about 86 to 96 percent

Typical Profile

Surface layer:
0 to 5 inches—brown sandy loam

Subsoil:
5 to 12 inches—yellowish red clay loam; common yellowish brown mottles
12 to 28 inches—red clay; common white mottles
28 to 38 inches—red clay loam; common white, common strong brown, and common light yellowish brown mottles

Substratum:
38 to 60 inches—red sandy loam; common white, common brownish yellow, and common strong brown mottles

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Madison soils, which have more mica; in similar landscape positions
- Wedowee soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and soybeans

- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

22D—Pacolet sandy loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 5 inches—brown sandy loam

Subsoil:
5 to 12 inches—yellowish red clay loam; common yellowish brown mottles
12 to 28 inches—red clay; common white mottles
28 to 38 inches—red clay loam; common white, common strong brown, and common light yellowish brown mottles

Substratum:
38 to 60 inches—red sandy loam; common white, common brownish yellow, and common strong brown mottles

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained; in similar landscape positions

Similar components:
- Madison soils, which have more mica; in similar landscape positions
- Wedowee soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 7.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

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

Woodland

Suitability: Poorly suited to loblolly pine and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.

- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.
- The low strength interferes with the construction of haul roads and log landings.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- The low strength is unfavorable for supporting heavy loads.
- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

23B—Rion sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 4 inches—brown sandy loam

Subsurface layer:
4 to 18 inches—yellowish brown sandy loam

Subsoil:
18 to 38 inches—strong brown sandy clay loam

Substratum:
38 to 60 inches—light yellowish brown sandy loam

Minor Components

Dissimilar components:
- Ashlar soils, which are moderately deep to hard bedrock; in similar landscape positions

Similar components:
- Wedowee soils, which have a higher clay content in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 6.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and soybeans; well suited to wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.

Pastureland

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

Woodland

Suitability: Well suited to southern red oak; moderately suited to loblolly pine, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites

- This soil is well suited to building sites.

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

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

23D—Rion sandy loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Rion and similar soils: Typically 88 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—brown sandy loam

Subsurface layer:
4 to 18 inches—yellowish brown sandy loam

Subsoil:
18 to 38 inches—strong brown sandy clay loam

Substratum:
38 to 60 inches—light yellowish brown sandy loam

Minor Components

Dissimilar components:
- Ashlar soils, which are moderately deep to hard bedrock; in similar landscape positions

Similar components:
- Wedowee soils, which have a higher clay content in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 6.8 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.64 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine, yellow-poplar, and sweetgum; well suited to southern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.

Building sites

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

Septic tank absorption fields

- The moderate permeability limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

24C—Rion-Ashlar sandy loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Rion and similar soils: Typically 60 percent, ranging from about 50 to 70 percent
Ashlar and similar soils: Typically 40 percent, ranging from about 30 to 50 percent

Typical Profile

Rion

Surface layer:
0 to 4 inches—brown sandy loam

Subsurface layer:
4 to 18 inches—yellowish brown sandy loam

Subsoil:
18 to 38 inches—strong brown sandy clay loam

Substratum:
38 to 60 inches—light yellowish brown sandy loam

Ashlar

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

Subsoil:
3 to 10 inches—light yellowish brown sandy loam
10 to 28 inches—pale brown gravelly sandy loam

Soft bedrock:
28 to 30 inches—soft bedrock

Hard bedrock:
30 inches—hard bedrock

Minor Components

Dissimilar components:
- Wedowee soils, which have a higher clay content in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Rion—moderate (about 6.8 inches); Ashlar—low (about 3.3 inches)
Slowest saturated hydraulic conductivity: Rion—moderately high (about 0.64 in/hr); Ashlar—high (about 1.98 in/hr)
Depth class: Rion—very deep (more than 60 inches); Ashlar—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Rion—more than 60 inches; Ashlar—20 to 40 inches to bedrock (lithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Rion—medium; Ashlar—low
Surface fragments: None
Parent material: Saprolite derived from granite and gneiss

Use and Management Considerations

Cropland

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

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Bedrock may interfere with the construction of haul roads and log landings.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 3e
Virginia soil management group: Rion—X; Ashlar—FF
Hydric soils: No

25A—Riverview loam, 0 to 2 percent slopes, occasionally flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plain in river valley
Position on the landform: Flood plain

Map Unit Composition

Riverview and similar soils: Typically 88 percent, ranging from about 82 to 92 percent

Typical Profile

Surface layer:
0 to 15 inches—dark yellowish brown loam

Subsoil:
15 to 30 inches—yellowish brown sandy loam

30 to 59 inches—dark yellowish brown sandy loam; black iron-manganese masses and yellowish brown masses of oxidized iron

Substratum:
59 to 75 inches—brownish yellow loamy sand; black iron-manganese masses, yellowish brown masses of oxidized iron, and light gray iron depletions
75 to 99 inches—light gray sandy loam; brownish yellow and strong brown masses of oxidized iron

Minor Components

Dissimilar components:
- Wehadkee soils, which are poorly drained; in similar landscape positions
- Chewacla soils, which are somewhat poorly drained; in similar landscape positions

Similar components:
- Soils that are moderately well drained; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.60 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: About 40 to more than 60 inches
Water table kind: Apparent
Flooding hazard: Occasional
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Loamy alluvium

Use and Management Considerations

Cropland

Suitability: Well suited to corn, soybeans, and wheat
- Excessive permeability increases the risk of ground-water contamination.
- Flooding may damage crops.

Pastureland

Suitability: Well suited
- Flooding may damage pastures.

Woodland

Suitability: Well suited to loblolly pine, yellow-poplar, and sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.

Building sites

- Flooding is a limitation affecting building site development.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.

Local roads and streets

- Flooding may damage local roads and streets.

Interpretive Groups

Prime farmland: Prime farmland if drained
Land capability class: 2w
Virginia soil management group: A
Hydric soil: No

26B—Santuc sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit, head of drain, and shoulder

Map Unit Composition

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

Typical Profile

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

Subsurface layer:
10 to 15 inches—brownish yellow sandy loam

Subsoil:
15 to 20 inches—yellowish brown sandy clay loam
20 to 45 inches—yellowish brown sandy clay loam; light gray iron depletions
45 to 60 inches—yellowish brown sandy loam; light gray iron depletions

Minor Components

Dissimilar components:
- Ashlar soils, which are moderately deep to hard bedrock

Similar components:
- Helena soils, which have a higher clay content in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 9.6 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Moderately well drained
Depth to seasonal water saturation: About 18 to 36 inches
Water table kind: Perched
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium

Surface fragments: None
Parent material: Loamy colluvium derived from granite and gneiss

Use and Management Considerations

Cropland

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

Pastureland

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

Woodland

Suitability: Well suited to loblolly pine and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites

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

Septic tank absorption fields

- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.
- The excessive permeability limits the proper treatment of the effluent from conventional septic systems and may lead to pollution of the water table.

Local roads and streets

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

Interpretive Groups

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

27B—Tatum-Badin complex, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Tatum and similar soils: Typically 85 percent, ranging from about 75 to 90 percent
Badin and similar soils: Typically 15 percent, ranging from about 10 to 25 percent

Typical Profile

Tatum

Surface layer:
0 to 3 inches—brown channery silt loam

Subsoil:
3 to 7 inches—yellowish brown channery silty clay loam
7 to 14 inches—yellowish red silty clay
14 to 22 inches—red silty clay; common reddish yellow mottles
22 to 31 inches—red channery silty clay; common reddish yellow mottles
31 to 50 inches—red channery silty clay loam; common red and common reddish yellow mottles

Soft bedrock:
50 to 60 inches—weathered bedrock

Badin

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

Subsurface layer:
7 to 13 inches—brownish yellow silt loam; common yellowish brown mottles

Subsoil:
13 to 23 inches—yellowish red silty clay
23 to 37 inches—strong brown channery silty clay

Soft bedrock:
37 inches—phyllite bedrock

Minor Components

Dissimilar components:
- Georgeville soils, which are very deep to hard bedrock; in similar landscape positions
- Lignum and Cid soils, which are wetter; in drainageways

Soil Properties and Qualities

Available water capacity: Moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Tatum—deep (40 to 60 inches); Badin—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Tatum—40 to 60 inches to bedrock (paralithic); Badin—20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from phyllite

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn and soybeans; well suited to wheat
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine; well suited to chestnut oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength may create unsafe conditions for log trucks.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

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

Septic tank absorption fields

- The restricted permeabilty limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

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

Interpretive Groups

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

27C—Tatum-Badin complex, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Tatum and similar soils: Typically 85 percent, ranging from about 75 to 90 percent
Badin and similar soils: Typically 15 percent, ranging from about 10 to 25 percent

Typical Profile

Tatum

Surface layer:
0 to 3 inches—brown channery silt loam

Subsoil:
3 to 7 inches—yellowish brown channery silty clay loam
7 to 14 inches—yellowish red silty clay
14 to 22 inches—red silty clay; common reddish yellow mottles
22 to 31 inches—red channery silty clay; common reddish yellow mottles
31 to 50 inches—red channery silty clay loam; common red and common reddish yellow mottles

Soft bedrock:
50 to 60 inches—weathered bedrock

Badin

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

Subsurface layer:
7 to 13 inches—brownish yellow silt loam; common yellowish brown mottles

Subsoil:
13 to 23 inches—yellowish red silty clay
23 to 37 inches—strong brown channery silty clay

Soft bedrock:
37 inches—phyllite bedrock

Minor Components

Dissimilar components:
- Georgeville soils, which are very deep to hard bedrock; in similar landscape positions
- Lignum and Cid soils, which are wetter; in drainageways

Soil Properties and Qualities

Available water capacity: Moderate (about 7.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Tatum—deep (40 to 60 inches); Badin—moderately deep (20 to 40 inches)
Depth to root-restrictive feature: Tatum—40 to 60 inches to bedrock (paralithic); Badin—20 to 40 inches to bedrock (paralithic)
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from phyllite

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine; well suited to chestnut oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The low strength interferes with the construction of haul roads and log landings.
- The low strength may create unsafe conditions for log trucks.
- The stickiness of the soil increases the difficulty of constructing haul roads and log landings when the soil is wet.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.

Building sites

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

Septic tank absorption fields

- The restricted permeabilty limits the absorption and proper treatment of the effluent from conventional septic systems.
- The slope limits the proper treatment of the effluent from conventional septic systems.

Local roads and streets

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

Interpretive Groups

Prime farmland: All areas are prime farmland
Land capability class: 3e
Virginia soil management group: X
Hydric soils: No

28B—Turbeville sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: High terrace
Position on the landform: Summit

Map Unit Composition

Turbeville and similar soils: Typically 85 percent, ranging from about 82 to 95 percent

Typical Profile

Surface layer:
0 to 8 inches—reddish brown loam

Subsoil:
8 to 25 inches—red clay
25 to 40 inches—reddish brown clay
40 to 61 inches—red clay

Minor Components

Dissimilar components:
- Santuc soils, which are moderately well drained

Similar components:
- Pacolet soils, which have a thinner solum; in similar landscape positions
- Appling soils, which are less red; in similar landscape positions
- Rion soils, which have less clay in the solum

Soil Properties and Qualities

Available water capacity: Moderate (about 8.7 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: Low
Surface fragments: None
Parent material: Old alluvium

Use and Management Considerations

Cropland

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

Pastureland

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

Woodland

Suitability: Well suited to loblolly pine, southern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope may restrict the use of some mechanical planting equipment.
- This soil is well suited to haul roads and log landings.
- This soil is well suited to equipment operations.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- Because of shrinking and swelling, the use of this soil as base material for local roads and streets is restricted.
- The low strength may cause structural damage to local roads and streets.

Interpretive Groups

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

29B—Wedowee gravelly sandy loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Summit and shoulder

Map Unit Composition

Wedowee and similar soils: Typically 88 percent, ranging from about 85 to 95 percent

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown gravelly sandy loam

Subsurface layer:
2 to 6 inches—yellowish brown gravelly sandy loam

Subsoil:
6 to 16 inches—strong brown sandy clay; yellowish brown mottles
16 to 23 inches—strong brown sandy clay; common white mottles
23 to 34 inches—brownish yellow and strong brown sandy clay loam; common white and common light yellowish brown mottles

Substratum:
34 to 61 inches—brownish yellow and strong brown sandy clay loam; common light yellowish brown and common white mottles

Minor Components

Dissimilar components:
- Ashlar soils, which are moderately deep to hard bedrock; in similar landscape positions

Similar components:
- Rion soils, which have a lower clay content in the solum; in similar landscape positions
- Pacolet soils, which are redder in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Saprolite derived from granite

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- Coarse textured soil layers may slough, thus reducing the efficiency of mechanical planting equipment.
- The coarseness of the soil material may reduce the traction of wheeled harvest equipment and log trucks.

Building sites

- This soil is well suited to building sites.

Septic tank absorption fields

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

Local roads and streets

- This soil is well suited to local roads and streets.

Interpretive Groups

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

29C—Wedowee gravelly sandy loam, 8 to 15 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

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

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown gravelly sandy loam

Subsurface layer:
2 to 6 inches—yellowish brown gravelly sandy loam

Subsoil:
6 to 16 inches—strong brown sandy clay; yellowish brown mottles
16 to 23 inches—strong brown sandy clay; common white mottles
23 to 34 inches—brownish yellow and strong brown sandy clay loam; common white and common light yellowish brown mottles

Substratum:
34 to 61 inches—brownish yellow and strong brown sandy clay loam; common light yellowish brown and common white mottles

Minor Components

Dissimilar components:
- Ashlar soils, which are moderately deep to hard bedrock; in similar landscape positions

Similar components:
- Rion soils, which have a lower clay content in the solum; in similar landscape positions
- Pacolet soils, which are redder in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None

Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite

Use and Management Considerations

Cropland

Suitability: Poorly suited to corn
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The high clay content restricts the rooting depth of crops.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and northern red oak
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

29D—Wedowee gravelly sandy loam, 15 to 25 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Side slope, nose slope, and backslope

Map Unit Composition

Wedowee and similar soils: Typically 85 percent, ranging from about 83 to 95 percent

Typical Profile

Surface layer:
0 to 2 inches—dark grayish brown gravelly sandy loam

Subsurface layer:
2 to 6 inches—yellowish brown gravelly sandy loam

Subsoil:
6 to 16 inches—strong brown sandy clay; yellowish brown mottles
16 to 23 inches—strong brown sandy clay; common white mottles
23 to 34 inches—brownish yellow and strong brown sandy clay loam; common white and common light yellowish brown mottles

Substratum:
34 to 61 inches—brownish yellow and strong brown sandy clay loam; common light yellowish brown and common white mottles

Minor Components

Dissimilar components:
- Ashlar soils, which are moderately deep to hard bedrock; in similar landscape positions

Similar components:
- Rion soils, which have a lower clay content in the solum; in similar landscape positions
- Pacolet soils, which are redder in the solum; in similar landscape positions

Soil Properties and Qualities

Available water capacity: Moderate (about 8.1 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Well drained
Depth to seasonal water saturation: More than 6 feet
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Medium
Surface fragments: None
Parent material: Saprolite derived from granite

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

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

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and northern red oak

- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- The slope poses safety hazards and creates a potential for erosion during the construction of haul roads and log landings.
- The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks and harvesting equipment.
- Because of the slope, the use of equipment for preparing sites for planting and seeding is restricted.
- The slope may restrict the use of some mechanical planting equipment.
- Rock fragments restrict the use of equipment during site preparation for planting or seeding.
- The low strength interferes with the construction of haul roads and log landings.

Building sites

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

Septic tank absorption fields

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

Local roads and streets

- Because of the slope, designing local roads and streets is difficult.

Interpretive Groups

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

30A—Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Flood plain

Map Unit Composition

Wehadkee and similar soils: Typically 88 percent, ranging from about 75 to 95 percent

Typical Profile

Surface layer:
0 to 4 inches—grayish brown silt loam

Subsoil:
4 to 16 inches—light brownish gray fine sandy loam; dark yellowish brown and reddish brown masses of oxidized iron
16 to 26 inches—light brownish gray sandy clay loam; brownish yellow masses of oxidized iron
26 to 48 inches—gray clay loam; yellowish brown and olive yellow masses of oxidized iron and dark grayish brown iron depletions
48 to 62 inches—gray clay loam; gray iron depletions and yellowish brown and olive yellow masses of oxidized iron

Substratum:
62 to 72 inches—gray sandy clay loam; yellowish brown and olive yellow masses of oxidized iron and gray iron depletions

Minor Components

Dissimilar components:
- Chewacla soils, which are somewhat poorly drained; in similar landscape positions
- Riverview soils, which are well drained; in similar landscape positions

Similar components:
- Soils that are moderately well drained; in similar landscape positions

Soil Properties and Qualities

Available water capacity: High (about 11.2 inches)
Slowest saturated hydraulic conductivity: Moderately high (about 0.57 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Poorly drained
Depth to seasonal water saturation: About 1 to 12 inches
Water table kind: Apparent
Flooding hazard: Frequent
Ponding hazard: None
Shrink-swell potential: Low
Runoff class: Low
Surface fragments: None
Parent material: Loamy alluvium

Use and Management Considerations

Cropland

- This soil is unsuited to cropland.

Pastureland

Suitability: Poorly suited
- Flooding may damage pastures.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland

Suitability: Poorly suited to yellow-poplar; moderately suited to sweetgum
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should focus on streamside management zones and stream crossings and should include general adherence to all applicable best management practices.
- Flooding may damage haul roads.
- Flooding restricts the safe use of roads by log trucks.
- Soil wetness may limit the use of log trucks.
- The low strength may create unsafe conditions for log trucks.

Building sites

- Flooding is a limitation affecting building site development.
- The seasonal high water table may restrict the period when excavations can be made.

Septic tank absorption fields

- Flooding is a limitation affecting septic tank absorption fields.
- The seasonal high water table greatly limits the absorption and proper treatment of the effluent from conventional septic systems.

Local roads and streets

- Flooding may damage local roads and streets.
- The seasonal high water table affects the ease of excavation and grading and reduces the bearing capacity of the soil.
- The low strength is unfavorable for supporting heavy loads.

Interpretive Groups

Prime farmland: Prime farmland if protected from flooding or not frequently flooded during the growing season
Land capability class: 6w
Virginia soil management group: MM
Hydric soil: Yes

31B—Worsham silt loam, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Interfluve
Position on the landform: Head of drain

Map Unit Composition

Worsham and similar soils: Typically 85 percent, ranging from about 82 to 92 percent

Typical Profile

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

Subsurface layer:
5 to 10 inches—light brownish gray silt loam

Subsoil:
10 to 22 inches—grayish brown clay; yellowish brown iron-manganese masses
22 to 35 inches—gray clay; yellowish brown iron-manganese masses
35 to 40 inches—gray clay; red and yellowish brown iron-manganese masses and light brownish gray iron depletions

Substratum:
40 to 60 inches—grayish brown clay loam

Minor Components

Dissimilar components:
- Appling, Cecil, and Mattaponi soils, which are better drained

Soil Properties and Qualities

Available water capacity: Moderate (about 8.0 inches)
Slowest saturated hydraulic conductivity: Low (about 0.00 in/hr)
Depth class: Very deep (more than 60 inches)
Depth to root-restrictive feature: More than 60 inches
Drainage class: Poorly drained

Depth to seasonal water saturation: About 0 to 12 inches
Water table kind: Apparent
Flooding hazard: None
Ponding hazard: None
Shrink-swell potential: Moderate
Runoff class: High
Surface fragments: None
Parent material: Slope alluvium

Use and Management Considerations

Cropland

Suitability: Moderately suited to corn; poorly suited to soybeans
- The rate of surface runoff, the erosion hazard, and the amount of nutrient loss are increased because of the slope.
- The risk of compaction increases when the soil is wet.
- Soil crusting results in a decrease in water infiltration and hinders the emergence of seedlings.
- The seasonal high water table restricts equipment operation, decreases the viability of crops, and interferes with the planting and harvesting of crops.

Pastureland

Suitability: Poorly suited
- The hazard of erosion, the rate of surface runoff, and the amount of nutrient loss are increased because of the slope.
- The seasonal high water table can affect equipment use, grazing patterns, and the viability of grass and legume species.
- Compaction may occur when the soil is wet.

Woodland

Suitability: Moderately suited to loblolly pine, southern red oak, and yellow-poplar
- Proper planning for timber harvesting is essential in order to minimize the potential negative impact to soil and water quality. A timber harvest plan should include general adherence to all applicable best management practices.
- Soil wetness may limit the use of log trucks.
- The slope may restrict the use of some mechanical planting equipment.
- The stickiness of the soil reduces the efficiency of mechanical planting equipment.
- The stickiness of the soil restricts the use of equipment for site preparation to the drier periods.
- This soil is well suited to haul roads and log landings.

Building sites

- The seasonal high water table may restrict the period when excavations can be made.
- The high content of clay in the subsurface layer increases the difficulty of digging, filling, and compacting the soil material in shallow excavations.

Septic tank absorption fields

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

Local roads and streets

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

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

Interpretive Groups

Prime farmland: Prime farmland if drained
Land capability class: 4w
Virginia soil management group: HH
Hydric soil: Yes

DAM—Dam

This map unit is in the Southern Piedmont Major Land Resource Area (MLRA 136). It consists of an earthen and concrete, human-created structure that impounds waters of the Great Creek watershed for flood protection and water supply. Onsite investigation is needed to determine the suitability of any area of this unit for specific uses. No interpretive groups are assigned to this map unit.

UdC—Udorthents, loamy, 2 to 8 percent slopes

Setting

Major land resource area: Southern Piedmont (MLRA 136)
Landform: Piedmont uplands
Position on the landform: Ridges and side slopes

Map Unit Composition

Udorthents and similar soils: Typically 100 percent, ranging from about 75 to 100 percent

Definition

This map unit consists of areas of roads, commercial buildings, industries, schools, churches, parking lots, streets, and shopping centers.

Use and Management Considerations

Onsite investigation is needed to determine the suitability of any area for specific uses.

Interpretive Groups

Prime farmland: Not prime farmland
Land capability class: 7e
Virginia soil management group: None assigned
Hydric soils: No

W—Water

This map unit is in the Southern Piedmont Major Land Resource Area (MLRA 136). It consists of ponds, lakes, creeks, rivers, and reservoirs. No interpretive groups are assigned to this map unit.

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, the system of land capability classification used by the Natural Resources Conservation Service is explained, and Virginia soil management groups are described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Yields per Acre

Table 5 shows the average yields per acre of crops and pasture in this survey area that can be expected 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 and Virginia soil management group of map units in the survey area also are shown in the table.

The yields are based on VALUES—the Virginia Agronomic Land Use Evaluation System (Virginia Polytechnic Institute and State University, 1994). They 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.

Realistic yield goals can be maintained over a long-term basis through proper nutrient management and other soil amendments such as lime. Applications of nitrogen and phosphorus from organic and inorganic forms should be done according to approved nutrient management practices and regulations.

Pasture yields are expressed in terms of animal unit months. An animal unit month (AUM) is the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in 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 rangeland, 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, rangeland, 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, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e, w, s,* or *c,* to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c,* used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, wildlife habitat, or recreation.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of the soils in this survey area is given in the section “Detailed Soil Map Units” and in the yields table.

Virginia Soil Management Groups

The Virginia Agronomic Land Use Evaluation System (VALUES) is a system that ranks soils for management and productivity (Virginia Polytechnic Institute and State University, 1994). VALUES places each soil series in Virginia into one of 43 management groups. The format of the management groups, A through QQ, include the following soil characteristics—regional occurrence; parent material; landscape position or influence; solum thickness; dominant profile features, such as texture; available water capacity for plants; and internal soil drainage. Yields that are both economically and environmentally feasible were assigned to each management group, based on yields of field trial crop data and research. The following paragraphs describe the soil management groups in Brunswick County.

Group A. The soils in this group occur over several physiographic provinces, formed in alluvial parent materials, and are on gently sloping landscapes of flood plains or stream terraces whose watersheds originate west of the Blue Ridge. These soils are deep, are medium textured throughout, have a high water-supplying capacity, and are well drained.

Group G. The soils in this group occur in the Piedmont region and westward and formed in locally transported, medium textured sediments of either colluvial or alluvial origin that overlay a wide range of residual materials. These soils are located in landscape positions ranging from footslopes and toeslopes to the heads of drainageways, depressions, and narrow upland drainageways. They are deep and have silty to loamy upper subsoils underlain with clayey to stony materials. They have a moderately high water-supplying capacity and are moderately well drained or somewhat poorly drained.

Group I. The soils of this group formed from alluvium along flood plains in the Coastal Plain and Piedmont provinces. These soils are somewhat prone to flooding. They are deep, have predominantly clay loam subsurface horizons, have a moderately high water-supplying capacity, and are somewhat poorly drained.

Group O. The soils of this group formed from transported materials ranging from mountain colluvium to old alluvium on dissected uplands of the Piedmont and mountainous regions to old elevated river terrace deposits. These soils range from deep to shallow, have very dark red clayey subsurface horizons, may have significant coarse fragments in some areas, have a moderate water-supplying capacity, and are well drained.

Group R. The soils of this group formed from marine sediments in the Coastal Plain on gently sloping uplands. These soils are very deep, have sandy loam surface layers and reddish yellow clay loam to clay subsurface layers, and may have redoximorphic features in the lower part of the subsoil. They have a moderate water-supplying capacity and are moderately well drained or well drained.

Group V. The soils of this group are on upland landscapes in the Piedmont, are moderately deep, and formed from saprolites derived from a variety of parent materials ranging from slates to granites, gneisses, schists, and more basic granitic rocks. These soils have clayey subsurface horizons, have a moderate water-supplying capacity, and are well drained.

Group X. The soils of this group formed from a variety of residual materials, including slates, granites, gneisses, and schists. These soils have clayey subsurface horizons, have coarse fragments or gravel in some areas, have a moderate water-supplying capacity, and are well drained or moderately well drained.

Group Y. The soils of this group represent upland landscapes in both the mountainous and Piedmont regions. These soils range from shallow to moderately deep and formed from the residuum of weathered limestones, shales, or other carbonate-influenced rocks. They have clayey subsurface horizons, have coarse fragments in some areas, and have a moderate to low water-supplying capacity where shallow to bedrock. They are mostly well drained.

Group FF. The soils of this group extend across the Piedmont to the mountainous provinces and formed in residual parent materials ranging from sandstone, shales, and slates to loamy granitic saprolites and mountain colluvium. These soils are on steeply dissected uplands and mountain side slopes. They are moderately shallow and mostly have loamy-skeletal subsurface horizons that may contain 80 percent, or more, coarse fragments. As a result, the water-supplying capacity of the soils is low or very low. The soils are well drained or moderately well drained.

Group HH. The soils of this group formed in loamy alluvial sediments. These soils are on flood plains. They are very deep, have fine-loamy or clayey subsurface layers, and have a moderate water-supplying capacity. The soils are moderately well drained or somewhat poorly drained.

Group JJ. The soils of this group are from either the Piedmont or mountainous regions and formed from a wide variety of residual parent materials ranging from sandstones, shales, and limestones to Triassic materials, phillites, and granite saprolites or schists. These soils are shallow, predominantly have loamy-skeletal textures throughout, and range from 30 to 70 percent coarse fragments. They have a very low water-supplying capacity and are well drained.

Group KK. The soils of this group formed from a variety of residual materials, including Triassic sediments, residuum from basic rocks, and other clayey sediments. These soils are moderately deep, have clayey textured subsurface horizons, and commonly have large components of high shrink-swell clays. They have a moderate water-supplying capacity and are moderately well drained or somewhat poorly drained.

Group MM. The soils of this group are located on flood plains in the Coastal Plain, formed from loamy sediments, flood frequently, have a moderate to high water-supplying capacity, and are poorly drained.

The management groups for the map units in the survey area are given in the section “Detailed Soil Map Units” and in table 5.

Prime Farmland and Other Important Farmlands

Table 6 lists the map units in the survey area that are considered prime farmland or 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.

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.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique 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.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Hydric Soils

In this section the map unit components that are rated as hydric soils in the survey area are listed. 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).

9A Chewacla and Wehadkee soils, 0 to 2 percent slopes, frequently flooded (only the Wehadkee soil)
30A Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded
31B Worsham silt loam, 2 to 8 percent slopes

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.

2B Appling-Mattaponi complex, 2 to 8 percent slopes
8A Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded
10B Emporia sandy loam, 2 to 8 percent slopes
11B Enon loam, 2 to 8 percent slopes
12B Fluvanna-Lignum complex, 2 to 8 percent slopes
16B Helena sandy loam, 2 to 8 percent slopes
18B Iredell gravelly sandy loam, 2 to 8 percent slopes
19B Lignum-Cid complex, 2 to 8 percent slopes
21B Mattaponi gravelly sandy loam, 2 to 8 percent slopes
25A Riverview loam, 0 to 2 percent slopes, occasionally flooded
26B Santuc sandy loam, 2 to 8 percent slopes
29B Wedowee gravelly sandy loam, 2 to 8 percent slopes

Agricultural Waste Management

Soil properties are important considerations in areas where soils are used as sites for the treatment and disposal of organic waste and wastewater. Selection of soils with properties that favor waste management can help to prevent environmental damage.

Table 7, parts I, II, and III, show the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of 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 table are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

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

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

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. Manure is the excrement of livestock and poultry, and food-processing waste is damaged fruit and vegetables and the peelings, stems, leaves, pits, and soil particles removed in food preparation. The manure and food-processing waste are either solid, slurry, or liquid. Their nitrogen content varies. A high content of nitrogen limits the application rate. Toxic or otherwise dangerous wastes, such as those mixed with the lye used in food processing, are not considered in the ratings.

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include saturated hydraulic conductivity (K_{sat}), depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, salinity, and bulk density. The wind erodibility group, the soil erosion factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Application of sewage sludge not only disposes of waste material but also can improve crop production by increasing the supply of nutrients in the soils where the material is applied. In the context of this table, sewage sludge is the residual product of the treatment of municipal sewage. The solid component consists mainly of cell mass, primarily bacteria cells that developed during secondary treatment and have incorporated soluble organics into their own bodies. The sludge has small amounts of sand, silt, and other solid debris. The content of nitrogen varies. Some sludge has constituents that are toxic to plants or hazardous to the food chain, such as heavy metals and exotic organic compounds, and should be analyzed chemically prior to use.

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include saturated hydraulic conductivity (K_{sat}), depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a cemented pan, available water capacity, reaction, salinity, and bulk density. The wind erodibility group, the soil erosion factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge. Permanently frozen soils are unsuitable for waste treatment.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, saturated hydraulic conductivity (K_{sat}), slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film.

Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, saturated hydraulic conductivity (K_{sat}), depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

Rapid infiltration of wastewater is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a cemented pan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Saturated hydraulic conductivity (K_{sat}) and reaction affect performance. Permanently frozen soils are unsuitable for waste treatment.

Slow rate treatment of wastewater is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, saturated hydraulic conductivity (K_{sat}), depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, salinity, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erosion factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste. Permanently frozen soils are unsuitable for waste treatment.

Forestland Productivity and Management

The tables described in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forestland management.

Forestland Productivity

In table 8, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the “National Forestry Manual,” 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

In table 9, parts I through V, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

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

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

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

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the “National Forestry Manual,” 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, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

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

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

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

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

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

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

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

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

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

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

Recreational Development

In table 10, parts I and II, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

The ratings in the table are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in this table can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, saturated hydraulic conductivity (K_{sat}), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, saturated hydraulic conductivity (K_{sat}), 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 (K_{sat}), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, saturated hydraulic conductivity (K_{sat}), 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 (K_{sat}), and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, saturated hydraulic conductivity (K_{sat}), and toxic substances in the soil.

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

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

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

Engineering

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

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet.

Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

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

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

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, saturated hydraulic conductivity (K_{sat}), corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. Table 11, parts I and II, show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

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

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

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

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

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

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

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

and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 12, parts I and II, show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches or between a depth of 24 inches and a restrictive layer 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 (K_{sat}), depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

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

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, saturated hydraulic conductivity (K_{sat}), depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Saturated hydraulic conductivity (K_{sat}) 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 K_{sat} rate of more than 14 micrometers per second are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

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

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

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

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

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

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

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

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

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

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

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

Construction Materials

Table 13, parts I and II, give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 13, part I, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

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

In table 13, part II, the rating class terms are *good, fair,* and *poor*. The features that limit the soils as sources of reclamation material, roadfill, and topsoil are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of these materials. The lower the number, the greater the limitation.

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

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

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

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

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

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

Water Management

Table 14 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the saturated hydraulic conductivity (K_{sat}) 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 5 or 6 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

Table 15 gives the engineering classifications and the range of engineering properties for the layers of each soil in the survey area.

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

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

Classification of the soils is determined according to the Unified soil classification system (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 designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

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

Physical Soil Properties

Table 16 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

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 content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (K_{sat}), 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 (K_{sat}) 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 (K_{sat}) 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 (K_{sat}). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

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

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Soil Properties

Table 17 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

Cation-exchange capacity is the total amount of extractable 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. 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 cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

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

Water Features

Table 18 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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

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

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

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 19 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (K_{sat}), 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. Table 20 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

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

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

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

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineralogy class, cation-exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine, mixed, active, thermic Ultic Hapludalfs.

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (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.

Appling Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Granite gneiss residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 15 percent

Associated Soils

- Cecil soils, which have redder subsoils
- Helena soils, which are moderately well drained
- Wedowee soils, which have thinner clay horizons

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Appling-Mattaponi complex, 2 to 8 percent slopes; located about 1,000 feet west of VA644 on a farm road, about 500 feet east of a farm pond and 2/3 mile north of VA652; Danieltown, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 53 minutes 1.80 seconds N. and long. 77 degrees 56 minutes 23.00 seconds W.

Ap—0 to 12 inches; brown (10YR 5/3) sandy loam; fine prominent yellowish red (5YR 5/8) mottles; moderate medium granular structure; very friable, nonsticky, nonplastic; many very fine and fine and few medium roots; few fine mica flakes; 3 percent subangular quartz gravel; slightly acid; clear smooth boundary.

Bt1—12 to 18 inches; brownish yellow (10YR 6/6) clay loam; common medium prominent yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; firm, slightly sticky, moderately plastic; many very fine, fine, and medium roots; few faint clay films on surfaces along pores; few fine mica flakes; strongly acid; clear wavy boundary.

Bt2—18 to 29 inches; strong brown (7.5YR 5/8) clay; common medium prominent yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; firm, slightly sticky, moderately plastic; many very fine, fine, and medium roots; few faint clay films on all faces of peds; few fine mica flakes; very strongly acid; clear wavy boundary.

Bt3—29 to 37 inches; strong brown (7.5YR 5/8) clay; common medium prominent light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; firm, slightly sticky, moderately plastic; few very fine, fine, and medium roots; common distinct clay films on all faces of peds; few fine mica flakes; very strongly acid; clear wavy boundary.

BC—37 to 51 inches; reddish yellow (5YR 6/8) and brownish yellow (10YR 6/6) clay loam; common medium prominent reddish yellow (5YR 6/8) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine, fine, and medium roots; very few faint clay films on vertical faces of peds; few fine mica flakes; very strongly acid; clear wavy boundary.

C—51 to 61 inches; brownish yellow (10YR 6/6) and yellowish red (5YR 5/8) sandy clay loam; common medium prominent yellowish red (5YR 5/8) mottles; massive; friable, slightly sticky, slightly plastic; few fine mica flakes; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 15 percent throughout the profile
Soil reaction: Very strongly acid or strongly acid throughout the profile; typically moderately acid or slightly acid in the upper part in limed areas
Mica flakes: Few or common in the solum and C horizon

A or Ap horizon:
Color—hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 6
Texture—sandy loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 5YR or 2.5Y and value and chroma of 4 to 6
Texture—sandy loam or fine sandy loam in the fine-earth fraction

BA horizon or BE horizon (if it occurs):
Color—hue of 5YR to 10YR, value of 5 or 6, and chroma of 3 to 8
Texture—sandy clay loam or sandy loam in the fine-earth fraction

Bt horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8; pedons with hue of 5YR have evident patterns of mottling in a subhorizon of the Bt horizon
Mottles—in most pedons in shades of red, brown, or yellow
Texture—clay loam or clay in the fine-earth fraction

BC horizon:
Color—horizon has hue of 5YR to 2.5Y, value of 4 or 7, and chroma of 4 to 8 or is mottled in these colors
Mottles—in most pedons in shades of red, brown, or yellow
Texture—sandy clay loam, clay loam, or sandy clay in the fine-earth fraction

C horizon:
Color—horizon has hue of 5YR to 2.5Y, value of 4 to 7, and chroma of 4 to 8 or is mottled in these colors
Mottles—in most pedons in shades of red, brown, or yellow
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction

Ashlar Series

Physiographic province: Southern Piedmont, thermic
Landform: Side slope of interfluve on upland
Parent material: Granite residuum
Drainage class: Somewhat excessively drained
Slowest saturated hydraulic conductivity: High
Depth class: Moderately deep
Slope range: 8 to 45 percent

Associated Soils

- Areas of rock outcrops

- Rion soils, which are greater than 60 inches to bedrock
- Wedowee soils, which are greater than 60 inches to bedrock

Taxonomic Classification

Coarse-loamy, mixed, semiactive, thermic Typic Dystrudepts

Typical Pedon

Ashlar-Rock outcrop complex, 15 to 25 percent slopes; located about 1.8 miles west of the intersection of VA46 and VA711, about 2.0 miles northwest of the intersection of VA617 and VA46, about 6.2 miles northwest of Danieltown; Kenbridge East, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 57 minutes 17.00 seconds N. and long. 78 degrees 0 minutes 17.00 seconds W.

A—0 to 3 inches; pale brown (10YR 6/3) sandy loam; moderate medium granular structure; very friable; many very fine, fine, and medium and few coarse roots; few fine mica flakes; 5 percent angular granite gravel; very strongly acid; clear wavy boundary.

Bw1—3 to 10 inches; light yellowish brown (10YR 6/4) sandy loam; weak medium subangular blocky structure; friable; many very fine, fine, and medium and few coarse roots; few fine mica flakes; 12 percent angular granite gravel; very strongly acid; gradual wavy boundary.

Bw2—10 to 17 inches; pale brown (10YR 6/3) gravelly sandy loam; weak medium subangular blocky structure; friable; few very fine, fine, and medium roots; few fine mica flakes; 17 percent angular granite gravel; very strongly acid; gradual wavy boundary.

Bw3—17 to 28 inches; pale brown (10YR 6/3) gravelly sandy loam; weak medium subangular blocky structure; friable; few very fine, fine, and medium roots; few fine mica flakes; 22 percent angular granite gravel; very strongly acid; clear wavy boundary.

Cr—28 to 30 inches; multicolored, strongly weathered granite that crushes easily to sandy loam; diffuse wavy boundary.

R—30 inches; hard granite.

Range in Characteristics

Depth to bedrock: 20 to 40 inches

Rock fragments: 0 to 15 percent in the A horizon and 0 to 30 percent in the B and C horizons

Mica flakes: Few or common in the solum and C horizon

Reaction: Very strongly acid in the A and E horizons and strongly acid to extremely acid in the B and C horizons

A or Ap horizon:

Color—hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 2 to 4

Texture—loamy coarse sand, coarse sandy loam, sandy loam, or fine sandy loam in the fine-earth fraction

E horizon (if it occurs):

Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4

Texture—loamy coarse sand, coarse sandy loam, sandy loam, or fine sandy loam in the fine-earth fraction

Bw horizon:

Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8

Texture—sandy loam, fine sandy loam, or coarse sandy loam in the fine-earth fraction; a few sand grains are coated and weakly bridged with clay in some pedons

C horizon (if it occurs):
Color—hue of 5YR to 2.5Y, value of 3 to 8, and chroma of 1 to 8
Texture—fine sandy loam, sandy loam, or coarse sandy loam in the fine-earth fraction

Cr horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 1 to 8
Texture—very strongly weathered to strongly weathered saprolite that crushes to sandy loam or fine sandy loam

Badin Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Phyllite residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Moderately deep
Slope range: 2 to 35 percent

Associated Soils

- Cid soils, which are moderately well drained
- Goldston soils, which have soft bedrock within a depth of 20 inches
- Tatum soils, which have soft bedrock within a depth of 40 to 60 inches

Taxonomic Classification

Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Badin-Goldston complex, 8 to 15 percent slopes; located about 215 feet east of a logging road, 0.7 mile north of the intersection of VA603 and the logging road, 1.1 miles south of Ante; Ante, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 38 minutes 56.91 seconds N. and long. 77 degrees 43 minutes 23.00 seconds W.

Ap—0 to 7 inches; yellowish brown (10YR 5/6) silt loam; weak fine granular structure; very friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; 8 percent angular phyllite channers; very strongly acid; clear wavy boundary.

E—7 to 13 inches; brownish yellow (10YR 6/8) silt loam; common fine faint yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine and fine and few medium and coarse roots; 6 percent angular phyllite channers; very strongly acid; clear wavy boundary.

Bt1—13 to 23 inches; yellowish red (5YR 5/8) silty clay; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine, medium, and coarse roots; very few distinct strong brown (7.5YR 4/6) clay films on all faces of peds; 5 percent angular phyllite channers; very strongly acid; clear wavy boundary.

Bt2—23 to 37 inches; strong brown (7.5YR 5/8) channery silty clay; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine, medium, and coarse roots; very few distinct strong brown (7.5YR 4/6) clay films on all faces of peds; 20 percent angular phyllite channers; very strongly acid; clear irregular boundary.

Cr—37 inches; phyllite soft bedrock.

Range in Characteristics

Depth to soft bedrock: 20 to 40 inches

Depth to hard bedrock: 40 inches or more
Rock fragment content: 0 to 8 percent in the A horizon; 5 to 35 percent in the E, BE, BA, and Bt horizons; 20 to 40 percent in the BC and C horizons
Reaction: Very strongly acid or strongly acid

Ap horizon:
Color—hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 8
Texture—silt loam or loam

A horizon (if it occurs):
Color—hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 8
Texture—silt loam

E horizon:
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 2 to 8
Texture—silt loam or loam in the fine-earth fraction

BE or BA horizon (if it occurs):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 2 to 6
Texture—silt loam, loam, or silty clay loam in the fine-earth fraction

Bt horizons:
Color—hue of 7.5YR to 2.5YR, value of 4 to 6, and chroma of 4 to 8
Texture—clay, clay loam, silty clay, or silty clay loam in the fine-earth fraction

BC horizon (if it occurs):
Color—hue of 7.5YR to 2.5YR, value of 4 to 6, and chroma of 4 to 8
Texture—silty clay loam, clay loam, or silt loam in the fine-earth fraction

C horizon (if it occurs):
Color—hue of 7.5YR to 2.5YR, value of 4 to 6, and chroma of 3 to 8
Texture—silt loam saprolite in the fine-earth fraction

Cr horizon:
Bedrock—moderately fractured, highly weathered schist or phyllite

R horizon (if it occurs):
Bedrock—slightly fractured, relatively unweathered schist or phyllite

Cecil Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Granite gneiss residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 15 percent

Associated Soils

- Appling soils, which have a yellower subsoil
- Helena soils, which have a perched water table
- Mattaponi soils, which have a perched water table
- Pacolet soils, which have thinner clay horizons

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Cecil sandy loam, 2 to 8 percent slopes; located at the intersection of VA712 and VA755, about 2,000 feet east of intersection and 500 feet south of VA755; Lawrenceville, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 47 minutes 46.00 seconds N. and long. 77 degrees 45 minutes 40.90 seconds W.

Ap—0 to 10 inches; yellowish brown (10YR 5/6) sandy loam; weak very fine granular structure; friable, nonsticky, nonplastic; common very fine and fine roots; few fine mica flakes; moderately acid; clear smooth boundary.

BA—10 to 16 inches; strong brown (7.5YR 4/6) sandy clay loam; weak medium granular structure; friable, slightly sticky, slightly plastic; common very fine and fine roots; few fine mica flakes; strongly acid; clear wavy boundary.

Bt1—16 to 25 inches; red (2.5YR 5/8) clay loam; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine and fine roots; distinct continuous clay films on all faces of peds; few fine mica flakes; very strongly acid; gradual wavy boundary.

Bt2—25 to 35 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; distinct continuous clay films on all faces of peds; common fine mica flakes; very strongly acid; gradual smooth boundary.

Bt3—35 to 46 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; distinct continuous clay films on all faces of peds; common fine mica flakes; very strongly acid; gradual smooth boundary.

Bt4—46 to 50 inches; red (2.5YR 4/6) clay; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; distinct continuous clay films on all faces of peds; many fine mica flakes; very strongly acid; gradual smooth boundary.

BC—50 to 65 inches; red (2.5YR 4/8) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many fine mica flakes; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 10 percent throughout the profile
Soil reaction: Very strongly acid to moderately acid throughout the profile; typically moderately acid or slightly acid in the upper part in limed areas
Mica flakes: Few or common in the solum and few to many in the C horizon

A or Ap horizon:
Color—hue of 2.5YR to 10YR, value of 3 to 5, and chroma of 2 to 6
Texture—sandy loam or sandy clay loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

BA or BE horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 3 to 8
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

Bt horizon:
Color—hue of 10R to 5YR, value of 4 or 5, and chroma of 6 to 8; pedons with hue of 5YR lack evident patterns of mottling
Mottles—in shades of shades of red, brown, or yellow
Texture—clay loam or clay in the fine-earth fraction

BC horizon:
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8
Mottles—in shades of red, brown, or yellow
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

C horizon (if it occurs):
Color—horizon has hue of 10R to 10YR, value of 4 to 6, and chroma of 4 to 8 or is variegated in shades of yellow, red, brown, black, or white
Mottles—in shades of red, brown, or yellow
Texture—sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction

Chewacla Series

Physiographic province: Southern Piedmont, thermic
Landform: Flood plain
Parent material: Recent alluvium
Drainage class: Somewhat poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Riverview soils, which are well drained
- Wedhadkee soils, which are poorly drained

Taxonomic Classification

Fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts

Typical Pedon

Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded; located about 1,000 feet southwest of the intersection of US58 and VA644, about 500 feet north of the Meherrin River, in a pasture; White Plains, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 43 minutes 8.00 seconds N. and long. 77 degrees 55 minutes 30.00 seconds W.

Ap—0 to 8 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; friable; few very fine and fine roots; moderately acid; clear smooth boundary.
AB—8 to 15 inches; yellowish brown (10YR 5/4) silt loam; few fine distinct yellowish brown (10YR 5/6) mottles; weak fine granular structure; friable; few very fine and fine roots; moderately acid; clear wavy boundary.
Bw1—15 to 30 inches; yellowish brown (10YR 5/6) silt loam; common medium distinct light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable; few very fine and fine roots; common fine faint light brownish gray (10YR 6/2) clay depletions; moderately acid; gradual smooth boundary.
Bw2—30 to 36 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; common medium distinct light brownish gray (10YR 6/2) clay depletions; strongly acid; gradual wavy boundary.
Bw3—36 to 42 inches; light yellowish brown (10YR 6/4) silty clay loam; weak medium subangular blocky structure; friable; common medium distinct light gray (10YR 7/2) clay depletions; strongly acid; gradual wavy boundary.
Bw4—42 to 48 inches; light yellowish brown (10YR 6/4) silty clay loam; weak fine subangular blocky structure; friable; common medium prominent yellowish brown

(10YR 5/6) iron-manganese concretions and many medium distinct light gray (10YR 7/2) clay depletions; strongly acid; gradual wavy boundary.

Bg—48 to 55 inches; light brownish gray (10YR 6/2) silty clay loam; common medium distinct yellowish brown (10YR 5/8) mottles; weak fine subangular blocky structure; friable; common fine prominent yellowish brown (10YR 5/6) iron-manganese concretions; very strongly acid; gradual wavy boundary.

Cg—55 to 62 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; common medium prominent yellowish brown (10YR 5/6) iron-manganese concretions; very strongly acid.

Range in Characteristics

Depth to seasonal high water table: 6 to 18 inches
Rock fragments: 0 to 20 percent throughout the profile
Mica flakes: Few or common in the solum and C horizon
Reaction: Very strongly acid to slightly acid

Ap or A horizon:
Color—hue of 5YR to 2.5Y, value of 3 to 5, and chroma of 1 to 6; where value is 3, horizon is less than 6 inches thick
Texture—loam or silt loam in the fine-earth fraction

AB or BA horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8
Texture—loam, silt loam, sandy clay loam, clay loam, or silty clay loam in the fine-earth fraction

Bw horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8
Texture—silt loam, loam, silty clay loam, sandy clay loam, or clay loam in the fine-earth fraction
Redoximorphic features (if they occur)—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, olive, or gray

Bg horizon:
Color—horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2 or is neutral in hue
Texture—silty clay loam, silt loam, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction
Redoximorphic features (if they occur)—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, olive, or gray

Cg horizon:
Color—horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2 or is neutral in hue and has value of 4 to 8
Texture (fine-earth fraction)—sandy clay loam, sandy loam, fine sandy loam, loam, clay loam, silt loam, or silty clay loam in the fine-earth fraction; below a depth of 40 inches, texture is commonly variable, ranging from extremely gravelly sand to clay
Redoximorphic features—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, olive, or gray

Cid Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Slate residuum

Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Moderately deep
Slope range: 2 to 8 percent

Associated Soils

- Badin soils, which are well drained
- Goldston soils, which are shallow to bedrock and better drained
- Lignum soils, which are deeper to bedrock and are somewhat poorly drained
- Tatum soils, which are well drained and deeper to bedrock

Taxonomic Classification

Fine, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Lignum-Cid complex, 2 to 8 percent slopes; located about 500 feet east of the junction of US96 and VA725, about 150 feet north of US96 in a wooded area, west of Virgilina; Virgilina, Virginia 7.5 minute topographic quadrangle in Halifax County, Virginia; lat. 36 degrees 32 minutes 48.50 seconds N. and long. 78 degrees 49 minutes 4.70 seconds W.

Ap—0 to 6 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable, slightly sticky, nonplastic; many fine and very fine roots; 3 percent angular quartz gravel; strongly acid; abrupt smooth boundary.

Bt1—6 to 18 inches; yellowish brown (10YR 5/8) silty clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine and very fine roots; few very fine moderate-continuity tubular pores; very few faint continuous clay films on vertical faces of peds; common medium faint irregular yellowish red (5YR 5/8) masses of oxidized iron with diffuse boundaries in matrix; very strongly acid; gradual wavy boundary.

Bt2—18 to 26 inches; yellowish brown (10YR 5/6) silty clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; few very fine moderate-continuity tubular pores; very few faint continuous clay films on vertical faces of peds; common fine prominent irregular gray (10YR 6/1) iron depletions with diffuse boundaries in matrix and common fine faint irregular strong brown (7.5YR 5/6) masses of oxidized iron with diffuse boundaries in matrix; very strongly acid; gradual wavy boundary.

BCt—26 to 31 inches; brownish yellow (10YR 6/6) silty clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; common fine roots; few very fine moderate-continuity tubular pores; very few faint continuous clay films on vertical faces of peds; common medium prominent irregular gray (10YR 6/1) iron depletions with diffuse boundaries in matrix and common medium faint irregular strong brown (7.5YR 5/6) masses of oxidized iron with diffuse boundaries in matrix; very strongly acid; gradual wavy boundary.

Cr—31 to 35 inches; highly weathered slate.

R—35 inches; unweathered hard slate.

Range in Characteristics

Depth to hard bedrock: 20 to 40 inches
Depth to seasonal high water table: 18 to 30 inches
Rock fragment content: 0 to 13 percent throughout the profile
Reaction: Very strongly acid or strongly acid

A or Ap horizon:
Color—hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 to 4
Texture—silt loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 10YR to 5Y, value of 6 or 7, and chroma of 2 to 4
Texture—silt loam or loam in the fine-earth fraction

BA or BE horizon (if it occurs):
Color—hue of 10YR to 5Y, value of 6 or 7, and chroma of 3 to 8
Texture—silt loam, loam, or silty clay loam in the fine-earth fraction

Bt horizon:
Color—hue of 7.5YR to 5Y, value of 5 to 7, and chroma of 3 to 8
Texture—clay, silty clay, or silty clay loam in the fine-earth fraction
Reoximorphic features—accumulations in shades of red, brown, or yellow may be present and depletions with chroma of 2 or less are within 24 inches of the upper boundary of horizon

BC or BCt horizon:
Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 3 to 8
Texture—silty clay loam, silty clay, clay loam, or clay in the fine-earth fraction
Redoximorphic features—accumulations in shades of red, brown, or yellow and depletions with chroma of 2 or less are in most pedons

C horizon (if it occurs):
Color—hue of 10YR to 5Y, value of 5 to 7, and chroma of 3 to 8
Texture—silty clay loam, silty clay, clay loam, or clay in the fine-earth fraction
Redoximorphic features—accumulations in shades of red, brown, or yellow and depletions with chroma of 2 or less are in some pedons

Cr horizon:
Bedrock—moderately fractured, highly weathered slate

R horizon:
Bedrock—slightly fractured, unweathered slate

Emporia Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland fluviomarine terrace
Parent material: Loamy fluviomarine deposits
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Low
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Appling soils, which lack a seasonal high water table
- Mattaponi soils, which have clayey subsoils

Taxonomic Classification

Fine-loamy, siliceous, subactive, thermic Typic Hapludults

Typical Pedon

Emporia sandy loam, 2 to 8 percent slopes; located about 50 feet west of VA46, about 0.4 mile north of the intersection of VA46 and VA626, about 1.2 miles south-southeast of Valentines; Valentines, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 34 minutes 21.00 seconds N. and long. 77 degrees 49 minutes 19.00 seconds W.

Ap—0 to 8 inches; brown (10YR 5/3) sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; few very fine, fine, and medium roots; moderately acid; clear smooth boundary.

E—8 to 18 inches; pale brown (10YR 6/3) sandy loam; weak fine granular structure; very friable, nonsticky, nonplastic; few very fine and fine roots; very strongly acid; gradual smooth boundary.

Bt1—18 to 32 inches; brownish yellow (10YR 6/8) sandy clay loam; common fine distinct yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; very strongly acid; gradual smooth boundary.

Bt2—32 to 40 inches; brownish yellow (10YR 6/8) sandy clay loam; common fine distinct yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; very strongly acid; gradual wavy boundary.

Bt3—40 to 55 inches; brownish yellow (10YR 6/8) sandy clay loam; many fine distinct yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; firm, slightly sticky, slightly plastic; many fine prominent light brownish gray (10YR 6/2) iron depletions between peds; very strongly acid; diffuse smooth boundary.

BC—55 to 60 inches; brownish yellow (10YR 6/8) sandy clay loam; many fine distinct yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; firm, slightly sticky, slightly plastic; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Depth to top of seasonal high water table: 36 to 42 inches
Depth to lithologic discontinuity: Greater than 40 inches to residual material
Rock fragment content: 0 to 20 percent throughout the profile
Mica flakes: Few fakes of mica in the solum and C horizon in some pedons
Soil reaction: Very strongly acid to moderately acid, except in limed areas

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4
Texture—sandy loam in the fine-earth fraction

E horizon:
Color—hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6
Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

BA or BE horizon (if it occurs):
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 6
Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

Bt horizon (upper part):
Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 3 to 8
Texture—sandy clay loam or clay loam in the fine-earth fraction

Bt horizon (lower part):
Color—hue of 5YR to 2.5Y, value of 4 to 7, and chroma of 3 to 8
Texture—typically sandy clay loam or clay loam but may include sandy clay or clay in some pedons in the fine-earth fraction
Redoximorphic features—iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, brown, or yellow; features are commonly below a depth of 36 inches; in some pedons these colors are relict features

BCt or BC horizon:
Color—hue of 2.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, fine sandy loam, sandy clay loam, or clay loam in the fine-earth fraction
Redoximorphic features—iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, brown, or yellow

C horizon (if it occurs):
Color—hue of 2.5YR to 5Y and value and chroma of 3 to 8
Texture—stratified gravelly sand to clay
Redoximorphic features (relict)—iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, brown, or yellow

Cg horizon (if it occurs):
Color—horizon has hue of 5YR to 2.5Y, value of 3 to 8, and chroma of 1 or 2 or is neutral in hue and has value of 3 to 8
Texture—stratified gravelly sand to clay
Redoximorphic features—masses of oxidized iron in shades of red, brown, or yellow

Enon Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Iredell soils, which are not well drained

Taxonomic Classification

Fine, mixed, active, thermic Ultic Hapludalfs

Typical Pedon

Enon loam, 2 to 8 percent slopes; located about 665 feet north of VA631, about 0.9 mile west-southwest of the intersection of VA631 and VA712, about 5.1 miles east of Sturgeonville; McKenney, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 54 minutes 20.22 seconds N. and long. 77 degrees 43 minutes 6.55 seconds W.

Ap—0 to 8 inches; brown (10YR 4/3) loam; strong medium granular structure; very friable; common fine, medium, and coarse roots throughout; common medium distinct spherical moderately cemented iron-manganese concretions throughout; slightly acid; clear wavy boundary.
Bt1—8 to 18 inches; yellowish brown (10YR 5/6) clay; strong medium subangular blocky structure; friable, very sticky, very plastic; common fine and common medium roots between peds; prominent continuous clay films on all faces of peds and distinct discontinuous slickensides on vertical faces of peds; slightly alkaline; clear wavy boundary.
Bt2—18 to 23 inches; yellowish brown (10YR 5/6) clay; strong medium subangular blocky structure; firm, very sticky, very plastic; common fine and medium roots

between peds; prominent continuous clay films on all faces of peds and distinct discontinuous slickensides on vertical faces of peds; moderately alkaline; clear wavy boundary.

BC—23 to 43 inches; multicolored clay; common white (N 8/0), common dark yellowish brown (10YR 4/6), and many yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable, very sticky, very plastic; few fine and medium roots between peds; common flakes of mica; moderately alkaline; clear wavy boundary.

C—43 to 60 inches; multicolored sandy loam; many olive (5Y 5/6), white (N 8/0), yellowish brown (10YR 5/8 and 5/6), and dark yellowish brown (10YR 4/6) mottles; massive; very friable, slightly sticky, slightly plastic; common flakes of mica; moderately alkaline.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 13 percent throughout the profile
Depth to seasonal high water table: Greater than 60 inches
Mica flakes: Few or common in the solum and C horizon
Reaction: Strongly acid to slightly acid in the upper horizons and strongly acid to moderately alkaline in the lower horizons

Ap or A horizon:
Color—hue of 10YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4
Texture—loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4
Texture—sandy loam or loam in the fine-earth fraction

BE or BA horizon (if it occurs):
Color—hue of 7.5YR or 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture—loam or clay loam in the fine-earth fraction

Bt horizons:
Color—hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture—clay in the fine-earth fraction

BC horizon:
Color—horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 8 or is neutral in hue
Texture—loam, sandy clay loam, or clay loam

C horizon:
Color—multicolored
Texture—sandy clay loam, loam, or sandy loam saprolite in the fine-earth fraction

Fluvanna Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Residuum weathered from phyllite
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Low
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Badin soils, which have bedrock within a depth of 20 to 40 inches
- Goldston soils, which have bedrock within a depth of 20 inches
- Lignum soils, which are somewhat poorly drained

Taxonomic Classification

Fine, mixed, active, thermic Typic Hapludults

Typical Pedon

Fluvanna-Lignum complex, 2 to 8 percent slopes; located about 0.9 mile north of the junction of Highways VA633 and VA603 and 0.5 mile west of Highway VA-633, about 3 miles southwest of Brink; Barley, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 34 minutes 44.00 seconds N. and long. 77 degrees 39 minutes 40.00 seconds W.

A—0 to 1 inch; very dark grayish brown (10YR 3/2) fine sandy loam; moderate fine granular structure; very friable, nonsticky, nonplastic; many fine, medium, and coarse roots; 4 percent subrounded quartz gravel; extremely acid; clear smooth boundary.

E—1 to 5 inches; yellowish brown (10YR 5/4) fine sandy loam; moderate fine granular structure; friable, nonsticky, nonplastic; many fine, medium, and coarse roots; 4 percent subrounded quartz gravel; very strongly acid; gradual smooth boundary.

Bt1—5 to 11 inches; strong brown (7.5YR 5/6) clay loam; many medium distinct yellowish brown (10YR 5/4) mottles; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; many fine, medium, and coarse roots; many prominent continuous clay films on all faces of peds; 2 percent subrounded quartz gravel; extremely acid; gradual smooth boundary.

Bt2—11 to 23 inches; strong brown (7.5YR 5/6) clay; common medium distinct yellowish red (5YR 4/6) mottles; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; many fine and medium roots; many prominent continuous clay films on all faces of peds; 1 percent subrounded quartz gravel; very strongly acid; gradual smooth boundary.

Bt3—23 to 44 inches; yellowish red (5YR 5/8) clay; common medium distinct strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; many fine and medium roots; many prominent continuous clay films on all faces of peds; very strongly acid; gradual smooth boundary.

Bt4—44 to 55 inches; yellowish red (5YR 5/6) silty clay; many medium distinct dark red (10R 3/6) and brownish yellow (10YR 6/6) mottles; moderate coarse platy structure parting to moderate medium subangular blocky; firm, moderately sticky, moderately plastic; many fine roots; many prominent continuous clay films on all faces of peds; 10 percent subangular phyllite gravel; very strongly acid; diffuse smooth boundary.

C1—55 to 70 inches; brownish yellow (10YR 6/6), yellowish red (5YR 4/6), and dark red (10R 3/6) silty clay loam; massive; friable, moderately sticky, moderately plastic; many fine roots; 10 percent subangular phyllite gravel; very strongly acid; diffuse smooth boundary.

C2—70 to 99 inches; dark red (10R 3/6), black (10YR 2/1), and brownish yellow (10YR 6/6) silty clay loam; massive; friable, moderately sticky, moderately plastic; 10 percent subangular phyllite gravel; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 15 percent throughout the profile

Reaction: Very strongly acid or strongly acid throughout the profile, except in limed areas

A or Ap horizon:
Color—hue of 7.5YR to 2.5Y, value of 3 to 6, and chroma of 1 to 6; where value is 3, horizon is less than 6 inches thick
Texture—fine sandy loam in the fine-earth fraction

E horizon:
Color—hue of 7.5YR to 2.5Y and value and chroma of 3 to 6
Texture—fine sandy loam or loam in the fine-earth fraction

Bt horizons:
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Mottles—in shades of brown, yellow, or red
Texture—clay, silty clay, or clay loam in the fine-earth fraction

BC horizon (if it occurs):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Mottles—in shades of brown, yellow, or red
Texture—silty clay loam, silt loam, loam, or clay loam in the fine-earth fraction

C horizon:
Color—multicolored in shades of brown, red, yellow, or white
Texture—silt loam, loam, or silty clay loam in the fine-earth fraction

Georgeville Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Phyllite residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 15 percent

Associated Soils

- Badin soils, which have bedrock within a depth of 20 to 40 inches
- Herndon soils, which have yellower subsoils
- Lignum soils, which are somewhat poorly drained
- Tatum soils, which have soft bedrock within a depth of 60 inches

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Georgeville loam, 2 to 8 percent slopes; located about 1,500 feet west of VA609, about 2,000 feet south of the Nottoway River, and 3,390 feet north-northeast of the intersection of VA609 and VA631; McKenney, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 53 minutes 56.60 seconds N. and long. 77 degrees 40 minutes 49.40 seconds W.

Ap—0 to 4 inches; brown (7.5YR 4/3) loam; weak medium granular structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; many fine low-continuity interstitial pores; 5 percent angular quartz gravel; moderately acid; clear wavy boundary.
Bt1—4 to 8 inches; yellowish red (5YR 4/6) silty clay loam; moderate medium

subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; strongly acid; diffuse wavy boundary.

Bt2—8 to 17 inches; red (2.5YR 4/6) silty clay; strong medium subangular blocky structure; friable, moderately sticky, slightly plastic; many very fine and fine, many medium, and few coarse roots; very strongly acid; clear wavy boundary.

Bt3—17 to 28 inches; red (2.5YR 4/6) silty clay; common fine prominent strong brown (7.5YR 5/8) mottles; strong medium subangular blocky structure; friable, moderately sticky, slightly plastic; few very fine and fine and few medium roots; very strongly acid; clear wavy boundary.

Bt4—28 to 39 inches; red (2.5YR 4/6) silty clay loam; common medium prominent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few fine, few medium, and few very fine roots; very strongly acid; clear wavy boundary.

BC—39 to 50 inches; red (2.5YR 4/8) silt loam; many medium prominent strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine and few medium roots; very strongly acid; gradual wavy boundary.

C—50 to 60 inches; red (2.5YR 4/8) silt loam; many medium prominent strong brown (7.5YR 5/8) mottles; massive; very friable, nonsticky, nonplastic; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 10 percent throughout the profile
Mica flakes: Few flakes of mica in the lower horizons of some pedons
Reaction: Very strongly acid to neutral in the A horizon and very strongly acid or strongly acid in the E, B, and C horizons

Ap or A horizon:
Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 6
Texture—loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 3 to 8
Texture—silt loam or loam in the fine-earth fraction

Bt horizons:
Color—hue of 10R or 2.5YR, value of 4 or 5, and chroma of 6 to 8; hue of 5YR is allowed in the upper part
Mottles—in shades of yellow or brown in some pedons
Texture—clay, silty clay, silty clay loam, or clay loam in the fine-earth fraction

BC horizon:
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 6 to 8
Mottles—in shades of yellow or brown in some pedons
Texture—silt loam, loam, or silty clay loam in the fine-earth fraction

C horizon:
Color—hue of 10R to 10YR, value of 4 to 6, and chroma of 3 to 8
Mottles—in shades of yellow, brown, gray, or red in some pedons
Texture—silt loam, loam, or silty clay loam in the fine-earth fraction

Goldston Series

Physiographic province: Southern Piedmont, thermic
Landform: Hillslope on upland

Parent material: Slate residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Shallow
Slope range: 15 to 35 percent

Associated Soils

- Badin soils, which have mixed mineralogy
- Cecil soils, which have less than 30 percent silt in the control section
- Georgeville soils, which have a clayey red subsoil
- Herndon soils, which have subsoil hues of 5YR or yellower

Taxonomic Classification

Loamy-skeletal, siliceous, semiactive, thermic, shallow Typic Dystrudepts

Typical Pedon

Badin-Goldston complex, 8 to 15 percent slopes; located about 0.8 mile south-southeast of the intersection of VA601 and the Greensville-Brunswick County line, about 1.6 miles northwest of Barley; Barley, Virginia 7.5 minute topographic quadrangle in Greensville County, Virginia; lat. 36 degrees 34 minutes 40.70 seconds N. and long. 77 degrees 43 minutes 39.79 seconds W.

Ap—0 to 6 inches; grayish brown (10YR 5/2) channery silt loam; weak medium granular structure; friable; many very fine and fine, many medium, and few coarse roots; many fine low-continuity interstitial pores; 35 percent angular slate channers; moderately acid; clear wavy boundary.
Bw—6 to 18 inches; light yellowish brown (10YR 6/4) very channery silt loam; weak fine subangular blocky structure; friable; few very fine and fine roots; 40 percent angular slate channers; strongly acid; diffuse wavy boundary.
Cr—18 to 26 inches; light gray (10YR 7/1) soft bedrock.
R—26 inches; hard bedrock.

Range in Characteristics

Depth to soft bedrock: 10 to 20 inches
Depth to hard bedrock: 20 to 40 inches or more
Rock fragment content: 15 to 35 percent in the A horizon and 35 to 70 percent in the E, B, and C horizons
Reaction: Extremely acid to moderately acid

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4
Texture—silt loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue 10YR to 2.5Y, value of 4 to 7, and chroma of 2 to 6
Texture—silt loam in the fine-earth fraction

Bw horizon:
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8
Texture—silt loam in the fine-earth fraction

Cr horizon:
Bedrock—highly weathered and fractured schist, slate, or phyllite

R horizon:
Bedrock—relatively unweathered hard schist, slate, or phyllite

Helena Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Gneiss residuum
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Very deep
Slope range: 2 to 15 percent

Associated Soils

- Appling soils, which are well drained
- Cecil soils, which are well drained
- Iredell soils, which are somewhat poorly drained
- Worsham soils, which are poorly drained

Taxonomic Classification

Fine, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Helena sandy loam, 2 to 8 percent slopes; located about 0.95 mile northeast of Dundas, 0.70 mile northwest of the intersection of VA 617 and the railroad tracks, along a farm road; Kenbridge East, Virginia USGS 7.5 minute topographic quadrangle; lat. 36 degrees 55 minutes 5.17 seconds N. and long. 78 degrees 0 minutes 16.00 seconds W.

Ap—0 to 8 inches; yellowish brown (10YR 5/4) sandy loam; weak medium granular structure; very friable, slightly sticky, nonplastic; many very fine, fine, and medium and few coarse roots; moderately acid; abrupt smooth boundary.

Bt1—8 to 15 inches; yellowish brown (10YR 5/8) sandy clay loam; weak fine subangular blocky structure; firm, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; strongly acid; clear wavy boundary.

Bt2—15 to 30 inches; yellowish brown (10YR 5/8) sandy clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; many very fine, fine, and medium and few coarse roots; common fine prominent red (2.5YR 5/6) masses of oxidized iron in matrix; very strongly acid; clear wavy boundary.

Bt3—30 to 40 inches; yellowish brown (10YR 5/8) sandy clay; moderate medium subangular blocky structure; firm, slightly sticky, very plastic; few very fine, fine, and medium roots; many fine prominent light gray (10YR 7/2) iron depletions; very strongly acid; clear wavy boundary.

BC—40 to 50 inches; brownish yellow (10YR 6/6) and strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine, fine, and medium roots; many medium prominent light gray (10YR 7/2) iron depletions; very strongly acid; clear wavy boundary.

C—50 to 61 inches; yellowish brown (10YR 5/8 and 5/6) sandy clay loam; massive; friable, slightly sticky, slightly plastic; many medium distinct light gray (10YR 7/2) iron depletions; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Depth to seasonal high water table: 18 to 30 inches
Rock fragment content: 0 to 15 percent throughout the profile
Mica flakes: Few or common in the solum and C horizon

Soil reaction: Extremely acid to strongly acid throughout the profile, except in limed areas

A or Ap horizon:
Color—hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 1 to 4
Texture—sandy loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 10YR to 5Y, value of 5 to 8, and chroma of 2 to 4
Texture—coarse sandy loam, fine sandy loam, sandy loam, or loam in the fine-earth fraction

BE or BA horizon (if it occurs):
Color—hue of 7.5YR to 5Y, value of 5 to 8, and chroma of 3 to 8
Texture—sandy clay loam or clay loam in the fine-earth fraction

Bt horizon:
Color—hue of 7.5YR to 2.5Y, value of 5 to 8, and chroma of 3 to 8
Texture—sandy clay, clay, clay loam, or sandy clay loam in the fine-earth fraction
Redoximorphic features—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray occur within 24 inches of the upper boundary of horizon

Btg horizon (if it occurs):
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2
Texture—sandy clay, clay, or clay loam in the fine-earth fraction
Redoximorphic features—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

BC or BCt horizon:
Color—hue of 10YR or 2.5Y, value of 5 to 8, and chroma of 3 to 8
Texture—loam, sandy clay loam, clay loam, fine sandy loam, or sandy loam in the fine-earth fraction
Redoximorphic features (if they occur)—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

BCg or BCtg horizon (if it occurs):
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2
Texture—loam, sandy clay loam, clay loam, fine sandy loam, or sandy loam in the fine-earth fraction
Redoximorphic features—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

C horizon:
Color—hue of 5YR to 5Y, value of 5 to 8, and chroma of 3 to 8
Texture—sandy loam, sandy clay loam, clay loam, fine sandy loam, loamy sand, or loam in the fine-earth fraction
Redoximorphic features (if they occur)—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

Cg horizon (if it occurs):
Color—hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2
Texture—sandy loam, sandy clay loam, clay loam, fine sandy loam, loamy sand, or loam in the fine-earth fraction
Redoximorphic features—masses of oxidized iron in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

Herndon Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Phyllite residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Badin soils, which are moderately deep to bedrock
- Georgeville soils, which have a redder subsoil
- Goldston soils, which are shallow to bedrock

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Herndon loam, 2 to 8 percent slopes; located about 1,000 feet northwest on VA631 from its intersection with VA609, on the west side of VA631 in pine woods; McKenney, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 53 minutes 26.20 seconds N. and long. 77 degrees 41 minutes 4.07 seconds W.

Ap—0 to 6 inches; brown (10YR 4/3) loam; weak medium granular structure; friable, nonsticky, nonplastic; many very fine, fine, and medium and few coarse roots; many fine low-continuity interstitial pores; moderately acid; abrupt wavy boundary.
Bt1—6 to 10 inches; yellowish brown (10YR 5/6) silty clay loam; strong medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; very strongly acid; clear wavy boundary.
Bt2—10 to 23 inches; strong brown (7.5YR 5/8) silty clay; common fine faint yellowish red (5YR 5/8) mottles; strong medium angular blocky structure; firm, moderately sticky, moderately plastic; few very fine, fine, and medium roots; 3 percent angular quartz gravel; very strongly acid; gradual smooth boundary.
Bt3—23 to 50 inches; strong brown (7.5YR 5/8) silty clay; common fine faint red (2.5YR 5/8) and common medium faint (5YR 4/8) and distinct yellowish brown (10YR 5/6) mottles; moderate medium angular blocky structure; firm, moderately sticky, moderately plastic; few very fine, fine, and medium roots; 2 percent angular quartz gravel; very strongly acid; gradual smooth boundary.
BC—50 to 61 inches; strong brown (7.5YR 5/8) silt loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 12 percent throughout the profile
Reaction: Very strongly acid to slightly acid in the A and E horizons and extremely acid to strongly acid in the B and C horizons

A or Ap horizon:
Color—hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 8; where value is 3, horizon is less than 6 inches thick
Texture—silt loam or loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 6
Texture—loam in the fine-earth fraction

BE or BA horizon (if it occurs):
Color—hue of 7.5YR to 5Y and value and chroma of 4 to 6
Texture—silt loam or loam in the fine-earth fraction

Bt horizons:
Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 4 to 8
Mottles (nonredoximorphic)—in shades of brown, yellow, or red
Texture—clay, silty clay, or silty clay loam in the fine-earth fraction

BC horizon:
Color—hue of 5YR to 10YR, value of 4 to 7, and chroma of 4 to 8
Mottles (nonredoximorphic)—in shades of brown, yellow, or red
Texture—silty clay loam, silt loam, loam, or clay loam in the fine-earth fraction

C horizon (if it occurs):
Color—multicolored in shades of brown, red, yellow, or white
Texture—silt loam or loam in the fine-earth fraction

Iredell Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Diorite residuum
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately low
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Enon soils, which are well drained
- Helena soils, which are more acidic
- Worsham soils, which are poorly drained

Taxonomic Classification

Fine, mixed, active, thermic Oxyaquic Vertic Hapludalfs

Typical Pedon

Iredell gravelly sandy loam, 2 to 8 percent slopes; located about 950 feet west-northwest of the intersection of VA717 and a farm road, 965 feet west of VA717, about 1.5 miles southeast of the intersection of VA626 and VA746; Gasburg, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 33 minutes 34.28 seconds N. and long. 77 degrees 58 minutes 33.72 seconds W.

Apc—0 to 4 inches; olive brown (2.5Y 4/3) gravelly sandy loam; strong medium granular structure; very friable, nonsticky, nonplastic; common fine, medium, and coarse roots; common medium distinct spherical moderately cemented iron-manganese concretions throughout; 25 percent subangular quartz gravel; slightly acid; clear wavy boundary.

ABc—4 to 9 inches; yellowish brown (10YR 5/8) gravelly sandy loam; moderate medium granular structure; friable, nonsticky, nonplastic; common fine, medium, and coarse roots; few medium distinct irregular reddish brown (2.5YR 4/3) and common medium prominent spherical moderately cemented reddish brown (2.5YR 4/3) masses of oxidized iron throughout; 25 percent subangular quartz gravel; slightly acid; clear wavy boundary.

Btss1—9 to 15 inches; yellowish brown (10YR 5/6) clay; strong medium subangular blocky structure; friable, very sticky, very plastic; common fine and medium roots; prominent continuous clay films on all faces of peds and distinct discontinuous slickensides (pedogenic) on vertical faces of peds; common medium prominent irregular extremely weakly cemented black (10YR 2/1) manganese masses throughout; slightly alkaline; clear wavy boundary.

Btss2—15 to 24 inches; yellowish brown (10YR 5/8) clay; strong medium subangular blocky structure; firm, very sticky, very plastic; common fine and medium roots; prominent continuous clay films on all faces of peds and distinct discontinuous slickensides (pedogenic) on vertical faces of peds; medium distinct irregular light gray (10YR 7/1) iron depletions on faces of peds and many medium prominent irregular extremely weakly cemented black (10YR 2/1) manganese masses throughout; moderately alkaline; clear wavy boundary.

Btss3—24 to 31 inches; yellowish brown (10YR 5/8) clay; strong medium subangular blocky structure; friable, very sticky, very plastic; common fine and medium roots; prominent continuous clay films on all faces of peds and distinct discontinuous slickensides (pedogenic) on vertical faces of peds; common medium prominent irregular extremely weakly cemented black (10YR 2/1) manganese masses throughout and many medium prominent irregular light gray (10YR 7/1) iron depletions on faces of peds; moderately alkaline; clear wavy boundary.

BC—31 to 40 inches; yellowish brown (10YR 5/8), olive (5Y 5/6), dark yellowish brown (10YR 4/6), and white (10YR 8/1) clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine and medium roots; common flakes of mica; moderately alkaline; clear wavy boundary.

C—40 to 61 inches; yellowish brown (10YR 5/6), white (10YR 8/1), and olive (5Y 5/6) loam; massive; very friable, slightly sticky, slightly plastic; common flakes of mica; moderately alkaline.

Range in Characteristics

Depth to hard bedrock: Greater than 60 inches
Rock fragment content: 0 to 21 percent throughout the profile
Depth to seasonal high water table: 12 to 18 inches
Mica flakes: Few or common in the solum and C horizon
Reaction: Strongly acid to neutral in the A horizon, moderately acid to moderately alkaline in the B horizon, and neutral to moderately alkaline in the C horizon

Ap or A horizon:
Color—hue of 10YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4
Texture—sandy loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 10YR or 2.5Y, value of 6 or 7, and chroma of 1 to 3
Texture—sandy loam or loam in the fine-earth fraction

AB or BA horizon:
Color—hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, loam, or clay loam in the fine-earth fraction

Bt horizons:
Color—hue of 10YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6
Texture—clay in the fine-earth fraction

BC horizon:
Color—hue of 10YR to 5Y, value of 4 to 6, and chroma of 3 to 6
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

C horizon:
Color—multicolored
Texture—sandy clay loam, loam, or sandy loam in the fine-earth fraction

Lignum Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Slate residuum
Drainage class: Somewhat poorly drained
Slowest saturated hydraulic conductivity: Low
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Badin soils, which are well drained and moderately deep to bedrock
- Cid soils, which are moderately deep to bedrock

Taxonomic Classification

Fine, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Lignum-Cid complex, 2 to 8 percent slopes; located about 6.9 miles southeast of Roxboro, North Carolina, and 0.3 mile east of Surl on US158, about 1.6 miles northeast on NC1567, about 1.0 mile north on NC571, about 0.2 mile east on NC1565, and 25 feet north of the road; in Person County, North Carolina; lat. 36 degrees 22 minutes 6.00 seconds N. and long. 78 degrees 51 minutes 51.00 seconds W.

Ap—0 to 6 inches; light olive brown (2.5Y 5/4) loam; weak fine granular structure; very friable, slightly sticky, nonplastic; many fine and medium roots; few fine interstitial pores; 10 percent angular quartz gravel; very strongly acid; abrupt smooth boundary.

Bt1—6 to 14 inches; yellowish brown (10YR 5/8) clay; moderate coarse subangular blocky structure; firm, moderately sticky, moderately plastic; few fine and medium and common very fine roots; few fine and medium tubular pores; very few distinct continuous clay films on all faces of peds; few medium faint irregular strong brown (7.5YR 5/8) and few medium prominent irregular red (2.5YR 5/8) masses of oxidized iron with diffuse boundaries; common medium prominent irregular gray (10YR 6/1) iron depletions with diffuse boundaries; very strongly acid; gradual wavy boundary.

Bt2—14 to 28 inches; yellowish brown (10YR 5/8) silty clay; moderate medium and coarse subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; few fine and medium moderate-continuity tubular pores; very few distinct continuous clay films on all faces of peds; common medium prominent irregular gray (10YR 6/1) iron depletions with diffuse boundaries; common medium faint irregular strong brown (7.5YR 5/8) and common medium prominent irregular red (2.5YR 5/8) masses of oxidized iron with diffuse boundaries; very strongly acid; gradual wavy boundary.

Btg—28 to 35 inches; gray (10YR 6/1) silty clay; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; few fine roots; few fine and medium tubular pores; very few distinct continuous clay films on all faces of peds; few fine prominent irregular red (2.5YR 5/8) masses of oxidized iron and common coarse prominent irregular strong brown (7.5YR 5/8) masses of oxidized iron with diffuse boundaries in matrix and common medium prominent irregular strong

brown (7.5YR 5/6) masses of oxidized iron with diffuse boundaries in matrix; very strongly acid; gradual wavy boundary.
C—35 to 56 inches; yellowish brown (10YR 5/4) silt loam; massive; friable, slightly sticky, nonplastic; 3 percent angular quartz gravel; very strongly acid; gradual wavy boundary.
Cr—56 to 59 inches; weathered bedrock.

Range in Characteristics

Depth to soft bedrock: 40 to 60 inches
Depth to seasonal high water table: 12 to 30 inches
Depth to hard bedrock: Greater than 60 inches
Rock fragments: 0 to 15 percent throughout the profile
Reaction: Very strongly acid or strongly acid

Ap or A horizon:
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 1 to 4
Texture—loam in the fine-earth fraction

BA or BE horizon (if it occurs):
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8
Texture—loam, silt loam, or silty clay loam in the fine-earth fraction

Bt horizons:
Color—hue of 7.5YR to 2.5Y, value of 5 to 7, and chroma of 3 to 8
Texture—silty clay, clay, silty clay loam, or clay loam in the fine-earth fraction
Redoximorphic features—iron depletions and accumulations in shades of gray, yellow, brown, or red in most pedons

Btg horizon:
Color—horizon has hue of 7.5YR to 2.5Y or is neutral in hue, has value of 5 to 7, and has chroma of 0 to 2
Texture—silty clay loam, silty clay, clay loam, or clay in the fine-earth fraction
Redoximorphic features—iron depletions and accumulations in shades of gray, yellow, brown, or red in most pedons

C horizon:
Color—variable
Texture—silt loam, very fine sandy loam, or silty clay loam in the fine-earth fraction

Cr horizon:
Bedrock—moderately fractured, highly weathered slate

Madison Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Biotite gneiss residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 8 to 25 percent

Associated Soils

- Cecil soils, which have a lower mica content in the solum
- Helena soils, which are moderately well drained
- Pacolet soils, which have a lower mica content in the solum

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Madison clay loam, 8 to 15 percent slopes, severely eroded; located about 1,960 feet southeast of the intersection of US1 and VA657, about 2,300 feet south-southeast of the Meherrin River at I-85, about 760 feet west of the Meherrin River, 3.9 miles southwest of Meredithville; Forksville, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 46 minutes 27.47 seconds N. and long. 78 degrees 0 minutes 52.51 seconds W.

Ap—0 to 4 inches; brown (10YR 4/3) clay loam; weak medium subangular blocky structure; very friable, slightly sticky, slightly plastic; common fine, medium, and coarse roots; common flakes of mica; very strongly acid; clear wavy boundary.

Bt1—4 to 13 inches; red (2.5YR 4/6) clay; strong medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium roots; prominent continuous clay films on all faces of peds; common flakes of mica; very strongly acid; clear wavy boundary.

Bt2—13 to 25 inches; red (2.5YR 4/6) clay; strong medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine and medium roots; prominent continuous clay films on all faces of peds; many flakes of mica; very strongly acid; clear wavy boundary.

Bt3—25 to 40 inches; yellowish red (5YR 4/6) clay loam; strong medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; prominent continuous clay films on all faces of peds; many flakes of mica; very strongly acid; clear wavy boundary.

BCt—40 to 48 inches; yellowish red (5YR 4/6) sandy clay loam; many coarse distinct strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; very friable, nonsticky, nonplastic; faint discontinuous clay films on all faces of peds; many flakes of mica; very strongly acid; clear wavy boundary.

C—48 to 60 inches; strong brown (7.5YR 5/8) sandy loam; massive; very friable, nonsticky, nonplastic; many flakes of mica; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 6 feet
Rock fragment content: 0 to 15 percent throughout the profile
Mica flakes: Few to many in the A, E, BE, and BA horizons and many in the Bt, BC, and C horizons
Reaction: Moderately acid to very strongly acid throughout, except where the surface has been limed; moderately acid or slightly acid in the upper part in limed areas

A or Ap horizon:
Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 3 to 8
Texture—clay loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 7.5YR to 10YR, value of 3 to 5, and chroma of 3 to 6
Texture—fine sandy loam or sandy loam in the fine-earth fraction

BA or BE horizon (if it occurs):
Color—hue of 10R to 7.5YR, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, loam, or sandy clay loam in the fine-earth fraction

Bt horizon:
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 3 to 8
Texture—clay, sandy clay, or clay loam in the fine-earth fraction

BC horizon:
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction

C horizon:
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, loam, or sandy clay loam in the fine-earth fraction

Mattaponi Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Ancient fluviomarine deposits
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 15 percent

Associated Soils

- Appling soils, which formed in residuum and are well drained
- Emporia soils, which have less clay in the subsoil

Taxonomic Classification

Fine, mixed, subactive, thermic Oxyaquic Hapludults

Typical Pedon

Appling-Mattaponi complex, 2 to 8 percent slopes; located about 500 feet east of VA644 and 2,000 feet north of VA652, about 200 feet south of a utility pole on a farm road; Danieltown, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 52 minutes 56.00 seconds N. and long. 77 degrees 56 minutes 35.00 seconds W.

A—0 to 10 inches; brown (10YR 5/3) sandy loam; moderate medium granular structure; very friable, nonsticky, nonplastic; many very fine, fine, and medium and few coarse roots; neutral; abrupt smooth boundary.
E—10 to 14 inches; light yellowish brown (10YR 6/4) sandy loam; moderate medium granular structure; friable, nonsticky, nonplastic; many very fine, fine, and medium and few coarse roots; slightly acid; clear smooth boundary.
Bt1—14 to 19 inches; brownish yellow (10YR 6/6) clay; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine, fine, and medium roots; moderately acid; clear wavy boundary.
Bt2—19 to 25 inches; brownish yellow (10YR 6/8) clay; common fine distinct strong brown (7.5YR 5/8) mottles; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine, fine, and medium roots; strongly acid; clear wavy boundary.
Bt3—25 to 35 inches; strong brown (7.5YR 5/8) clay; common medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; few very fine, fine, and medium roots; very strongly acid; clear wavy boundary.
BC—35 to 60 inches; strong brown (7.5YR 5/8) clay loam; weak medium subangular blocky structure; firm, moderately sticky, moderately plastic; common coarse prominent platy red (2.5YR 4/8) masses of oxidized iron with clear boundaries throughout and many coarse distinct platy light gray (10YR 7/1) iron depletions with clear boundaries throughout; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Depth to seasonal high water table: 36 to 50 inches
Depth to lithologic discontinuity: Greater than 60 inches to residual material
Rock fragment content: 0 to 35 percent throughout the profile
Soil reaction: Very strongly acid or strongly acid, except in limed areas; ranging to neutral in the upper part in limed areas

A or Ap horizon:
Color—hue of 7.5YR to 2.5Y, value of 2 to 7, and chroma of 2 to 8
Texture—sandy loam in the fine-earth fraction

E horizon:
Color—hue of 7.5YR to 2.5Y and value and chroma of 2 to 6
Texture—loamy sand, sandy loam, or fine sandy in the fine-earth fraction

BA or BE horizon (if it occurs):
Color—hue of 7.5YR to 2.5Y and value and chroma of 2 to 8
Texture—loamy sand, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction

Bt horizon (upper part):
Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 3 to 8
Texture—sandy clay loam, clay loam, sandy clay, or clay in the fine-earth fraction

Bt horizon (lower part):
Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 3 to 8
Texture—sandy clay loam, clay loam, sandy clay, or clay in the fine-earth fraction
Redoximorphic features—iron depletions in shades of brown, yellow, and gray and masses of oxidized iron in shades of red, brown, or yellow; in some pedons these colors are relict features

BCt or BC horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 3 to 8
Texture—sandy clay loam, clay loam, sandy clay, or clay in the fine-earth fraction
Redoximorphic features (relict)—iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, brown, or yellow; in some pedons these colors are contemporary features

C horizon:
Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 3 to 8
Texture—stratified gravelly sand to clay
Redoximorphic features (relict)—iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, brown, or yellow; in some pedons these colors are contemporary features

2C horizon (if it occurs):
Color—hue of 7.5YR to 2.5Y, value of 4 to 8, and chroma of 3 to 8
Texture—loamy sand to clay loam in the fine-earth fraction
Redoximorphic features (relict)—iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, brown, or yellow

Pacolet Series

Physiographic province: Southern Piedmont, thermic
Landform: Backslope of interfluve on upland
Parent material: Granite gneiss residuum

Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 8 to 25 percent

Associated Soils

- Cecil soils, which have thicker clay subsoils
- Rion soils, which have less clay in the subsoil
- Wedowee soils, which have yellower subsoils

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Pacolet sandy loam, 15 to 25 percent slopes; located about 8,000 feet southeast of the intersection of VA644 and VA623, about 1,200 feet northeast of VA623; White Plains, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 41 minutes 43.16 seconds N. and long. 77 degrees 55 minutes 0.73 seconds W.

A—0 to 5 inches; brown (7.5YR 4/4) sandy loam; moderate medium granular structure; very friable, nonsticky, nonplastic; many very fine, fine, and medium and few coarse roots; 14 percent angular quartz gravel; very strongly acid; clear smooth boundary.

Bt1—5 to 12 inches; yellowish red (5YR 4/6) clay loam; common fine faint yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; faint continuous red (2.5YR 4/6) clay films on all faces of peds; 12 percent angular quartz gravel; very strongly acid; diffuse wavy boundary.

Bt2—12 to 28 inches; red (2.5YR 4/6) clay; common fine prominent white (10YR 8/1) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; faint continuous red (2.5YR 4/6) clay films on all faces of peds; common mica flakes; 10 percent angular quartz gravel; very strongly acid; diffuse wavy boundary.

BCt—28 to 38 inches; red (2.5YR 5/8 and 4/6) clay loam; common fine prominent white (10YR 8/1) and common medium distinct strong brown (7.5YR 5/6) and prominent light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine, fine, and medium roots; faint patchy red (2.5YR 4/6) clay films on all faces of peds; common mica flakes; 10 percent angular quartz gravel; very strongly acid; clear wavy boundary.

C—38 to 60 inches; red (2.5YR 4/8) sandy loam; common fine prominent white (10YR 8/1) and common medium prominent brownish yellow (10YR 6/6) and distinct strong brown (7.5YR 5/6) mottles; massive; very friable, nonsticky, nonplastic; common mica flakes; 14 percent angular quartz gravel; strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 15 percent throughout the profile
Soil reaction: Extremely acid to moderately acid throughout the profile
Mica flakes: Few or common in the upper solum and few to many in the lower solum and in the C horizon

A horizon:
Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 1 to 6
Texture—sandy loam in the fine-earth fraction

Ap horizon (if it occurs):
Color—hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 8
Texture—sandy loam or fine sandy loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

BE or BA horizon (if it occurs):
Color—hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 4 to 8
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

Bt horizon:
Color—hue of 10R to 5YR, value of 4 or 5, and chroma of 6 to 8
Mottles—in shades of red, brown, or yellow
Texture—clay loam, sandy clay, or clay in the fine-earth fraction

BC or BCt horizon:
Color—hue of 10R to 7.5YR, value of 4 to 6, and chroma of 6 to 8
Mottles—masses of saprolite in shades of red, brown, or yellow
Texture—sandy loam, fine sandy loam, sandy clay loam, or clay loam in the fine-earth fraction

C horizon:
Color—hue of 10R to 7.5YR, value of 4 to 6, and chroma of 6 to 8
Mottles—masses of saprolite in shades of red, brown, or yellow
Texture—sandy loam, fine sandy loam, sandy clay loam, or clay loam in the fine-earth fraction

Rion Series

Physiographic province: Southern Piedmont, thermic
Landform: Shoulder of hillslope on upland
Parent material: Granite gneiss residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 25 percent

Associated Soils

- Ashlar soils, which have bedrock between depths of 20 and 40 inches
- Cecil soils, which have red clayey subsoils
- Pacolet soils, which have red clayey subsoils
- Wedowee soils, which have yellowish brown clayey subsoils

Taxonomic Classification

Fine-loamy, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Rion-Ashlar sandy loam, 8 to 15 percent slopes; located about 1,575 feet northeast of the intersection of VA683 and VA674, about 3,168 feet south of the Meherrin River, 3.0 miles northeast of Powellton; lat. 36 degrees 42 minutes 27.00 seconds N. and long. 77 degrees 46 minutes 21.50 seconds W.

A—0 to 4 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine, fine, and medium and few coarse roots; very strongly acid; clear smooth boundary.

E—4 to 18 inches; yellowish brown (10YR 5/4) sandy loam; weak fine subangular blocky structure; friable, nonsticky, nonplastic; many very fine, fine, and medium and few coarse roots; very strongly acid; clear smooth boundary.

Bt—18 to 38 inches; strong brown (7.5YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine and fine, many medium, and few coarse roots; faint patchy clay films on all faces of peds; very strongly acid; clear smooth boundary.

C—38 to 60 inches; light yellowish brown (10YR 6/4) sandy loam; massive; very friable, nonsticky, nonplastic; few very fine, fine, medium, and coarse roots; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 12 percent throughout the profile
Mica flakes: None to common in the solum and none to many in the C horizon below a depth of 40 inches
Reaction: Very strongly acid to slightly acid

A horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 6
Texture—sandy loam in the fine-earth fraction

E horizon:
Color—hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8
Texture—sandy loam, fine sandy loam, or loam in the fine-earth fraction

Bt horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Texture—sandy clay loam or clay loam in the fine-earth fraction

BC or BCt horizon (if it occurs):
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Mottles—masses of saprolite in shades of red, brown, yellow, or white
Texture—clay loam, sandy clay loam, loam, or sandy loam in the fine-earth fraction

C horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 4 to 8
Mottles—in shades of red, brown, yellow, or white in some pedons
Texture—sandy loam, loam, coarse sandy loam, or fine sandy loam in the fine-earth fraction

Riverview Series

Physiographic province: Southern Piedmont, thermic
Landform: Flood plain in river valley
Parent material: Recent alluvium
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Chewacla soils, which are somewhat poorly drained
- Wehadkee soils, which are poorly drained

Taxonomic Classification

Fine-loamy, mixed, active, thermic Fluventic Dystrudepts

Typical Pedon

Riverview loam, 0 to 2 percent slopes, occasionally flooded; located about 500 feet southeast of Cutbank Bridge on VA609 along the Nottoway River near the Dinwiddie County line; McKenney, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 54 minutes 0.35 seconds N. and long. 77 degrees 40 minutes 20.81 seconds W.

A—0 to 15 inches; dark yellowish brown (10YR 4/4) loam; weak fine granular structure; very friable; few very fine, fine, and medium and few coarse roots; common fine mica flakes; moderately acid; clear smooth boundary.

Bw1—15 to 30 inches; yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; few medium and coarse roots; common fine mica flakes; strongly acid; gradual wavy boundary.

Bw2—30 to 48 inches; dark yellowish brown (10YR 4/6) sandy loam; moderate medium subangular blocky structure; friable; few medium and coarse roots; common medium prominent iron-manganese masses in matrix and common medium faint yellowish brown (10YR 5/6) masses of oxidized iron; common fine mica flakes; strongly acid; gradual wavy boundary.

Bw3—48 to 59 inches; dark yellowish brown (10YR 4/6) sandy loam; weak medium subangular blocky structure; friable; few medium roots; common medium prominent iron-manganese masses and common medium distinct brownish yellow (10YR 6/8) masses of oxidized iron; common fine mica flakes; strongly acid; gradual wavy boundary.

C—59 to 75 inches; brownish yellow (10YR 6/8) loamy sand; massive; friable; few medium roots; common medium prominent black (10YR 3/1) iron-manganese masses, common medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in matrix, and many medium distinct light gray (10YR 7/2) iron depletions in matrix; common fine mica flakes; very strongly acid; gradual wavy boundary.

Cg—75 to 99 inches; light gray (10YR 7/2) sandy loam; massive; friable; common medium distinct brownish yellow (10YR 6/8) and strong brown (7.5YR 5/6) masses of oxidized iron in matrix; common fine mica flakes; very strongly acid.

Range in Characteristics

Depth to water table: 36 to 60 inches
Mica flakes: Few or common in the solum and C horizon
Reaction: Very strongly acid to slightly acid in the A horizon and very strongly acid to moderately acid in the Bw, BC, and C horizons
Rock fragment content: 0 to 15 percent throughout the profile

A or Ap horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6; where value is 3, horizon is less than 6 inches thick
Texture—loam in the fine-earth fraction

Bw horizon:
Color—hue of 7.5YR or 10YR, value of 3 to 6, and chroma of 3 to 8
Texture—loam, fine sandy loam, sandy clay loam, clay loam, silt loam, or silty clay loam in the fine-earth fraction
Redoximorphic features—none to common iron concentrations in shades of yellow, brown, or red; none to common iron depletions with chroma of 2 or less at a depth of 24 inches or more

BC horizon (if it occurs):
Color—hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 6

Texture—loam, fine sandy loam, sandy loam, or sandy clay loam in the fine-earth fraction
Redoximorphic features—few or common iron concentrations in shades of yellow, brown, or red; none to common iron depletions below a depth of 24 inches

C horizon:
Color—hue of 7.5YR or 10YR and value and chroma of 4 to 8
Texture—loamy fine sand, loamy sand, sand, fine sandy loam, or sandy loam in the fine-earth fraction
Redoximorphic features—few or common iron concentrations in shades of yellow, brown, or red; none to common iron depletions

Cg horizon:
Color—hue of 10YR, value of 4 to 7, and chroma of 1 or 2
Texture—loamy fine sand, loamy sand, sand, fine sandy loam, or sandy loam in the fine-earth fraction
Redoximorphic features—few or common iron concentrations in shades of yellow, brown, or red

Santuc Series

Physiographic province: Southern Piedmont, thermic
Landform: Toeslope of drainageway on upland
Parent material: Loamy slope alluvium derived from granite and gneiss
Drainage class: Moderately well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Appling soils, which are well drained
- Cecil soils, which are well drained
- Helena soils, which have a clayey subsoil
- Wedowee soils, which are well drained
- Worsham soils, which are poorly drained

Taxonomic Classification

Fine-loamy, mixed, semiactive, thermic Aquic Hapludults

Typical Pedon

Santuc sandy loam, 2 to 8 percent slopes; located about 4,450 feet north of the intersection of VA651 and VA640, about 2,400 feet south of the intersection of VA651 and VA634, about 150 feet west of VA651; Lawrenceville, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 49 minutes 29.00 seconds N. and long. 77 degrees 48 minutes 22.00 seconds W.

Ap—0 to 10 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine granular structure; friable, nonsticky, nonplastic; many very fine, fine, and medium and common coarse roots; 5 percent subrounded quartz gravel; strongly acid; gradual smooth boundary.
E—10 to 15 inches; brownish yellow (10YR 6/6) sandy loam; weak fine granular structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; 5 percent subrounded quartz gravel; very strongly acid; clear smooth boundary.

Bt1—15 to 20 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; very few faint patchy clay films on all faces of peds; 4 percent subrounded quartz gravel; very strongly acid; gradual smooth boundary.
Bt2—20 to 25 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; many fine and medium and few coarse roots; very few faint discontinuous clay films on all faces of peds; common medium prominent light gray (10YR 7/1) iron depletions; very strongly acid; gradual smooth boundary.
Bt3—25 to 34 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; common fine and medium and few coarse roots; very few faint discontinuous clay films on all faces of peds; common medium prominent light gray (10YR 7/1) iron depletions; very strongly acid; gradual smooth boundary.
Bt4—34 to 45 inches; yellowish brown (10YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few fine, medium, and coarse roots; very few faint discontinuous clay films on all faces of peds; common medium prominent light gray (10YR 7/1) iron depletions; very strongly acid; gradual smooth boundary.
BC—45 to 60 inches; yellowish brown (10YR 5/8) sandy loam; weak medium subangular blocky structure; friable, nonsticky, nonplastic; few fine roots; common medium prominent light gray (10YR 7/1) iron depletions; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Depth to seasonal high water table: 18 to 36 inches
Rock fragment content: 0 to 5 percent throughout the profile
Mica flakes: None or few in the solum and C horizon
Reaction: Extremely acid to strongly acid

A horizon:
Color—hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 2 to 4
Texture—sandy loam in the fine-earth fraction

E horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 6
Texture—loamy coarse sand, loamy sand, coarse sandy loam, or sandy loam in the fine-earth fraction

Bt horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8
Mottles—in shades of yellow, brown, or gray in some pedons
Texture—sandy loam, sandy clay loam, or clay loam in the fine-earth fraction and including clay in the lower part
Redoximorphic features—iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, brown, or yellow; depletions are in the upper 24 inches of the profile

BC horizon:
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 to 8
Mottles—in shades of yellow, brown, or gray in some pedons
Texture—sandy loam, sandy clay loam, or clay loam in the fine-earth fraction and including clay in the lower part
Redoximorphic features—iron depletions in shades of brown, yellow, or gray and masses of oxidized iron in shades of red, brown, or yellow

C horizon (if it occurs):
Color—hue of 7.5YR or 2.5Y, value of 5 to 7, and chroma of 3 to 6
Mottles—in shades of gray, yellow, or brown
Texture—sandy loam, sandy clay loam, or loam in the fine-earth fraction

Tatum Series

Physiographic province: Southern Piedmont, thermic
Landform: Interfluve on upland
Parent material: Phyllite residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Deep
Slope range: 2 to 15 percent

Associated Soils

- Badin soils, which have bedrock between depths of 20 and 40 inches
- Georgeville soils, which have bedrock below a depth of 60 inches
- Goldston soils, which have bedrock within a depth of 20 inches

Taxonomic Classification

Fine, mixed, semiactive, thermic Typic Hapludults

Typical Pedon

Tatum-Badin complex, 2 to 8 percent slopes; located about 5,700 feet southeast of the intersection of Highway 46 and VA715, on the east side of McRae Road; Powellton, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 42 minutes 1.00 seconds N. and long. 77 degrees 50 minutes 1.00 seconds W.

A—0 to 3 inches; brown (10YR 4/3) channery silt loam; moderate medium granular structure; very friable, slightly sticky, slightly plastic; many very fine and fine and few medium and coarse roots; 18 percent angular phyllite channers; very strongly acid; clear wavy boundary.

BA—3 to 7 inches; yellowish brown (10YR 5/4) channery silty clay loam; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine and fine and few medium and coarse roots; 18 percent angular phyllite channers; very strongly acid; clear wavy boundary.

Bt1—7 to 14 inches; yellowish red (5YR 5/6) silty clay; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; many very fine and fine, few medium, and few coarse roots; few faint patchy clay films on all faces of peds; 8 percent angular phyllite channers; very strongly acid; clear wavy boundary.

Bt2—14 to 22 inches; red (2.5YR 4/6) silty clay; common coarse prominent reddish yellow (7.5YR 7/8) mottles; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine, fine, medium, and coarse roots; common faint continuous clay films on all faces of peds; 12 percent angular phyllite channers; very strongly acid; clear wavy boundary.

Bt3—22 to 31 inches; red (2.5YR 4/6) channery silty clay; common coarse prominent reddish yellow (7.5YR 7/8) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine, fine, medium, and coarse roots; few faint discontinuous clay films on all faces of peds; 20 percent angular phyllite channers; very strongly acid; clear wavy boundary.

BCt—31 to 50 inches; red (2.5YR 4/6) channery silty clay loam; common medium distinct red (2.5YR 5/8) and common coarse prominent reddish yellow (7.5YR 7/8) mottles; moderate fine subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine, fine, medium, and coarse roots; very few faint patchy clay films on all faces of peds; 20 percent angular phyllite channers; very strongly acid; clear wavy boundary.

Cr—50 to 60 inches; weathered bedrock.

Range in Characteristics

Depth to soft bedrock: 40 to 60 inches
Depth to hard bedrock: Greater than 60 inches
Rock fragments: 15 to 35 percent in the A horizon and 0 to 20 percent in the B and C horizons
Mica flakes: None or few in the solum and C horizon
Reaction: Very strongly acid or strongly acid

Ap or A horizon:
Color—hue of 5YR or 10YR, value of 3 to 6, and chroma of 2 to 8
Texture—silt loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 to 6
Texture—silt loam or loam in the fine-earth fraction

BA or BE horizon:
Color—hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 3 to 8
Texture—silt loam, loam, or silty clay loam in the fine-earth fraction

Bt horizons:
Color—hue of 10R to 5YR, value of 4 or 5, and chroma of 4 to 8
Mottles—in shades of yellow or brown in some pedons
Texture—clay, silty clay, silty clay loam, or clay loam in the fine-earth fraction

BCt or BC horizon:
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8
Mottles—in shades of yellow or brown in some pedons
Texture—clay loam, silty clay loam, silty clay, or clay in the fine-earth fraction

C horizon (if it occurs):
Color—hue of 10R to 5YR, value of 4 to 6, and chroma of 4 to 8
Mottles—in shades of yellow, brown, gray, or red in some pedons
Texture—silt loam, loam, or silty clay loam in the fine-earth fraction

Cr horizon:
Bedrock—moderately fractured, highly weathered argillite or phyllite

Turbeville Series

Physiographic province: Southern Piedmont, thermic
Landform: High stream terrace on upland
Parent material: Old alluvium
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Cecil soils, which are residual
- Pacolet soils, which are residual

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kandiudults

Typical Pedon

Turbeville sandy loam, 2 to 8 percent slopes; located approximately 5.7 miles east of Bracey on Route 903, about 2.5 miles south on 612, about 0.3 mile west at the intersection, approximately 200 feet west in woods; in Warren County, North Carolina; lat. 36 degrees 32 minutes 18.00 seconds N. and long. 78 degrees 2 minutes 41.66 seconds W.

A—0 to 8 inches; reddish brown (5YR 4/4) loam; moderate medium granular structure; very friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; moderately acid; clear wavy boundary.

Bt1—8 to 25 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; firm, moderately sticky, moderately plastic; many very fine, fine, and medium and few coarse roots; common faint continuous clay films on all faces of peds; very strongly acid; gradual wavy boundary.

Bt2—25 to 40 inches; reddish brown (2.5YR 4/4) clay; moderate medium subangular blocky structure; firm, very sticky, moderately plastic; few very fine, fine, and medium roots; common faint continuous clay films on all faces of peds; very strongly acid; gradual wavy boundary.

Bt3—40 to 61 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; firm, very sticky, moderately plastic; few very fine, fine, and medium roots; common faint continuous clay films on all faces of peds; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Rock fragment content: 0 to 15 percent throughout the profile
Reaction: Very strongly acid to moderately acid

Ap or A horizon:
Color—hue of 5YR to 10YR, value of 4 or 5, and chroma of 2 to 4
Texture—loam in the fine-earth fraction

E horizon (if it occurs):
Color—hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8
Texture—fine sandy loam, sandy loam, or loam in the fine-earth fraction

Bt horizons:
Color—hue of 2.5YR or 5YR, value of 4 to 6, and chroma of 4 to 8
Texture—clay loam, sandy clay, or clay in the fine-earth fraction

BCt horizon (if it occurs):
Color—hue of 2.5YR to 5YR, value of 4 to 6, and chroma of 4 to 8
Texture—sandy clay loam or clay loam in the fine-earth fraction

Wedowee Series

Physiographic province: Southern Piedmont, thermic
Landform: Hillslope on upland
Parent material: Granite gneiss residuum
Drainage class: Well drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 2 to 25 percent

Associated Soils

- Appling soils, which have a thicker clay subsoil
- Ashlar soils, which have bedrock between depths of 20 and 40 inches
- Pacolet soils, which have a redder subsoil
- Rion soils, which have less clay in the subsoil

Taxonomic Classification

Fine, kaolinitic, thermic Typic Kanhapludults

Typical Pedon

Wedowee gravelly sandy loam, 15 to 25 percent slopes; located about 7,520 feet south on VA-46 from the intersection of Route 715 and VA46, about 0.4 mile from the gate on the east side of the logging road on the west side of VA46, about 200 feet in the woods; lat. 36 degrees 40 minutes 50.80 seconds N. and long. 77 degrees 51 minutes 45.10 seconds W.

A—0 to 2 inches; dark grayish brown (10YR 4/2) gravelly sandy loam; moderate medium granular structure; very friable, nonsticky, nonplastic; many very fine, fine, and medium and few coarse roots; 25 percent subangular quartz gravel; very strongly acid; clear smooth boundary.

E—2 to 6 inches; yellowish brown (10YR 5/6) gravelly sandy loam; weak medium subangular blocky structure; very friable, slightly sticky, nonplastic; many very fine and fine and few coarse roots; 25 percent subangular quartz gravel; very strongly acid; clear wavy boundary.

Bt1—6 to 16 inches; strong brown (7.5YR 5/6) sandy clay; fine faint yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium and few coarse roots; few faint continuous clay films on all faces of peds; very strongly acid; diffuse wavy boundary.

Bt2—16 to 23 inches; strong brown (7.5YR 5/6) sandy clay; common fine prominent white (10YR 8/1) mottles; moderate medium subangular blocky structure; friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; few faint continuous clay films on all faces of peds; very strongly acid; diffuse wavy boundary.

BCt—23 to 34 inches; brownish yellow (10YR 6/6) and strong brown (7.5YR 5/6) sandy clay loam; common fine prominent white (10YR 8/1) and common medium faint light yellowish brown (10YR 6/4) mottles; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine, fine, and medium roots; few faint patchy clay films on all faces of peds; very strongly acid; clear wavy boundary.

C—34 to 61 inches; brownish yellow (10YR 6/6) and strong brown (7.5YR 5/6) sandy clay loam; common medium distinct light yellowish brown (10YR 6/4) and common fine prominent white (10YR 8/1) mottles; massive; friable, nonsticky, nonplastic; strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches

Rock fragments (content, size): 15 to 35 percent in the A and E horizons and 0 to 20 percent in the B and C horizons; mostly gravel

Soil reaction: Extremely acid to strongly acid, except in limed areas; typically moderately acid or slightly acid in the upper part in limed areas

Mica flakes: None or few in the A and E horizons and the upper part of the B horizon and none to common in the lower part of the B horizon and in the C horizon

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)—sandy loam in the fine-earth fraction

E 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 sandy loam, sandy loam, or loam

BE or BA horizon (if it occurs):
Color—hue of 5YR to 10Y, value of 4 to 7, and chroma of 3 to 8
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction

Bt horizon:
Color—dominantly hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 6 to 8; some pedons lack a dominant color and include hue of 5YR or 2.5YR; the redder hues make up less than 50 percent of the matrix
Mottles (if they occur)—masses of saprolite in shades of red, brown, or yellow
Texture—clay loam, sandy clay, or clay in the fine-earth fraction

BCt or BC horizon:
Color—dominantly hue of 5YR to 10YR, value of 5 to 7, and chroma of 4 to 8; some pedons have hue of 2.5YR
Mottles—in most pedons
Texture—loam, sandy clay loam, clay loam, or sandy clay in the fine-earth fraction

C horizon:
Color—multicolored in shades of red, brown, yellow, or gray
Texture—loamy sand, sandy loam, loam, or sandy clay loam in the fine-earth fraction

Wehadkee Series

Physiographic province: Southern Piedmont, thermic
Landform: Flood plain in river valley
Parent material: Recent loamy alluvium
Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Moderately high
Depth class: Very deep
Slope range: 0 to 2 percent

Associated Soils

- Chewacla soils, which are somewhat poorly drained
- Riverview soils, which are well drained

Taxonomic Classification

Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts

Typical Pedon

Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded; located about 1.5 miles west of the Greensville County line on VA603, about 2,000 feet north of VA603; Ante, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 38 minutes 48.00 seconds N. and long. 77 degrees 43 minutes 51.00 seconds W.

A—0 to 4 inches; grayish brown (10YR 5/2) silt loam; weak fine granular structure; friable, nonsticky, slightly plastic; few very fine and fine roots throughout; few fine mica flakes; very strongly acid; clear smooth boundary.
Bg1—4 to 16 inches; light brownish gray (10YR 6/2) fine sandy loam; weak fine

granular structure; friable, nonsticky, nonplastic; few very fine and fine and few medium roots; few medium distinct dark yellowish brown (10YR 4/6) and common medium prominent reddish brown (5YR 4/4) masses of oxidized iron; few fine mica flakes; strongly acid; clear wavy boundary.

Bg2—16 to 26 inches; light brownish gray (10YR 6/2) sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky, slightly plastic; few very fine and fine roots; common medium distinct brownish yellow (10YR 6/6) masses of oxidized iron; few fine mica flakes; moderately acid; gradual wavy boundary.

Bg3—26 to 48 inches; gray (10YR 6/1) clay loam; strong medium subangular blocky structure; firm, slightly sticky, moderately plastic; few fine prominent yellowish brown (10YR 5/8) and common medium prominent olive yellow (2.5Y 6/8) masses of oxidized iron; common coarse distinct dark grayish brown (2.5Y 4/2) iron depletions; common fine mica flakes; moderately acid; gradual wavy boundary.

Bg4—48 to 62 inches; gray (N 6/0) clay loam; weak medium and coarse subangular blocky structure; friable, slightly sticky, moderately plastic; few fine distinct gray (5Y 6/1) iron depletions; many coarse prominent yellowish brown (10YR 5/8) and many fine distinct olive yellow (2.5Y 6/8) masses of oxidized iron; common fine mica flakes; strongly acid; gradual wavy boundary.

Cg—62 to 72 inches; gray (5Y 6/1) sandy clay loam; massive; friable, slightly sticky, slightly plastic; few fine prominent yellowish brown (10YR 5/8) and common fine prominent olive yellow (2.5Y 6/8) masses of oxidized iron; common medium distinct gray (N 6/0) iron depletions; common fine mica flakes; strongly acid.

Range in Characteristics

Reaction: Very strongly acid to neutral
Depth to seasonal high water table: 0 to 12 inches
Mica flakes: Few to many in the solum and C horizon
Rock fragment content: 0 to 5 percent throughout the profile

Ap or A horizon:
Color—horizon has hue of 10YR or 2.5Y or is neutral in hue, has value of 3 to 6, and has chroma of 0 to 4
Texture—silt loam in the fine-earth fraction

Bg horizon:
Color—horizon has hue of 10YR to 5Y or is neutral in hue, has value of 4 to 6, and has chroma of 0 to 2
Texture—loam, silt loam, sandy clay loam, clay loam, or silty clay loam in the fine-earth fraction
Redoximorphic features—soft masses of iron accumulation in shades of red, yellow, or brown

Cg horizon:
Color—horizon has hue of 10YR to 5Y or is neutral in hue, has value of 4 to 7, and has chroma of 0 to 2
Texture (fine-earth fraction)—loam, sandy loam, sandy clay loam, or silt loam in the fine-earth fraction
Redoximorphic features—soft masses of iron accumulation in shades of red, yellow, or brown

Worsham Series

Physiographic province: Southern Piedmont, thermic
Landform: Head of drainageway on piedmont
Parent material: Local alluvium

Drainage class: Poorly drained
Slowest saturated hydraulic conductivity: Low
Depth class: Very deep
Slope range: 2 to 8 percent

Associated Soils

- Helena soils, which are moderately well drained
- Iredell soils, which are moderately well drained
- Santuc soils, which are moderately well drained

Taxonomic Classification

Fine, mixed, active, thermic Typic Endoaquults

Typical Pedon

Worsham silt loam, 2 to 8 percent slopes; located south on Route 697 from Route 611 on right at 2195 Connell Road (Route 697), about 375 feet north-northwest into a field from a gated entrance; White Plains, Virginia 7.5 minute topographic quadrangle; lat. 36 degrees 38 minutes 44.00 seconds N. and long. 77 degrees 53 minutes 42.64 seconds W.

Ap—0 to 5 inches; very dark grayish brown (10YR 3/2) silt loam; weak fine granular structure; very friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; very strongly acid; clear smooth boundary.
Eg—5 to 10 inches; light brownish gray (10YR 6/2) silt loam; weak fine subangular blocky structure; very friable, slightly sticky, slightly plastic; many very fine, fine, and medium roots; 3 percent subangular quartz gravel; very strongly acid; clear smooth boundary.
Btg1—10 to 22 inches; grayish brown (2.5Y 5/2) clay; moderate medium subangular blocky structure; firm, moderately sticky, very plastic; many very fine, fine, and medium roots; faint continuous clay films on all faces of peds; common medium prominent yellowish brown (10YR 5/6) iron-manganese masses; very strongly acid; gradual wavy boundary.
Btg2—22 to 35 inches; gray (10YR 5/1) clay; moderate medium subangular blocky structure; firm, moderately sticky, very plastic; faint continuous clay films on all faces of peds; common medium prominent yellowish brown (10YR 5/6) iron-manganese masses; very strongly acid; gradual wavy boundary.
BCg—35 to 40 inches; gray (10YR 5/1) clay; weak medium subangular blocky structure; friable, slightly sticky, moderately plastic; common fine prominent red (2.5YR 4/6) and common medium prominent yellowish brown (10YR 5/6) iron-manganese masses; common medium faint light brownish gray (10YR 6/2) iron depletions; extremely acid; gradual wavy boundary.
Cg—40 to 60 inches; grayish brown (2.5Y 5/2) clay loam; massive; friable, slightly sticky, slightly plastic; very strongly acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Depth to seasonal high water table: 0 to 12 inches
Rock fragment content: 0 to 5 percent throughout the profile
Mica flakes: None to common in the solum and C horizon
Soil reaction: Very strongly acid or strongly acid throughout the profile, except in limed areas

A or Ap horizon:
Color—horizon has hue of 10YR to 5Y, value of 2 to 6, and chroma of 1 or 2 or is neutral in hue and has value of 3 to 7

Texture—sandy loam in the fine-earth fraction
Redoximorphic features (if they occur)—iron masses in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

Eg horizon:
Color—horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2 or is neutral in hue and has value of 3 to 7
Texture—sandy loam, fine sandy loam, loam, or silt loam in the fine-earth fraction
Redoximorphic features (if they occur)—iron masses in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

Btg horizon:
Color—horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2 or is neutral in hue and has value of 4 to 7
Texture—sandy clay, clay, or clay loam in the fine-earth fraction
Redoximorphic features (if they occur)—iron masses in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

BCg horizon or BCtg horizon:
Color—horizon has hue of 10YR or 2.5Y, value of 4 to 7, and chroma of 1 or 2 or is neutral in hue and has value of 4 to 7
Texture—loam, sandy clay loam, or clay loam in the fine-earth fraction
Redoximorphic features (if they occur)—iron masses in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

Cg horizon:
Color—horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2 or is neutral in hue and has value of 4 to 7
Texture—sandy loam, sandy clay loam, or clay loam in the fine-earth fraction
Redoximorphic features—iron masses in shades of red, yellow, or brown and iron depletions in shades of brown, yellow, or gray

Formation of the Soils

This section describes the factors and processes that have affected the formation and morphology of the soils in the survey area.

Factors of Soil Formation

Soil forms through weathering and other processes that act upon parent material. The characteristics of a soil at any given point depend upon the interaction of five soil-forming factors: parent material, climate, plants and animals, relief, and time.

Climate and plants and animals are the active forces of soil formation. They act on the parent material that has accumulated through the deposition of sediments and slowly change it into soil. Although all five factors affect the formation of every soil, the relative importance of each factor differs from place to place. In extreme cases, one factor may dominate in the formation of a soil and determine most of its properties. Generally, however, it is the combined action of the five soil-forming factors that determines the characteristics of each soil.

Parent Material

Parent material is the material in which a soil forms. It is largely responsible for the chemical and mineralogical composition of the soil and the rate at which soil-forming processes take place. Residual material, alluvial sediments, and fluviomarine sediments are the three major types of parent material in the survey area.

Residual material is earthy material derived from the weathering of rocks. It is often referred to as saprolite or residuum. Saprolite underlies the soils in the uplands, which make up most of the land area in Brunswick County. The saprolite may be several feet thick in some places and only a few inches thick in other places. Gneiss, granite, and phyllite are the three major rock types in the county. Ashlar, Rion, Cecil, and Appling are examples of soils that formed from residual material.

Alluvial sediments come from material that has been eroded from upland soils and deposited on flood plains along streams and rivers. Recent deposits are composed of sand, silt, clay, and, in some places, gravel and cobbles. The deposits are generally more than 5 feet thick. In some places the alluvial sediments are much older than the typical sediments on high stream terraces that formerly were flood plains. Chewacla, Wehadkee, and Riverview are examples of soils that formed from alluvial sediments.

Fluviomarine material is transported material that has been reworked by stream and marine action and forms the basis for the soils of the Upper Coastal Plain. It consists of tranported and reworked sands, silts, and clays that are gravelly to extremely gravelly in places. The material is layered, and texture changes abruptly in many places in vertical or horizontal directions. Soil formed from fluviomarine material is commonly strongly acid or very strongly acid and low in bases. The texture of the soil reflects the textures of the layers from which it was formed. Mattaponi and Emporia are examples of soils that formed from fluviomarine sediments.

Climate

Climate, principally through the influence of precipitation and temperature, affects the physical, chemical, and biological relationships in soils. Water from precipitation dissolves minerals, supports biological activity, and transports mineral and organic residue through the solum. Temperature determines the type and rate of physical, chemical, and biological activities.

Because precipitation exceeds evapotranspiration in the growing season, the humid climate has caused the soils to be leached. Most of the soluble materials originally in the soil or released through weathering have been removed. Exceptions to this are alluvial soils, such as Chewacla soils, which are recharged with eroded sediments from surrounding uplands. Precipitation is mainly responsible for the subsoil that characterizes most soils in the county. In addition to leaching soluble materials, water that percolates through the soil moves clay from the surface layer to the subsoil. Except for soils that formed in recent alluvium, in sand, or on very steep slopes, the soils in Brunswick County typically have subsoils that contain more clay than the surface layers.

Climate also influences the formation of blocky structure in the subsoil of well developed soils. The development of peds, or aggregates, in the subsoil is caused partly by changes in volume of the soil mass due to alternating periods of wetting and drying.

Plant and Animal Life

Plants, animals, micro-organisms, and humans are important to the formation of soils in the survey area. Plants are generally responsible for the content of organic matter, the amount of nutrients in the soil, and the color of the surface layer. Earthworms, cicada, and burrowing animals help to keep the soil open and porous. Micro-organisms decompose the vegetation and dead animal matter, thus releasing nutrients for plant food.

Native vegetation was the major living organism affecting soil development in the survey area before human settlement. The original forest cover mainly consisted of oaks, hickories, and pines. Hardwoods provide more calcium and bases to the soil through fallen leaves than coniferous trees. Thus, the soils in the survey area are not as leached as they would have been if they had formed under a pine forest. Also, since the soils formed under forest vegetation, rapid decay of organic matter and constant recycling of nutrients have prevented organic matter accumulation in large quantities. In addition, the climate favors rapid decay of plant materials, oxidation of organic matter, and leaching of nutrients.

Human activities have influenced soil development. Forests were cleared, and new plants were introduced. Cultivation, artificial drainage, and the application of lime and fertilizer have changed the characteristics of some of the soils in Brunswick County. The most important changes caused by humans are the formation of a plow layer caused by mixing the upper layers of the soils, accelerated erosion caused by cultivating steep slopes, and a change in the fertility of the soils caused by applying lime and fertilizer.

Relief

The underlying geologic formations, the geologic history of the general region, and the effects of dissection by rivers and streams largely determine the relief of an area. Relief, or topography, affects the formation of soils by influencing the quantity of water infiltration, the rate of surface water runoff, the rate of drainage in the soil, the soil temperature, and the rate of geologic erosion. Relief can alter the effects of climate on the parent material to the extent that several different kinds of soils may form from the same kind of parent material. Relief also affects the amount of radiant energy absorbed by the soils, which in turn affects the type of native vegetation growing on the soils.

Relief in the survey area ranges from nearly level to very steep. The nearly level soils are common on upland flats and on flood plains of streams. Most of the nearly level soils are often wet because of frequent flooding. The soils in these areas have a seasonal high water table. The surface water runoff is usually slow. These soils typically have a subsoil or substratum that is gray or mottled gray, and they are somewhat poorly drained or poorly drained. Wehadkee and Chewacla soils are examples of these soils.

The gently sloping to very steep soils generally are well drained or moderately well drained. On the gently sloping and sloping soils, geologic erosion is slight, surface water runoff is medium to rapid, and water infiltration is optimum. Translocation of bases and clay has usually occurred downward through the soil. However, on the steeper soils, surface runoff is very rapid, water infiltration and translocation of clay and bases through the soil are reduced, and the hazard of erosion is severe.

In most upland areas, the parent materials and other soil-forming factors are essentially the same and relief has modified the effects of the other soil-forming factors. For example, Appling and Santuc soils formed in similar parent materials, yet Appling soils, which are slightly higher on the landscape, are well drained while the adjacent Santuc soils are moderately well drained.

Time

Time influences the degree of development, or degree of horizon differentiation, within a soil. A soil that has little or no horizon development is considered a young, or immature, soil, and one that has strongly developed horizons is considered an old, or mature, soil. Other soils range in maturity between these two stages.

The oldest soils in the survey area formed on well drained uplands and old stream terraces at the higher elevations. These older soils, such as Turbeville, Mattaponi, and Emporia soils, have a strong degree of horizon differentiation. Conversely, soils such as Riverview, Chewacla, and Wehadkee formed in recent alluvium and show little or no horizon development. They are commonly stratified and have an irregular distribution of organic matter in the profile.

Processes of Horizon Differentiation

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. 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 Cecil soils, to high, as in Worsham soils.

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 brownish color. They are largely responsible for the strong brown, yellowish brown, or reddish brown colors that are dominant in the subsoil of many soils in the survey area.

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).

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.

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.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. 2002. Field indicators of hydric soils in the United States. Version 5.0.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Neale, Gay. 1975. Brunswick County, Virginia, 1720-1975.

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. 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.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

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, Natural Resources Conservation Service. National forestry manual. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://soils.usda.gov/

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.

Virginia Polytechnic Institute and State University. 1994. VALUES—Virginia Agronomic Land Use Evaluation System. *In* Soil Test Recommendations for Virginia (S.D. Donohue, ed.). Virginia Cooperative Extension.

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.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction toward which a slope faces. Also called slope aspect.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp. A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

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.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Crusts, soil. Relatively thin, somewhat continuous layers of the soil surface that often restrict water movement, air entry, and seedling emergence from the soil. They generally are less than 2 inches thick and are massive.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit a full stripcropping pattern to be used.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Draw. A small stream valley that generally is shallower and more open than a ravine or gulch and that has a broader bottom. The present stream channel may appear inadequate to have cut the drainageway that it occupies.

Ecological site. An area where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. An ecological site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other ecological sites in kind and/or proportion of species or in total production.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood plain steps that are subject to regular flooding.

Flooding frequency class. Flooding frequency class is the number of times flooding occurs over a period of time. The classes of flooding are defined as follows:

None.—There is no reasonable possibility of flooding. There is a near 0 percent chance of flooding in any year or flooding occurs less than 1 time in 500 years.

Very rare.—Flooding is very unlikely but possible under extremely unusual weather conditions. There is a less than 1 percent chance of flooding in any year or flooding occurs less than 1 time in 100 years but at least 1 time in 500 years.

Rare.—Flooding is unlikely but possible under unusual weather conditions. There is a 1 to 5 percent chance of flooding in any year or flooding occurs nearly 1 to 5 times in 100 years.

Occasional.—Flooding is expected infrequently under usual weather conditions. There is a 5 to 50 percent chance of flooding in any year or flooding occurs more than 5 to 50 times in 100 years.

Frequent.—Flooding is likely to occur often under usual weather conditions. There is a more than a 50 percent chance of flooding in any year or flooding occurs more than 50 times in 100 years, but there is a less than a 50 percent chance of flooding in all months in any year.

Very frequent.—Flooding is likely to occur very often under usual weather conditions. There is a more than a 50 percent chance of flooding in all months of any year.

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.

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

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-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

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:

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.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Landslide. A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the flood plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar. A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll. One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

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.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

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.

Mudstone. A blocky or massive, fine-grained sedimentary rock in which the proportions of clay and silt are approximately equal. Also, a general term for such material as clay, silt, claystone, siltstone, shale, and argillite and that should be used only when the amounts of clay and silt are not known or cannot be precisely identified.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent

High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as "saturated hydraulic conductivity," which is defined in the "Soil Survey Manual." In line with conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as "permeability." Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse-grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features 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.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments ranging from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Saturated hydraulic conductivity (K_{sat}). The amount of water that would move vertically through a unit area of saturated soil in unit time under unit hydraulic gradient. Terms describing saturated hydraulic conductivity, measured in inches per hour (micrometers per second), are as follows:

Very low	0.0 to 0.001417 (0.0 to 0.01)
Low	0.001417 to 0.01417 (0.01 to 0.1)
Moderately low	0.01417 to 0.1417 (0.1 to 1.0)

Moderately high	0.1417 to 1.417 (1.0 to 10)
High	1.417 to 14.7 (10 to 100)
Very high	more than 14.7 (more than 100)

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.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike. 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.

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.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for slopes are as follows:

Nearly level	0 to 2 percent
Gently sloping	2 to 6 percent
Strongly sloping	6 to 10 percent
Moderately steep	10 to 15 percent
Steep	15 to 25 percent
Very steep	25 percent and higher

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

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.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

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. A terrace can be subdivided as follows:

Low stream terrace. A terrace that is susceptible to flooding.

High stream terrace. A terrace that is not susceptible to flooding.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying “coarse,” “fine,” or “very fine.”

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, floodplain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

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.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth’s surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded. Refers to soil material consisting of coarse-grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1961-90 at Lawrenceville, Virginia)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average daily	Maximum temp. higher than--	Minimum temp. lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snow-fall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January--	48.6	26.0	37.3	73	0	17	3.56	2.02	4.93	7	4.6
February-	52.3	28.1	40.2	77	4	31	3.83	2.10	5.35	6	4.5
March----	62.0	35.5	48.8	85	15	104	3.94	2.35	5.37	7	2.1
April----	71.5	43.1	57.3	90	23	245	3.00	1.51	4.29	5	0.1
May------	78.7	51.9	65.3	92	32	474	3.87	2.26	5.31	6	0.0
June-----	85.1	59.8	72.4	97	41	672	4.09	2.23	5.73	6	0.0
July-----	88.7	64.3	76.5	99	49	818	3.97	2.05	5.64	6	0.0
August---	87.5	63.4	75.5	98	47	787	4.44	2.30	6.31	6	0.0
September	81.6	56.5	69.0	95	37	569	3.78	1.48	5.71	5	0.0
October--	72.0	45.0	56.5	87	23	282	3.52	1.37	5.32	4	0.0
November-	62.9	37.1	50.0	81	15	116	3.53	1.76	5.06	5	0.1
December-	52.1	29.5	40.8	74	6	35	3.39	2.03	4.61	6	1.4
Yearly:											
Average	70.2	45.0	57.6	---	---	---	---	---	---	---	---
Extreme	102	-10	---	100	-2	---	---	---	---	---	---
Total--	---	---	---	---	---	4,152	44.91	35.83	51.38	69	12.9

* 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).

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1976-90 at Lawrenceville, Virginia)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 11	Apr. 21	May 9
2 years in 10 later than--	Apr. 6	Apr. 17	May 4
5 years in 10 later than--	Mar. 26	Apr. 8	Apr. 24
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 20	Oct. 12	Oct. 4
2 years in 10 earlier than--	Oct. 27	Oct. 17	Oct. 8
5 years in 10 earlier than-	Nov. 9	Oct. 27	Oct. 16

Table 3.—Growing Season

(Recorded in the period 1961-90 at Lawrenceville, Virginia)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	197	180	155
8 years in 10	207	187	162
5 years in 10	227	201	173
2 years in 10	247	215	185
1 year in 10	257	222	191

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1C	Appling sandy loam, 8 to 15 percent slopes	15,679	4.3
2B	Appling-Mattaponi complex, 2 to 8 percent slopes	62,162	17.1
3D	Ashlar-Rock outcrop complex, 15 to 25 percent slopes	2,759	0.8
3E	Ashlar-Rock outcrop complex, 25 to 45 percent slopes	626	0.2
4C	Badin-Goldston complex, 8 to 15 percent slopes	803	0.2
5B	Cecil sandy loam, 2 to 8 percent slopes	38,339	10.5
5C	Cecil sandy loam, 8 to 15 percent slopes	1,118	0.3
6B3	Cecil sandy clay loam, 2 to 8 percent slopes, severely eroded	20,031	5.5
6C3	Cecil sandy clay loam, 8 to 15 percent slopes, severely eroded	49,663	13.6
7B	Cecil-Urban land complex, 2 to 8 percent slopes	933	0.3
7C	Cecil-Urban land complex, 8 to 15 percent slopes	184	*
8A	Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded	3,468	1.0
9A	Chewacla and Wehadkee soils, 0 to 2 percent slopes, frequently flooded	9,150	2.5
10B	Emporia sandy loam, 2 to 8 percent slopes	6,670	1.8
11B	Enon loam, 2 to 8 percent slopes	447	0.1
12B	Fluvanna-Lignum complex, 2 to 8 percent slopes	1,265	0.3
13B	Georgeville loam, 2 to 8 percent slopes	5,393	1.5
13C	Georgeville loam, 8 to 15 percent slopes	4,786	1.3
14C	Georgeville-Mattaponi complex, 8 to 15 percent slopes	1,920	0.5
15D	Goldston-Badin complex, 15 to 35 percent slopes	481	0.1
16B	Helena sandy loam, 2 to 8 percent slopes	31,442	8.6
16C	Helena sandy loam, 8 to 15 percent slopes	8,615	2.4
17B	Herndon loam, 2 to 8 percent slopes	3,623	1.0
18B	Iredell gravelly sandy loam, 2 to 8 percent slopes	785	0.2
18C	Iredell gravelly sandy loam, 8 to 15 percent slopes	298	*
19B	Lignum-Cid complex, 2 to 8 percent slopes	4,251	1.2
20C3	Madison clay loam, 8 to 15 percent slopes, severely eroded	3,387	0.9
20D3	Madison clay loam, 15 to 25 percent slopes, severely eroded	1,754	0.5
21B	Mattaponi gravelly sandy loam, 2 to 8 percent slopes	703	0.2
22C	Pacolet sandy loam, 8 to 15 percent slopes	1,669	0.5
22D	Pacolet sandy loam, 15 to 25 percent slopes	17,356	4.8
23B	Rion sandy loam, 2 to 8 percent slopes	2,257	0.6
23D	Rion sandy loam, 15 to 25 percent slopes	1,244	0.3
24C	Rion-Ashlar sandy loam, 8 to 15 percent slopes	12,617	3.5
25A	Riverview loam, 0 to 2 percent slopes, occasionally flooded	2,225	0.6
26B	Santuc sandy loam, 2 to 8 percent slopes	4,696	1.3
27B	Tatum-Badin complex, 2 to 8 percent slopes	520	0.1
27C	Tatum-Badin complex, 8 to 15 percent slopes	1,569	0.4
28B	Turbeville sandy loam, 2 to 8 percent slopes	308	*
29B	Wedowee gravelly sandy loam, 2 to 8 percent slopes	3,846	1.1
29C	Wedowee gravelly sandy loam, 8 to 15 percent slopes	9,011	2.5
29D	Wedowee gravelly sandy loam, 15 to 25 percent slopes	3,159	0.9
30A	Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded	16,938	4.6
31B	Worsham silt loam, 2 to 8 percent slopes	1,263	0.3
DAM	Dam	1	*
UdC	Udorthents, loamy, 2 to 8 percent slopes	1,501	0.4
W	Water	3,485	1.0
	Total	364,400	100.0

* Less than 0.1 percent.

Table 5.—Land Capability Class, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Virginia soil management group	Alfalfa hay	Corn	Pasture	Soybeans	Wheat
			Tons	Bu	AUM	Bu	Bu
1C:							
Appling	3e	V	3.5	88	7.0	31	49
2B:							
Appling	2e	V	4.0	100	8.0	35	56
Mattaponi	2e	R	4.0	120	7.0	40	56
3D:							
Ashlar	6e	FF	---	---	4.0	---	---
Rock outcrop	8s	---	---	---	---	---	---
3E:							
Ashlar	6e	FF	---	---	---	---	---
Rock outcrop	8s	---	---	---	---	---	---
4C:							
Badin	3e	X	3.5	88	5.0	31	50
Goldston	7s	JJ	---	---	2.6	---	---
5B:							
Cecil	2e	X	4.0	100	8.0	35	56
5C:							
Cecil	3e	X	3.5	88	7.5	31	49
6B3:							
Cecil	3e	X	2.4	70	5.5	25	39
6C3:							
Cecil	4e	X	2.2	62	5.0	22	35
7B:							
Cecil	2e	X	---	100	8.0	35	56
Urban land	8s	---	---	---	---	---	---
7C:							
Cecil	3e	X	---	88	8.0	35	---
Urban land	8s	---	---	---	---	---	---
8A:							
Chewacla	4w	I	---	140	11.0	40	64
9A:							
Chewacla	4w	I	---	140	11.0	40	64
Wehadkee	6w	MM	---	---	---	---	---

Table 5.—Land Capability Class, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia soil management group	Alfalfa hay	Corn	Pasture	Soybeans	Wheat
			Tons	Bu	AUM	Bu	Bu
10B:							
Emporia-----------	2e	R	---	120	8.5	40	56
11B:							
Enon--------------	2e	Y	---	65	6.5	18	29
12B:							
Fluvanna----------	2e	Y	---	100	7.5	35	48
Lignum------------	2e	KK	---	65	7.0	20	32
13B:							
Georgeville-------	2e	X	4.0	100	9.0	35	56
13C:							
Georgeville-------	3e	X	3.5	88	8.5	31	49
14C:							
Georgeville-------	3e	X	3.5	88	8.5	31	49
Mattaponi---------	3e	R	3.5	106	6.0	40	56
15D:							
Goldston----------	7s	JJ	---	---	2.4	---	---
Badin-------------	4e	X	---	---	5.0	---	---
16B:							
Helena------------	2e	KK	---	65	5.8	20	32
16C:							
Helena------------	3e	KK	---	57	5.0	18	21
17B:							
Herndon-----------	2e	V	---	100	6.5	35	56
18B:							
Iredell-----------	2e	KK	---	65	6.5	18	29
18C:							
Iredell-----------	3e	KK	---	65	5.5	16	25
19B:							
Lignum------------	2w	KK	---	65	5.0	20	32
Cid---------------	2e	KK	---	65	7.0	20	32
20C3:							
Madison-----------	4e	X	---	62	4.5	---	---
20D3:							
Madison-----------	6e	X	---	---	4.0	---	---
21B:							
Mattaponi---------	2e	R	3.6	120	5.5	40	56
22C:							
Pacolet-----------	3e	X	3.2	108	8.0	31	---

Table 5.—Land Capability Class, Virginia Soil Management Group, and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Virginia soil management group	Alfalfa hay	Corn	Pasture	Soybeans	Wheat
			Tons	Bu	AUM	Bu	Bu
22D:							
Pacolet-----------	4e	X	---	---	7.0	---	---
23B:							
Rion--------------	2e	X	4.0	100	6.5	30	56
23D:							
Rion--------------	4e	X	---	---	4.5	---	---
24C:							
Rion--------------	3e	X	3.5	88	5.5	31	50
Ashlar------------	3e	FF	---	75	5.0	---	42
25A:							
Riverview---------	2w	A	6.0	160	8.0	40	64
26B:							
Santuc------------	2e	G	---	140	7.0	40	64
27B:							
Tatum-------------	2e	X	4.0	100	7.0	35	56
Badin-------------	2e	X	4.0	100	---	35	70
27C:							
Tatum-------------	3e	X	3.5	88	7.0	28	49
Badin-------------	3e	X	3.5	88	7.0	30	40
28B:							
Turbeville--------	2e	O	4.5	130	---	40	64
29B:							
Wedowee-----------	2e	V	3.6	90	6.0	---	---
29C:							
Wedowee-----------	3e	V	3.2	79	4.0	---	---
29D:							
Wedowee-----------	4e	V	---	---	3.5	---	---
30A:							
Wehadkee----------	6w	MM	---	---	---	---	---
31B:							
Worsham-----------	4w	HH	---	85	3.0	25	48
DAM.							
Dam							
UdC:							
Udorthents, loamy-	7e	---	---	---	---	---	---
W.							
Water							

Table 6.—Prime 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 the "Farmland classification" column)

Map symbol	Map unit name	Farmland classification
2B	Appling-Mattaponi complex, 2 to 8 percent slopes	All areas are prime farmland
5B	Cecil sandy loam, 2 to 8 percent slopes	All areas are prime farmland
10B	Emporia sandy loam, 2 to 8 percent slopes	All areas are prime farmland
11B	Enon loam, 2 to 8 percent slopes	All areas are prime farmland
12B	Fluvanna-Lignum complex, 2 to 8 percent slopes	All areas are prime farmland
13B	Georgeville loam, 2 to 8 percent slopes	All areas are prime farmland
16B	Helena sandy loam, 2 to 8 percent slopes	All areas are prime farmland
17B	Herndon loam, 2 to 8 percent slopes	All areas are prime farmland
19B	Lignum-Cid complex, 2 to 8 percent slopes	All areas are prime farmland
23B	Rion sandy loam, 2 to 8 percent slopes	All areas are prime farmland
26B	Santuc sandy loam, 2 to 8 percent slopes	All areas are prime farmland
27B	Tatum-Badin complex, 2 to 8 percent slopes	All areas are prime farmland
28B	Turbeville sandy loam, 2 to 8 percent slopes	All areas are prime farmland
29B	Wedowee gravelly sandy loam, 2 to 8 percent slopes	All areas are prime farmland
1C	Appling sandy loam, 8 to 15 percent slopes	Farmland of statewide importance
4C	Badin-Goldston complex, 8 to 15 percent slopes	Farmland of statewide importance
5C	Cecil sandy loam, 8 to 15 percent slopes	Farmland of statewide importance
13C	Georgeville loam, 8 to 15 percent slopes	Farmland of statewide importance
14C	Georgeville-Mattaponi complex, 8 to 15 percent slopes	Farmland of statewide importance
16C	Helena sandy loam, 8 to 15 percent slopes	Farmland of statewide importance
22C	Pacolet sandy loam, 8 to 15 percent slopes	Farmland of statewide importance
22D	Pacolet sandy loam, 15 to 25 percent slopes	Farmland of statewide importance
23D	Rion sandy loam, 15 to 25 percent slopes	Farmland of statewide importance
24C	Rion-Ashlar sandy loam, 8 to 15 percent slopes	Farmland of statewide importance
27C	Tatum-Badin complex, 8 to 15 percent slopes	Farmland of statewide importance
29C	Wedowee gravelly sandy loam, 8 to 15 percent slopes	Farmland of statewide importance
29D	Wedowee gravelly sandy loam, 15 to 25 percent slopes	Farmland of statewide importance
8A	Chewacla silt loam, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained
25A	Riverview loam, 0 to 2 percent slopes, occasionally flooded	Prime farmland if drained
31B	Worsham silt loam, 2 to 8 percent slopes	Prime farmland if drained
9A	Chewacla and Wehadkee soils, 0 to 2 percent slopes, frequently flooded	Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
30A	Wehadkee silt loam, 0 to 2 percent slopes, frequently flooded	Prime farmland if protected from flooding or not frequently flooded during the growing season

Table 7.—Agricultural Waste Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C:					
Appling	85	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.77
		Too acid	0.22	Slope	0.37
		Low adsorption	0.16		
2B:					
Appling	60	Somewhat limited		Somewhat limited	
		Too acid	0.22	Too acid	0.77
		Low adsorption	0.16		
Mattaponi	35	Somewhat limited		Very limited	
		Too acid	0.50	Too acid	0.99
		Depth to saturated zone	0.46	Depth to saturated zone	0.46
		Slow water movement	0.30	Slow water movement	0.22
3D:					
Ashlar	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Droughty	0.98	Too acid	1.00
		Too acid	0.62	Droughty	0.98
Rock outcrop	15	Not rated		Not rated	
3E:					
Ashlar	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Droughty	0.98	Too acid	1.00
		Too acid	0.62	Droughty	0.98
Rock outcrop	15	Not rated		Not rated	
4C:					
Badin	60	Somewhat limited		Very limited	
		Slope	0.63	Too acid	0.99
		Too acid	0.50	Slope	0.63
		Depth to bedrock	0.03	Depth to bedrock	0.03
Goldston	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Droughty	1.00	Droughty	1.00
		Slope	0.63	Too acid	0.91
5B:					
Cecil	90	Somewhat limited		Somewhat limited	
		Low adsorption	0.27	Too acid	0.77
		Too acid	0.22		

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
5C:					
Cecil	90	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.77
		Low adsorption	0.27	Slope	0.37
		Too acid	0.22		
6B3:					
Cecil	88	Somewhat limited		Somewhat limited	
		Low adsorption	0.27	Too acid	0.77
		Too acid	0.22		
6C3:					
Cecil	90	Somewhat limited		Somewhat limited	
		Low adsorption	0.60	Too acid	0.77
		Slope	0.37	Slope	0.37
		Too acid	0.22	Low adsorption	0.17
7B:					
Cecil	85	Somewhat limited		Somewhat limited	
		Low adsorption	0.27	Too acid	0.77
		Too acid	0.22		
Urban land	15	Not rated		Not rated	
7C:					
Cecil	85	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.77
		Low adsorption	0.27	Slope	0.37
		Too acid	0.22		
Urban land	15	Not rated		Not rated	
8A:					
Chewacla	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	0.60	Flooding	1.00
		Too acid	0.32	Too acid	0.91
9A:					
Chewacla	60	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Too acid	0.32	Too acid	0.91
Wehadkee	40	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Runoff	0.40	Too acid	0.31
10B:					
Emporia	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.89	Too acid	0.91
		Too acid	0.32	Slow water movement	0.78
		Depth to saturated zone	0.02	Depth to saturated zone	0.02

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
11B:					
Enon	85	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Runoff	0.40	Too acid	0.07
		Too acid	0.02		
12B:					
Fluvanna	50	Somewhat limited		Very limited	
		Slow water movement	0.89	Too acid	0.99
		Too acid	0.50	Slow water movement	0.78
Lignum	35	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Too acid	0.99
		Too acid	0.50	Depth to saturated zone	0.99
13B:					
Georgeville	85	Somewhat limited		Somewhat limited	
		Low adsorption	0.68	Too acid	0.91
		Too acid	0.32	Low adsorption	0.72
13C:					
Georgeville	85	Somewhat limited		Somewhat limited	
		Low adsorption	0.68	Too acid	0.91
		Slope	0.37	Low adsorption	0.72
		Too acid	0.32	Slope	0.37
14C:					
Georgeville	85	Somewhat limited		Somewhat limited	
		Low adsorption	0.68	Too acid	0.91
		Slope	0.63	Low adsorption	0.72
		Too acid	0.32	Slope	0.63
Mattaponi	15	Somewhat limited		Very limited	
		Slope	0.63	Too acid	0.99
		Too acid	0.50	Slope	0.63
		Depth to saturated zone	0.46	Depth to saturated zone	0.46
15D:					
Goldston	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Droughty	1.00	Droughty	1.00
Badin	15	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.50	Too acid	0.99
		Depth to bedrock	0.03	Depth to bedrock	0.03

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
16B:					
Helena	85	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too acid	0.22	Too acid	0.77
16C:					
Helena	85	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Slope	0.37	Too acid	0.77
17B:					
Herndon	85	Somewhat limited		Somewhat limited	
		Low adsorption	0.47	Too acid	0.77
		Too acid	0.22	Low adsorption	0.20
18B:					
Iredell	85	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Leaching	0.50	Too acid	0.07
18C:					
Iredell	82	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Leaching	0.50	Slope	0.37
19B:					
Lignum	60	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Too acid	0.99
		Too acid	0.50	Depth to saturated zone	0.99
Cid	35	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.99	Too acid	1.00
		Too acid	0.78	Depth to saturated zone	0.99
20C3:					
Madison	88	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.67
		Too acid	0.18	Slope	0.37
		Low adsorption	0.01	Low adsorption	0.02

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
20D3:					
Madison	88	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.18	Too acid	0.67
		Low adsorption	0.01	Low adsorption	0.02
21B:					
Mattaponi	85	Somewhat limited		Very limited	
		Too acid	0.50	Too acid	0.99
		Depth to saturated zone	0.46	Depth to saturated zone	0.46
		Slow water movement	0.30	Slow water movement	0.22
22C:					
Pacolet	88	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.77
		Too acid	0.22	Slope	0.37
22D:					
Pacolet	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.22	Too acid	0.77
23B:					
Rion	90	Somewhat limited		Somewhat limited	
		Too acid	0.22	Too acid	0.77
23D:					
Rion	88	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.22	Too acid	0.77
24C:					
Rion	60	Somewhat limited		Somewhat limited	
		Slope	0.37	Too acid	0.77
		Too acid	0.22	Slope	0.37
Ashlar	40	Somewhat limited		Very limited	
		Droughty	0.98	Too acid	1.00
		Too acid	0.62	Droughty	0.98
		Slope	0.37	Slope	0.37
25A:					
Riverview	88	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
		Depth to saturated zone	0.46	Depth to saturated zone	0.46
		Too acid	0.08	Too acid	0.31
26B:					
Santuc	85	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.46	Too acid	0.99
		Too acid	0.43	Depth to saturated zone	0.46

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value
27B:					
Tatum	85	Somewhat limited		Very limited	
		Too acid	0.50	Too acid	0.99
Badin	15	Somewhat limited		Very limited	
		Too acid	0.50	Too acid	0.99
		Depth to bedrock	0.03	Depth to bedrock	0.03
27C:					
Tatum	85	Somewhat limited		Very limited	
		Too acid	0.50	Too acid	0.99
		Slope	0.37	Slope	0.37
Badin	15	Somewhat limited		Very limited	
		Too acid	0.50	Too acid	0.99
		Slope	0.37	Slope	0.37
		Depth to bedrock	0.03	Depth to bedrock	0.03
28B:					
Turbeville	85	Somewhat limited		Very limited	
		Low adsorption	0.64	Too acid	0.99
		Too acid	0.50	Low adsorption	0.34
29B:					
Wedowee	88	Somewhat limited		Very limited	
		Too acid	0.73	Too acid	1.00
		Low adsorption	0.14		
29C:					
Wedowee	90	Somewhat limited		Very limited	
		Too acid	0.73	Too acid	1.00
		Slope	0.37	Slope	0.37
		Low adsorption	0.14		
29D:					
Wedowee	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Too acid	0.73	Too acid	1.00
		Low adsorption	0.14		
30A:					
Wehadkee	88	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Runoff	0.40	Too acid	0.31
31B:					
Worsham	85	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	0.50	Too acid	0.99
DAM:					
Dam	95	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Application of manure and food-processing waste		Application of sewage sludge	
		Rating class and limiting features	Value	Rating class and limiting features	Value
UdC:					
Udorthents, loamy---	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.30	Slow water movement	0.22
		Too acid	0.02	Too acid	0.07
W:					
Water---------------	100	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C:					
Appling-------------	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.77	Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.77
2B:					
Appling-------------	60	Somewhat limited		Very limited	
		Too acid	0.77	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.77
		Low adsorption	0.16	Low adsorption	0.16
Mattaponi-----------	35	Very limited		Very limited	
		Too acid	0.99	Seepage	1.00
		Depth to saturated zone	0.46	Too acid	0.99
		Too steep for surface application	0.32	Depth to saturated zone	0.46
3D:					
Ashlar--------------	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Too acid	1.00
Rock outcrop--------	15	Not rated		Not rated	
3E:					
Ashlar--------------	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Too acid	1.00
Rock outcrop--------	15	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
4C:					
Badin	60	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 acid	0.99		
		Too steep for sprinkler application	0.78		
Goldston	40	Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	1.00
				Too steep for surface application	1.00
		Droughty	1.00		
5B:					
Cecil	90	Somewhat limited		Very limited	
		Too acid	0.77	Seepage	1.00
		Low adsorption	0.27	Too acid	0.77
		Too steep for surface application	0.08	Low adsorption	0.27
5C:					
Cecil	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Too steep for surface application	0.94
		Too acid	0.77		
		Too steep for sprinkler application	0.60	Too acid	0.77
6B3:					
Cecil	88	Somewhat limited		Very limited	
		Too acid	0.77	Seepage	1.00
		Low adsorption	0.27	Too acid	0.77
		Too steep for surface application	0.08	Low adsorption	0.27
6C3:					
Cecil	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
				Too steep for surface application	0.94
		Too acid	0.77		
		Too steep for sprinkler application	0.60	Too acid	0.77

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
7B:					
Cecil	85	Somewhat limited		Very limited	
		Too acid	0.77	Seepage	1.00
		Low adsorption	0.27	Too acid	0.77
		Too steep for surface application	0.08	Low adsorption	0.27
Urban land	15	Not rated		Not rated	
7C:					
Cecil	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.77	Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.77
Urban land	15	Not rated		Not rated	
8A:					
Chewacla	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Too acid	0.91	Seepage	1.00
		Flooding	0.60	Depth to saturated zone	1.00
9A:					
Chewacla	60	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Seepage	1.00
		Too acid	0.91	Depth to saturated zone	1.00
Wehadkee	40	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Seepage	1.00
		Too acid	0.31	Depth to saturated zone	1.00
10B:					
Emporia	85	Somewhat limited		Very limited	
		Too acid	0.91	Seepage	1.00
		Slow water movement	0.78	Too acid	0.91
		Too steep for surface application	0.32	Depth to saturated zone	0.02
11B:					
Enon	85	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.07
		Too acid	0.07		

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
12B:					
Fluvanna	50	Very limited		Very limited	
		Too acid	0.99	Seepage	1.00
		Slow water movement	0.78	Too acid	0.99
		Too steep for surface application	0.32		
Lignum	35	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too acid	0.99	Too acid	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
13B:					
Georgeville	85	Somewhat limited		Very limited	
		Too acid	0.91	Seepage	1.00
		Low adsorption	0.68	Too acid	0.91
		Too steep for surface application	0.32	Low adsorption	0.68
13C:					
Georgeville	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.91	Too steep for surface application	0.94
		Low adsorption	0.68	Too acid	0.91
14C:					
Georgeville	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.91	Too steep for surface application	1.00
		Too steep for sprinkler application	0.78	Too acid	0.91
Mattaponi	15	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
15D:					
Goldston	85	Very limited		Very limited	
		Depth to bedrock	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

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
15D:					
Badin	15	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
16B:					
Helena	85	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too acid	0.77	Too acid	0.77
16C:					
Helena	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Too steep for surface application	0.94
17B:					
Herndon	85	Somewhat limited		Very limited	
		Too acid	0.77	Seepage	1.00
		Low adsorption	0.47	Too acid	0.77
		Too steep for surface application	0.32	Low adsorption	0.47
18B:					
Iredell	85	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Too steep for surface application	0.32	Too acid	0.07
18C:					
Iredell	82	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Too steep for surface application	0.94

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
19B:					
Lignum	60	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too acid	0.99	Too acid	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
Cid	35	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too acid	1.00	Depth to bedrock	1.00
		Depth to saturated zone	0.99	Too acid	1.00
20C3:					
Madison	88	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.67	Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.67
20D3:					
Madison	88	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	0.67	Too acid	0.67
21B:					
Mattaponi	85	Very limited		Very limited	
		Too acid	0.99	Seepage	1.00
		Depth to saturated zone	0.46	Too acid	0.99
		Slow water movement	0.22	Depth to saturated zone	0.46
22C:					
Pacolet	88	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.77	Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.77

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
22D:					
Pacolet	90	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	0.77	Too acid	0.77
23B:					
Rion	90	Somewhat limited		Very limited	
		Too acid	0.77	Seepage	1.00
		Too steep for surface application	0.32	Too acid	0.77
23D:					
Rion	88	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
24C:					
Rion	60	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.77	Too steep for surface application	0.94
		Too steep for sprinkler application	0.60	Too acid	0.77
Ashlar	40	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	1.00	Too acid	1.00
		Droughty	0.98	Too steep for surface application	0.94
25A:					
Riverview	88	Somewhat limited		Very limited	
		Flooding	0.60	Flooding	1.00
		Depth to saturated zone	0.46	Seepage	1.00
		Too acid	0.31	Depth to saturated zone	0.46
26B:					
Santuc	85	Somewhat limited		Very limited	
		Too acid	0.99	Seepage	1.00
		Depth to saturated zone	0.46	Too acid	0.99
		Too steep for surface application	0.32	Depth to saturated zone	0.46

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
27B:					
Tatum	85	Very limited		Very limited	
		Too acid	0.99	Seepage	1.00
		Too steep for surface application	0.68	Too acid	0.99
				Depth to bedrock	0.42
Badin	15	Very limited		Very limited	
		Too acid	0.99	Seepage	1.00
		Too steep for surface application	0.68	Depth to bedrock	1.00
		Depth to bedrock	0.03	Too acid	0.99
27C:					
Tatum	85	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	0.60	Too steep for surface application	0.94
Badin	15	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	0.60	Too acid	0.99
28B:					
Turbeville	85	Very limited		Very limited	
		Too acid	0.99	Seepage	1.00
		Low adsorption	0.64	Too acid	0.99
		Too steep for surface application	0.32	Low adsorption	0.64
29B:					
Wedowee	88	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Low adsorption	0.14	Too acid	1.00
		Too steep for surface application	0.08	Low adsorption	0.14
29C:					
Wedowee	90	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	0.60	Too steep for surface application	0.94

Table 7.—Agricultural Waste Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation: Rating class and limiting features	Value	Overland flow of wastewater: Rating class and limiting features	Value
29D:					
Wedowee	85	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Too acid	1.00
30A:					
Wehadkee	88	Very limited		Very limited	
		Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Seepage	1.00
		Too acid	0.31	Depth to saturated zone	1.00
31B:					
Worsham	85	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too acid	0.99	Too acid	0.99
DAM:					
Dam	95	Not rated		Not rated	
UdC:					
Udorthents, loamy	85	Somewhat limited		Somewhat limited	
		Too steep for surface application	0.68	Seepage	0.77
		Slow water movement	0.22	Too acid	0.07
		Too acid	0.07		
W:					
Water	100	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
1C:					
Appling	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.77
2B:					
Appling	60	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.77
		Slope	0.12	Too steep for surface application	0.32
				Low adsorption	0.16
Mattaponi	35	Very limited		Very limited	
		Slow water movement	1.00	Too acid	0.99
		Depth to saturated zone	0.47	Depth to saturated zone	0.46
		Slope	0.12	Too steep for surface application	0.32
3D:					
Ashlar	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
		Too acid	0.03	Too acid	1.00
Rock outcrop	15	Not rated		Not rated	
3E:					
Ashlar	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too steep for sprinkler irrigation	1.00
		Too acid	0.03	Too acid	1.00
Rock outcrop	15	Not rated		Not rated	

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
4C:					
Badin	60	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
Goldston	40	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
5B:					
Cecil	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.77
				Low adsorption	0.27
				Too steep for surface application	0.08
5C:					
Cecil	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.77
6B3:					
Cecil	88	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.77
				Low adsorption	0.27
				Too steep for surface application	0.08
6C3:					
Cecil	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.77

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
7B:					
Cecil	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.77
				Low adsorption	0.27
				Too steep for surface application	0.08
Urban land	15	Not rated		Not rated	
7C:					
Cecil	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.77
Urban land	15	Not rated		Not rated	
8A:					
Chewacla	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Too acid	0.91
		Flooding	0.60	Flooding	0.60
9A:					
Chewacla	60	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	0.91
Wehadkee	40	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	0.31
10B:					
Emporia	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.91
		Slope	0.12	Slow water movement	0.60
		Depth to saturated zone	0.02	Too steep for surface application	0.32

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
11B:					
Enon	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Slow water movement	0.94
		Slope	0.12	Too steep for surface application	0.32
				Too acid	0.07
12B:					
Fluvanna	50	Very limited		Very limited	
		Slow water movement	1.00	Too acid	0.99
		Slope	0.12	Slow water movement	0.60
				Too steep for surface application	0.32
Lignum	35	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to bedrock	1.00	Too acid	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
13B:					
Georgeville	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.91
		Slope	0.12	Low adsorption	0.68
				Too steep for surface application	0.32
13C:					
Georgeville	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.91
14C:					
Georgeville	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.91
Mattaponi	15	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 saturated zone	0.47	Too acid	0.99

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
15D:					
Goldston	85	Very limited		Very limited	
		Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
Badin	15	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
16B:					
Helena	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Slow water movement	0.94
		Too acid	0.21	Too acid	0.77
16C:					
Helena	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Too steep for sprinkler irrigation	0.94
17B:					
Herndon	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.77
		Too acid	0.14	Low adsorption	0.47
		Slope	0.12	Too steep for surface application	0.32
18B:					
Iredell	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Slow water movement	0.94
		Slope	0.12	Too steep for surface application	0.32

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
18C:					
Iredell	82	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Too steep for sprinkler irrigation	0.94
19B:					
Lignum	60	Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00
		Depth to bedrock	1.00	Too acid	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
Cid	35	Very limited		Very limited	
		Slow water movement	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99
20C3:					
Madison	88	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
				Too acid	0.67
20D3:					
Madison	88	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	0.67
21B:					
Mattaponi	85	Very limited		Very limited	
		Slow water movement	1.00	Too acid	0.99
		Depth to saturated zone	0.47	Depth to saturated zone	0.46
				Slow water movement	0.15

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater		Slow rate treatment of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
22C:					
Pacolet	88	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
				Too acid	0.77
22D:					
Pacolet	90	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
				Too acid	0.77
23B:					
Rion	90	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.77
		Slope	0.12	Too steep for surface application	0.32
23D:					
Rion	88	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
24C:					
Rion	60	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
				Too acid	0.77
Ashlar	40	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	0.32	Too acid	1.00
		Too acid	0.03	Too steep for sprinkler irrigation	0.94

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
25A:					
Riverview	88	Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Flooding	0.60
		Slow water movement	1.00	Depth to saturated zone	0.46
		Flooding	0.60	Too acid	0.31
26B:					
Santuc	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too acid	0.99
		Depth to saturated zone	0.47	Depth to saturated zone	0.46
		Slope	0.12	Too steep for surface application	0.32
27B:					
Tatum	85	Very limited		Very limited	
		Depth to bedrock	1.00	Too acid	0.99
		Slow water movement	1.00	Too steep for surface application	0.68
		Slope	0.50	Depth to bedrock	0.42
Badin	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too acid	0.99
		Slope	0.50	Too steep for surface application	0.68
27C:					
Tatum	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too acid	0.99
		Slow water movement	1.00	Too steep for sprinkler irrigation	0.94
Badin	15	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	0.99
28B:					
Turbeville	85	Very limited		Very limited	
		Slow water movement	1.00	Too acid	0.99
		Slope	0.12	Low adsorption	0.64
				Too steep for surface application	0.32

Table 7.—Agricultural Waste Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Rapid infiltration of wastewater: Rating class and limiting features	Value	Slow rate treatment of wastewater: Rating class and limiting features	Value
29B:					
Wedowee	88	Very limited		Very limited	
		Slow water movement	1.00	Too acid	1.00
		Too acid	0.14	Low adsorption	0.14
				Too steep for surface application	0.08
29C:					
Wedowee	90	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	0.94
29D:					
Wedowee	85	Very limited		Very limited	
		Slope	1.00	Too steep for surface application	1.00
		Slow water movement	1.00	Too steep for sprinkler irrigation	1.00
		Too acid	0.14	Too acid	1.00
30A:					
Wehadkee	88	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	0.31
31B:					
Worsham	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slow water movement	1.00
		Slope	0.12	Too acid	0.99
DAM:					
Dam	95	Not rated		Not rated	
UdC:					
Udorthents, loamy	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Too steep for surface application	0.68
		Slope	0.50	Slow water movement	0.15
				Too acid	0.07
W:					
Water	100	Not rated		Not rated	

Table 8.—Forestland Productivity

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
1C:				
Appling	loblolly pine	85	114	loblolly pine, shortleaf pine
	scarlet oak	74	57	
	shortleaf pine	65	100	
	Virginia pine	74	114	
	white oak	64	43	
	yellow-poplar	100	86	
2B:				
Appling	loblolly pine	85	114	loblolly pine, shortleaf pine
	scarlet oak	74	57	
	shortleaf pine	65	100	
	Virginia pine	74	114	
	white oak	64	43	
	yellow-poplar	100	86	
Mattaponi	loblolly pine	85	114	loblolly pine, shortleaf pine
	sweetgum	76	72	
	Virginia pine	70	114	
	white oak	70	57	
3D:				
Ashlar	loblolly pine	75	114	eastern white pine, loblolly pine, shortleaf pine
	northern red oak	60	43	
	shortleaf pine	70	114	
	Virginia pine	70	114	
Rock outcrop.				
3E:				
Ashlar	loblolly pine	75	114	eastern white pine, loblolly pine, shortleaf pine
	northern red oak	60	43	
	shortleaf pine	70	114	
	Virginia pine	70	114	
Rock outcrop.				
4C:				
Badin	loblolly pine	80	110	loblolly pine, shortleaf pine
	shortleaf pine	69	108	
	white oak	68	50	
Goldston	loblolly pine	76	100	loblolly pine
	shortleaf pine	68	100	
	southern red oak	66	43	
	white oak	69	57	
5B:				
Cecil	loblolly pine	85	114	loblolly pine, shortleaf pine
	shortleaf pine	69	114	
	white oak	79	57	
	northern red oak	81	57	
	scarlet oak	81	57	
	sweetgum	100	72	
	yellow-poplar	100	86	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
5C:				
Cecil	loblolly pine	83	114	loblolly pine, shortleaf pine
	shortleaf pine	69	114	
	white oak	79	57	
	northern red oak	81	57	
	scarlet oak	81	57	
	sweetgum	76	72	
	yellow-poplar	92	86	
6B3:				
Cecil	loblolly pine	83	114	loblolly pine, shortleaf pine
	shortleaf pine	69	114	
	white oak	79	57	
	northern red oak	81	57	
	scarlet oak	81	57	
	sweetgum	76	72	
	yellow-poplar	92	86	
6C3:				
Cecil	loblolly pine	83	114	loblolly pine, shortleaf pine
	shortleaf pine	69	114	
	white oak	79	57	
	northern red oak	81	57	
	scarlet oak	81	57	
	sweetgum	76	72	
	yellow-poplar	92	86	
7B:				
Cecil	loblolly pine	83	114	loblolly pine, shortleaf pine
	shortleaf pine	69	114	
	white oak	79	57	
	northern red oak	81	57	
	scarlet oak	81	57	
	sweetgum	76	72	
	yellow-poplar	92	86	
Urban land.				
7C:				
Cecil	loblolly pine	83	114	loblolly pine, shortleaf pine
	shortleaf pine	69	114	
	white oak	79	57	
	northern red oak	81	57	
	scarlet oak	81	57	
	sweetgum	76	72	
	yellow-poplar	92	86	
Urban land.				
8A:				
Chewacla	loblolly pine	84	143	American sycamore, loblolly pine, sweetgum, yellow-poplar
	sweetgum	100	129	
	water oak	80	72	
	yellow-poplar	95	100	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
9A:				
Chewacla	loblolly pine	84	143	American sycamore, loblolly pine, sweetgum, yellow-poplar
	sweetgum	100	129	
	water oak	80	72	
	yellow-poplar	95	100	
Wehadkee	yellow-poplar	100	114	green ash, sweetgum, willow oak, yellow-poplar
	sweetgum	94	114	
	willow oak	110	114	
	water oak	91	86	
10B:				
Emporia	loblolly pine	85	100	loblolly pine, sweetgum
	southern red oak	70	57	
11B:				
Enon	loblolly pine	67	86	eastern redcedar, loblolly pine
	post oak	44	29	
	shortleaf pine	58	86	
	white oak	47	29	
12B:				
Fluvanna	loblolly pine	76	100	loblolly pine, Virginia pine
	northern red oak	70	57	
	shortleaf pine	63	100	
	Virginia pine	74	114	
Lignum	loblolly pine	76	100	---
	northern red oak	68	57	
	shortleaf pine	66	100	
	southern red oak	68	57	
	Virginia pine	74	114	
13B:				
Georgeville	loblolly pine	81	114	black walnut, eastern redcedar, loblolly pine, Virginia pine, yellow-poplar
	longleaf pine	67	72	
	scarlet oak	70	57	
	shortleaf pine	63	100	
	southern red oak	67	43	
	white oak	69	57	
13C:				
Georgeville	loblolly pine	81	114	black walnut, eastern redcedar, loblolly pine, Virginia pine, yellow-poplar
	longleaf pine	67	72	
	scarlet oak	70	57	
	shortleaf pine	63	100	
	southern red oak	67	43	
	white oak	69	57	
14C:				
Georgeville	loblolly pine	81	114	black walnut, eastern redcedar, loblolly pine, Virginia pine, yellow-poplar
	longleaf pine	67	72	
	scarlet oak	70	57	
	shortleaf pine	63	100	
	southern red oak	67	43	
	white oak	69	57	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
14C:				
Mattaponi	loblolly pine	80	114	loblolly pine, shortleaf pine
	sweetgum	76	72	
	Virginia pine	70	114	
	white oak	70	57	
15D:				
Goldston	loblolly pine	74	100	loblolly pine
	shortleaf pine	68	100	
	southern red oak	59	43	
	white oak	69	57	
Badin	loblolly pine	80	110	---
	shortleaf pine	69	108	
	white oak	68	50	
16B:				
Helena	loblolly pine	84	114	loblolly pine, yellow-poplar
	shortleaf pine	66	100	
16C:				
Helena	loblolly pine	84	114	loblolly pine, yellow-poplar
	shortleaf pine	66	100	
17B:				
Herndon	loblolly pine	80	114	loblolly pine, yellow-poplar
	shortleaf pine	61	86	
	southern red oak	72	57	
	white oak	65	43	
	yellow-poplar	91	86	
18B:				
Iredell	loblolly pine	67	86	eastern redcedar, loblolly pine
	post oak	44	29	
	shortleaf pine	58	86	
	white oak	47	29	
18C:				
Iredell	loblolly pine	67	86	eastern redcedar, loblolly pine
	post oak	44	29	
	shortleaf pine	58	86	
	white oak	47	29	
19B:				
Lignum	loblolly pine	76	100	---
	northern red oak	68	57	
	shortleaf pine	66	100	
	southern red oak	68	57	
	Virginia pine	74	114	
Cid	loblolly pine	85	120	---
	shortleaf pine	56	86	
	white oak	52	32	
20C3:				
Madison	loblolly pine	72	100	loblolly pine, shortleaf pine
	northern red oak	66	43	
	shortleaf pine	62	86	
	Virginia pine	66	100	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
20D3:				
Madison	loblolly pine	72	100	loblolly pine, shortleaf pine
	northern red oak	66	43	
	shortleaf pine	62	86	
	Virginia pine	66	100	
21B:				
Mattaponi	loblolly pine	80	114	loblolly pine, shortleaf pine
	sweetgum	76	72	
	Virginia pine	70	114	
	white oak	70	57	
22C:				
Pacolet	loblolly pine	78	114	loblolly pine, shortleaf pine, yellow-poplar, eastern white pine
	shortleaf pine	70	114	
	yellow-poplar	90	86	
22D:				
Pacolet	loblolly pine	74	114	loblolly pine, shortleaf pine, yellow-poplar, eastern white pine
	shortleaf pine	70	114	
	yellow-poplar	79	86	
23B:				
Rion	loblolly pine	80	114	loblolly pine, shortleaf pine, yellow-poplar
	post oak	65	43	
	shortleaf pine	70	114	
	southern red oak	80	57	
	sweetgum	80	86	
	white oak	70	57	
	yellow-poplar	90	86	
23D:				
Rion	loblolly pine	80	114	loblolly pine, shortleaf pine, yellow-poplar
	post oak	65	43	
	shortleaf pine	70	114	
	southern red oak	80	57	
	sweetgum	80	86	
	white oak	70	57	
	yellow-poplar	90	86	
24C:				
Rion	loblolly pine	80	114	loblolly pine, shortleaf pine, yellow-poplar
	post oak	65	43	
	shortleaf pine	70	114	
	sweetgum	80	86	
	white oak	70	57	
	yellow-poplar	90	86	
Ashlar	loblolly pine	85	114	eastern white pine, loblolly pine, shortleaf pine
	northern red oak	60	43	
	shortleaf pine	70	114	
	Virginia pine	70	114	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
25A:				
Riverview	loblolly pine	100	157	American sycamore, eastern cottonwood, loblolly pine, slash pine, sweetgum, yellow-poplar
	sweetgum	100	143	
	yellow-poplar	110	129	
26B:				
Santuc	loblolly pine	95	142	loblolly pine, yellow-poplar
	shortleaf pine	70	110	
	white oak	70	52	
	yellow-poplar	90	90	
27B:				
Tatum	chestnut oak	68	100	loblolly pine
	loblolly pine	78	114	
	Virginia pine	68	100	
	white oak	65	43	
Badin	loblolly pine	80	110	---
	shortleaf pine	69	108	
	white oak	68	50	
27C:				
Tatum	chestnut oak	68	100	loblolly pine
	loblolly pine	78	114	
	Virginia pine	68	100	
	white oak	65	43	
Badin	loblolly pine	80	110	---
	shortleaf pine	69	108	
	white oak	68	50	
28B:				
Turbeville	loblolly pine	85	114	loblolly pine, yellow-poplar
	shortleaf pine	70	114	
	southern red oak	80	57	
	Virginia pine	70	114	
	yellow-poplar	100	86	
29B:				
Wedowee	loblolly pine	80	114	loblolly pine, shortleaf pine, Virginia pine, yellow-poplar
	northern red oak	70	57	
	shortleaf pine	70	114	
	southern red oak	70	57	
	Virginia pine	70	114	
	white oak	65	43	
29C:				
Wedowee	loblolly pine	80	114	loblolly pine, shortleaf pine, Virginia pine, yellow-poplar
	northern red oak	70	57	
	shortleaf pine	70	114	
	southern red oak	70	57	
	Virginia pine	70	114	
	white oak	65	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
29D:				
Wedowee	loblolly pine	80	114	loblolly pine, shortleaf pine, Virginia pine, yellow-poplar
	northern red oak	70	57	
	shortleaf pine	70	114	
	southern red oak	70	57	
	Virginia pine	70	114	
	white oak	65	43	
30A:				
Wehadkee	yellow-poplar	79	114	green ash, sweetgum, willow oak, yellow-poplar
	sweetgum	94	114	
	willow oak	110	114	
	water oak	91	86	
31B:				
Worsham	loblolly pine	84	129	eastern white pine, loblolly pine, yellow-poplar
	pin oak	85	72	
	southern red oak	79	57	
	Virginia pine	80	114	
	yellow-poplar	79	86	
DAM. Dam				
UdC. Udorthents, loamy				
W. Water				

Table 9.—Forestland Management, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C:							
Appling	85	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
2B:							
Appling	60	Slight		Well suited		Moderate	
						Low strength	0.50
Mattaponi	35	Slight		Well suited		Moderate	
						Low strength	0.50
3D:							
Ashlar	85	Moderate		Poorly suited		Moderate	
		Restrictive layer	0.50	Slope	1.00	Low strength	0.50
		Slope	0.50				
Rock outcrop	15	Not rated		Not rated		Not rated	
3E:							
Ashlar	85	Severe		Poorly suited		Moderate	
		Slope	1.00	Slope	1.00	Low strength	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
4C:							
Badin	60	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
Goldston	40	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
5B:							
Cecil	90	Slight		Well suited		Moderate	
						Low strength	0.50
5C:							
Cecil	90	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
6B3:							
Cecil	88	Slight		Well suited		Moderate	
						Low strength	0.50
6C3:							
Cecil	90	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
7B:							
Cecil	85	Slight		Well suited		Moderate	
						Low strength	0.50
Urban land	15	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
7C:							
Cecil	85	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
				Low strength	0.50		
9A:							
Chewacla	60	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Wetness	0.50		
				Low strength	0.50		
Wehadkee	40	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
				Wetness	1.00		
				Low strength	0.50		
10B:							
Emporia	85	Slight		Well suited		Moderate	
						Low strength	0.50
11B:							
Enon	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
12B:							
Fluvanna	50	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
Lignum	35	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
13B:							
Georgeville	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
13C:							
Georgeville	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
14C:							
Georgeville	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
Mattaponi	15	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
15D:							
Goldston	85	Severe		Poorly suited		Moderate	
		Restrictive layer	1.00	Slope	1.00	Low strength	0.50
		Slope	0.50				

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
15D:							
Badin	15	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
16B:							
Helena	85	Slight		Well suited		Moderate	
						Low strength	0.50
16C:							
Helena	85	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
17B:							
Herndon	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
18B:							
Iredell	85	Slight		Well suited		Moderate	
						Low strength	0.50
18C:							
Iredell	82	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
19B:							
Lignum	60	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
Cid	35	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Restrictive layer	0.50				
20C3:							
Madison	88	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
20D3:							
Madison	88	Moderate		Poorly suited		Severe	
		Slope	0.50	Slope	1.00	Low strength	1.00
				Low strength	0.50		
21B:							
Mattaponi	85	Slight		Well suited		Moderate	
						Low strength	0.50
22C:							
Pacolet	88	Moderate		Moderately suited		Moderate	
		Low strength	0.50	Slope	0.50	Low strength	0.50
22D:							
Pacolet	90	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
23B:							
Rion	90	Slight		Well suited		Moderate	
						Low strength	0.50

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
23D:							
Rion	88	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
24C:							
Rion	60	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
Ashlar	40	Moderate		Moderately suited		Moderate	
		Restrictive layer	0.50	Slope	0.50	Low strength	0.50
25A:							
Riverview	88	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
26B:							
Santuc	85	Slight		Well suited		Moderate	
						Low strength	0.50
27B:							
Tatum	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Slope	0.50		
Badin	15	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Slope	0.50		
27C:							
Tatum	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
Badin	15	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
				Low strength	0.50		
28B:							
Turbeville	85	Slight		Well suited		Moderate	
						Low strength	0.50
29B:							
Wedowee	88	Slight		Well suited		Moderate	
						Low strength	0.50
29C:							
Wedowee	90	Slight		Moderately suited		Moderate	
				Slope	0.50	Low strength	0.50
29D:							
Wedowee	85	Moderate		Poorly suited		Moderate	
		Slope	0.50	Slope	1.00	Low strength	0.50
30A:							
Wehadkee	88	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
				Wetness	1.00		
				Low strength	0.50		

Table 9.—Forestland Management, Part I—Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for log landings: Rating class and limiting features	Value	Soil rutting hazard: Rating class and limiting features	Value
31B:							
Worsham	85	Severe		Poorly suited		Moderate	
		Wetness	1.00	Wetness	1.00	Low strength	0.50
DAM:							
Dam	95	Not rated		Not rated		Not rated	
UdC:							
Udorthents, loamy	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Landslides	0.01	Slope	0.50		
				Stickiness; high plasticity index	0.50		
W:							
Water	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C:							
Appling	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
2B:							
Appling	60	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
Mattaponi	35	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
3D:							
Ashlar	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
3E:							
Ashlar	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
4C:							
Badin	60	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Goldston	40	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
5B:							
Cecil	90	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
5C:							
Cecil	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
6B3:							
Cecil	88	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
6C3:							
Cecil	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
7B:							
Cecil	85	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
Urban land	15	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
7C:							
Cecil	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
9A:							
Chewacla	60	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
Wehadkee	40	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
10B:							
Emporia	85	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
11B:							
Enon	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
12B:							
Fluvanna	50	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Lignum	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
13B:							
Georgeville	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
13C:							
Georgeville	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
14C:							
Georgeville	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
Mattaponi	15	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
15D:							
Goldston	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
Badin	15	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
16B:							
Helena	85	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
16C:							
Helena	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
17B:							
Herndon	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
18B:							
Iredell	85	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
18C:							
Iredell	82	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
19B:							
Lignum	60	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Cid	35	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
20C3:							
Madison	88	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
20D3:							
Madison	88	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
21B:							
Mattaponi	85	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
22C:							
Pacolet	88	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
22D:							
Pacolet	90	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
23B:							
Rion	90	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		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
23D:							
Rion	88	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
24C:							
Rion	60	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
Ashlar	40	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
25A:							
Riverview	88	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
26B:							
Santuc	85	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
27B:							
Tatum	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
Badin	15	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
27C:							
Tatum	85	Moderate		Moderate		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	0.50
						Low strength	0.50
Badin	15	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
28B:							
Turbeville	85	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
29B:							
Wedowee	88	Slight		Moderate		Well suited	
				Slope/erodibility	0.50		
29C:							
Wedowee	90	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
29D:							
Wedowee	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
30A:							
Wehadkee	88	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50

Table 9.—Forestland Management, Part II—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
31B:							
Worsham	85	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
DAM:							
Dam	95	Not rated		Not rated		Not rated	
UdC:							
Udorthents, loamy	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Stickiness; high plasticity index	0.50
W:							
Water	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part III

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
1C:							
Appling	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
2B:							
Appling	60	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Mattaponi	35	Well suited		Moderately suited		Well suited	
				Slope	0.50		
3D:							
Ashlar	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
3E:							
Ashlar	85	Moderately suited		Unsuited		Moderately suited	
		Slope	0.50	Slope	1.00	Slope	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
4C:							
Badin	60	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
				Slope	0.50		
Goldston	40	Moderately suited		Moderately suited		Well suited	
		Rock fragments	0.50	Rock fragments	0.50		
				Slope	0.50		
5B:							
Cecil	90	Well suited		Well suited		Well suited	
5C:							
Cecil	90	Well suited		Moderately suited		Well suited	
				Slope	0.50		
6B3:							
Cecil	88	Well suited		Well suited		Well suited	
6C3:							
Cecil	90	Well suited		Moderately suited		Well suited	
				Slope	0.50		
7B:							
Cecil	85	Well suited		Well suited		Well suited	
Urban land	15	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
7C:							
Cecil	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	Well suited		Well suited		Moderately suited	
						Low strength	0.50
9A:							
Chewacla	60	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Wehadkee	40	Well suited		Well suited		Moderately suited	
						Low strength	0.50
10B:							
Emporia	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
11B:							
Enon	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
12B:							
Fluvanna	50	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.50	Low strength	0.50
				Stickiness; high plasticity index	0.50		
Lignum	35	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
13B:							
Georgeville	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
13C:							
Georgeville	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
14C:							
Georgeville	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Mattaponi	15	Well suited		Moderately suited		Well suited	
				Slope	0.50		
15D:							
Goldston	85	Moderately suited		Poorly suited		Moderately suited	
		Rock fragments	0.50	Slope	0.75	Slope	0.50
				Rock fragments	0.50		
Badin	15	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.50	Slope	0.50

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
16B:							
Helena	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
16C:							
Helena	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
17B:							
Herndon	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
18B:							
Iredell	85	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
				Slope	0.50		
18C:							
Iredell	82	Poorly suited		Poorly suited		Well suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75		
				Slope	0.50		
19B:							
Lignum	60	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
Cid	35	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
20C3:							
Madison	88	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
20D3:							
Madison	88	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
						Slope	0.50
21B:							
Mattaponi	85	Well suited		Well suited		Well suited	
22C:							
Pacolet	88	Moderately suited		Moderately suited		Well suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
				Slope	0.50		
22D:							
Pacolet	90	Moderately suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Slope	0.75	Slope	0.50
				Stickiness; high plasticity index	0.50		
23B:							
Rion	90	Well suited		Moderately suited		Well suited	
				Slope	0.50		

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
23D:							
Rion	88	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
24C:							
Rion	60	Well suited		Moderately suited		Well suited	
				Slope	0.50		
Ashlar	40	Well suited		Moderately suited		Well suited	
				Slope	0.50		
25A:							
Riverview	88	Well suited		Well suited		Moderately suited	
						Low strength	0.50
26B:							
Santuc	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
27B:							
Tatum	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
Badin	15	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
				Slope	0.50		
27C:							
Tatum	85	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Low strength	0.50
				Slope	0.50		
Badin	15	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
				Slope	0.50		
28B:							
Turbeville	85	Well suited		Moderately suited		Well suited	
				Slope	0.50		
29B:							
Wedowee	88	Well suited		Moderately suited		Well suited	
				Rock fragments	0.50		
29C:							
Wedowee	90	Well suited		Moderately suited		Well suited	
				Slope	0.50		
				Rock fragments	0.50		
29D:							
Wedowee	85	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Slope	0.50
				Rock fragments	0.50		

Table 9.—Forestland Management, Part III—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
30A:							
Wehadkee	88	Well suited		Well suited		Moderately suited	
						Low strength	0.50
31B:							
Worsham	85	Poorly suited		Poorly suited		Poorly suited	
		Stickiness; high plasticity index	0.75	Stickiness; high plasticity index	0.75	Wetness	1.00
				Slope	0.50		
DAM:							
Dam	95	Not rated		Not rated		Not rated	
UdC:							
Udorthents, loamy	85	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
						Stickiness; high plasticity index	0.50
W:							
Water	100	Not rated		Not rated		Not rated	

Table 9.—Forestland Management, Part IV

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C:					
Appling	85	Well suited		Well suited	
2B:					
Appling	60	Well suited		Well suited	
Mattaponi	35	Well suited		Well suited	
3D:					
Ashlar	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
Rock outcrop	15	Not rated		Not rated	
3E:					
Ashlar	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
				Restrictive layer	0.50
Rock outcrop	15	Not rated		Not rated	
4C:					
Badin	60	Well suited		Well suited	
Goldston	40	Poorly suited		Unsuited	
		Rock fragments	0.50	Restrictive layer	1.00
5B:					
Cecil	90	Well suited		Well suited	
5C:					
Cecil	90	Well suited		Well suited	
6B3:					
Cecil	88	Well suited		Well suited	
6C3:					
Cecil	90	Well suited		Well suited	
7B:					
Cecil	85	Well suited		Well suited	
Urban land	15	Not rated		Not rated	
7C:					
Cecil	85	Well suited		Well suited	
Urban land	15	Not rated		Not rated	
8A:					
Chewacla	85	Well suited		Well suited	

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
		Rating class and limiting features	Value	Rating class and limiting features	Value
9A:					
Chewacla	60	Well suited		Well suited	
Wehadkee	40	Well suited		Well suited	
10B:					
Emporia	85	Well suited		Well suited	
11B:					
Enon	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
12B:					
Fluvanna	50	Well suited		Well suited	
Lignum	35	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
13B:					
Georgeville	85	Well suited		Well suited	
13C:					
Georgeville	85	Well suited		Well suited	
14C:					
Georgeville	85	Well suited		Well suited	
Mattaponi	15	Well suited		Well suited	
15D:					
Goldston	85	Poorly suited		Unsuited	
		Slope	0.50	Restrictive layer	1.00
		Rock fragments	0.50	Slope	0.50
Badin	15	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
16B:					
Helena	85	Well suited		Well suited	
16C:					
Helena	85	Well suited		Well suited	
17B:					
Herndon	85	Well suited		Well suited	
18B:					
Iredell	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
18C:					
Iredell	82	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
19B:					
Lignum	60	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Cid	35	Poorly suited		Unsuited	
		Stickiness; high plasticity index	0.50	Restrictive layer	1.00
20C3:					
Madison	88	Well suited		Well suited	
20D3:					
Madison	88	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
21B:					
Mattaponi	85	Well suited		Well suited	
22C:					
Pacolet	88	Well suited		Well suited	
22D:					
Pacolet	90	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
23B:					
Rion	90	Well suited		Well suited	
23D:					
Rion	88	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
24C:					
Rion	60	Well suited		Well suited	
Ashlar	40	Well suited		Poorly suited	
				Restrictive layer	0.50
25A:					
Riverview	88	Well suited		Well suited	
26B:					
Santuc	85	Well suited		Well suited	
27B:					
Tatum	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Badin	15	Well suited		Well suited	
27C:					
Tatum	85	Poorly suited		Well suited	
		Stickiness; high plasticity index	0.50		
Badin	15	Well suited		Well suited	

Table 9.—Forestland Management, Part IV—Continued

Map symbol and soil name	Pct. of map unit	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
28B:					
Turbeville----------	85	Well suited		Well suited	
29B:					
Wedowee-------------	88	Well suited		Well suited	
29C:					
Wedowee-------------	90	Well suited		Well suited	
29D:					
Wedowee-------------	85	Poorly suited		Poorly suited	
		Slope	0.50	Slope	0.50
30A:					
Wehadkee------------	88	Well suited		Well suited	
31B:					
Worsham-------------	85	Poorly suited		Unsuited	
		Stickiness; high plasticity index	0.50	Wetness	1.00
DAM:					
Dam-----------------	95	Not rated		Not rated	
UdC:					
Udorthents, loamy---	85	Well suited		Well suited	
W:					
Water---------------	100	Not rated		Not rated	

Table 9.—Forestland Management, Part V

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
1C:					
Appling	85	Moderate		Low	
		Texture/rock fragments	0.50		
2B:					
Appling	60	Moderate		Low	
		Texture/rock fragments	0.50		
Mattaponi	35	Moderate		Low	
		Texture/rock fragments	0.50		
3D:					
Ashlar	85	Low		Low	
		Texture/surface depth/rock fragments	0.10		
Rock outcrop	15	Not rated		Not rated	
3E:					
Ashlar	85	Moderate		Low	
		Texture/slope/ surface depth/ rock fragments	0.50		
Rock outcrop	15	Not rated		Not rated	
4C:					
Badin	60	Moderate		Low	
		Texture/rock fragments	0.50		
Goldston	40	Moderate		Low	
		Texture/rock fragments	0.50		
5B:					
Cecil	90	Moderate		Low	
		Texture/rock fragments	0.50		
5C:					
Cecil	90	Moderate		Low	
		Texture/rock fragments	0.50		
6B3:					
Cecil	88	Moderate		Low	
		Texture/rock fragments	0.50		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
6C3:					
Cecil	90	Moderate		Low	
		Texture/rock fragments	0.50		
7B:					
Cecil	85	Moderate		Low	
		Texture/rock fragments	0.50		
Urban land	15	Not rated		Not rated	
7C:					
Cecil	85	Moderate		Low	
		Texture/rock fragments	0.50		
Urban land	15	Not rated		Not rated	
8A:					
Chewacla	85	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
9A:					
Chewacla	60	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
Wehadkee	40	Low		High	
		Texture/surface depth/rock fragments	0.10	Wetness	1.00
10B:					
Emporia	85	Moderate		Low	
		Texture/rock fragments	0.50		
11B:					
Enon	85	Low		Low	
12B:					
Fluvanna	50	Low		Low	
		Texture/rock fragments	0.10		
Lignum	35	Moderate		Low	
		Texture/rock fragments	0.50		
13B:					
Georgeville	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
13C:					
Georgeville	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
14C:					
Georgeville	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Mattaponi	15	Moderate		Low	
		Texture/rock fragments	0.50		
15D:					
Goldston	85	Moderate		Low	
		Texture/rock fragments	0.50		
Badin	15	Moderate		Low	
		Texture/rock fragments	0.50		
16B:					
Helena	85	Moderate		Low	
		Texture/rock fragments	0.50		
16C:					
Helena	85	Moderate		Low	
		Texture/rock fragments	0.50		
17B:					
Herndon	85	Moderate		Low	
		Texture/rock fragments	0.50		
18B:					
Iredell	85	Moderate		Low	
		Texture/rock fragments	0.50		
18C:					
Iredell	82	Moderate		Low	
		Texture/rock fragments	0.50		
19B:					
Lignum	60	Moderate		Low	
		Texture/rock fragments	0.50		
Cid	35	Moderate		Low	
		Texture/rock fragments	0.50		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
20C3:					
Madison	88	Low		Low	
20D3:					
Madison	88	Low		Low	
21B:					
Mattaponi	85	Moderate		Low	
		Texture/rock fragments	0.50		
22C:					
Pacolet	88	Moderate		Low	
		Texture/rock fragments	0.50		
22D:					
Pacolet	90	Moderate		Low	
		Texture/rock fragments	0.50		
23B:					
Rion	90	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
23D:					
Rion	88	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
24C:					
Rion	60	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
Ashlar	40	Low		Low	
		Texture/surface depth/rock fragments	0.10		
25A:					
Riverview	88	Low		Low	
		Texture/rock fragments	0.10		
26B:					
Santuc	85	Moderate		Low	
		Texture/rock fragments	0.50		
27B:					
Tatum	85	Moderate		Low	
		Texture/rock fragments	0.50		

Table 9.—Forestland Management, Part V—Continued

Map symbol and soil name	Pct. of map unit	Potential for damage to soil by fire: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
27B:					
Badin	15	Moderate		Low	
		Texture/rock fragments	0.50		
27C:					
Tatum	85	Moderate		Low	
		Texture/rock fragments	0.50		
Badin	15	Moderate		Low	
		Texture/rock fragments	0.50		
28B:					
Turbeville	85	Moderate		Low	
		Texture/rock fragments	0.50		
29B:					
Wedowee	88	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
29C:					
Wedowee	90	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
29D:					
Wedowee	85	Moderate		Low	
		Texture/surface depth/rock fragments	0.50		
30A:					
Wehadkee	88	Low		High	
		Texture/surface depth/rock fragments	0.10	Wetness	1.00
31B:					
Worsham	85	Low		High	
		Texture/rock fragments	0.10	Wetness	1.00
DAM:					
Dam	95	Not rated		Not rated	
UdC:					
Udorthents, loamy	85	Moderate		Low	
		Texture/rock fragments	0.50		
W:					
Water	100	Not rated		Not rated	

Table 10.—Recreational Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C:							
Appling	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
2B:							
Appling	60	Not limited		Not limited		Somewhat limited	
						Slope	0.88
Mattaponi	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.15	Slow water movement	0.15	Slope	0.88
						Slow water movement	0.15
3D:							
Ashlar	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
3E:							
Ashlar	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Rock outcrop	15	Not rated		Not rated		Not rated	
4C:							
Badin	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
						Depth to bedrock	0.03
Goldston	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Gravel content	0.92	Gravel content	0.92	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Gravel content	1.00
5B:							
Cecil	90	Not limited		Not limited		Somewhat limited	
						Slope	0.50
5C:							
Cecil	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
6B3:							
Cecil	88	Not limited		Not limited		Somewhat limited	
						Slope	0.50
6C3:							
Cecil	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
7B:							
Cecil	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Urban land	15	Not rated		Not rated		Not rated	
7C:							
Cecil	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
9A:							
Chewacla	60	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
Wehadkee	40	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
10B:							
Emporia	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.60	Slow water movement	0.60	Slope	0.88
						Slow water movement	0.60
11B:							
Enon	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.94	Slow water movement	0.94	Slow water movement	0.94
						Slope	0.88
12B:							
Fluvanna	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.60	Slow water movement	0.60	Slope	0.88
						Slow water movement	0.60
						Gravel content	0.22
Lignum	35	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.24	Depth to saturated zone	0.12	Slope	0.50
						Depth to saturated zone	0.24
13B:							
Georgeville	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.22

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
13C:							
Georgeville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Gravel content	0.22
14C:							
Georgeville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
						Gravel content	0.22
Mattaponi	15	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.15	Slow water movement	0.15	Slow water movement	0.15
15D:							
Goldston	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Gravel content	0.92	Gravel content	0.92	Gravel content	1.00
Badin	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.03
16B:							
Helena	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.94	Slow water movement	0.94	Slow water movement	0.94
		Depth to saturated zone	0.24	Depth to saturated zone	0.12	Slope	0.88
						Depth to saturated zone	0.24
16C:							
Helena	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.94	Slow water movement	0.94	Slope	1.00
		Slope	0.37	Slope	0.37	Slow water movement	0.94
		Depth to saturated zone	0.24	Depth to saturated zone	0.12	Depth to saturated zone	0.24
17B:							
Herndon	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
18B:							
Iredell	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.94	Slow water movement	0.94	Gravel content	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slow water movement	0.94
		Gravel content	0.02	Gravel content	0.02	Slope	0.88
18C:							
Iredell	82	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.94	Slow water movement	0.94	Slope	1.00
		Depth to saturated zone	0.39	Slope	0.37	Gravel content	1.00
		Slope	0.37	Depth to saturated zone	0.19	Slow water movement	0.94

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
19B:							
Lignum	60	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.24	Depth to saturated zone	0.12	Slope	0.50
						Depth to saturated zone	0.24
Cid	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.94	Slow water movement	0.94	Slow water movement	0.94
		Depth to saturated zone	0.24	Depth to saturated zone	0.12	Slope	0.50
						Depth to bedrock	0.35
20C3:							
Madison	88	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
20D3:							
Madison	88	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
21B:							
Mattaponi	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.16	Gravel content	0.16	Gravel content	1.00
		Slow water movement	0.15	Slow water movement	0.15	Slope	0.50
						Slow water movement	0.15
22C:							
Pacolet	88	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Gravel content	0.76
22D:							
Pacolet	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.76
23B:							
Rion	90	Not limited		Not limited		Somewhat limited	
						Slope	0.88
						Gravel content	0.22
23D:							
Rion	88	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.22
24C:							
Rion	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Gravel content	0.22
Ashlar	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
25A:							
Riverview	88	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
26B:							
Santuc	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
27B:							
Tatum	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Slope	1.00
Badin	15	Not limited		Not limited		Very limited	
						Slope	1.00
						Depth to bedrock	0.03
27C:							
Tatum	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
Badin	15	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Depth to bedrock	0.03
28B:							
Turbeville	85	Not limited		Not limited		Somewhat limited	
						Slope	0.88
29B:							
Wedowee	88	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Slope	0.50
29C:							
Wedowee	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
29D:							
Wedowee	85	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
30A:							
Wehadkee	88	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
31B:							
Worsham	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
						Slope	0.88
DAM:							
Dam	95	Not rated		Not rated		Not rated	

Table 10.—Recreational Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
UdC:							
Udorthents, loamy	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.15	Slow water movement	0.15	Slope	1.00
						Slow water movement	0.15
W:							
Water	100	Not rated		Not rated		Not rated	

Table 10.—Recreational Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1C:							
Appling-------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.37
2B:							
Appling-------------	60	Not limited		Not limited		Not limited	
Mattaponi-----------	35	Not limited		Not limited		Not limited	
3D:							
Ashlar--------------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Droughty	0.26
Rock outcrop--------	15	Not rated		Not rated		Not rated	
3E:							
Ashlar--------------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.78	Slope	1.00
						Droughty	0.26
Rock outcrop--------	15	Not rated		Not rated		Not rated	
4C:							
Badin---------------	60	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.03
Goldston------------	40	Not limited		Not limited		Very limited	
						Depth to bedrock	1.00
						Gravel content	0.92
						Slope	0.63
5B:							
Cecil---------------	90	Not limited		Not limited		Not limited	
5C:							
Cecil---------------	90	Not limited		Not limited		Somewhat limited	
						Slope	0.37
6B3:							
Cecil---------------	88	Not limited		Not limited		Not limited	
6C3:							
Cecil---------------	90	Not limited		Not limited		Somewhat limited	
						Slope	0.37
7B:							
Cecil---------------	85	Not limited		Not limited		Not limited	
Urban land----------	15	Not rated		Not rated		Not rated	

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
7C:							
Cecil	85	Not limited		Not limited		Somewhat limited	
						Slope	0.37
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Flooding	0.60
9A:							
Chewacla	60	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
Wehadkee	40	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
10B:							
Emporia	85	Not limited		Not limited		Not limited	
11B:							
Enon	85	Not limited		Not limited		Not limited	
12B:							
Fluvanna	50	Not limited		Not limited		Not limited	
Lignum	35	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.12
13B:							
Georgeville	85	Not limited		Not limited		Not limited	
13C:							
Georgeville	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
14C:							
Georgeville	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
Mattaponi	15	Not limited		Not limited		Somewhat limited	
						Slope	0.63
15D:							
Goldston	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Depth to bedrock	1.00
						Slope	1.00
						Gravel content	0.92
Badin	15	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to bedrock	0.03

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
16B:							
Helena	85	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.12
16C:							
Helena	85	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Depth to saturated zone	0.12
17B:							
Herndon	85	Not limited		Not limited		Not limited	
18B:							
Iredell	85	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.19
						Gravel content	0.02
18C:							
Iredell	82	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Depth to saturated zone	0.19
						Gravel content	0.02
19B:							
Lignum	60	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.12
Cid	35	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.35
						Depth to saturated zone	0.12
20C3:							
Madison	88	Not limited		Not limited		Somewhat limited	
						Slope	0.37
20D3:							
Madison	88	Somewhat limited		Not limited		Very limited	
		Slope	0.92			Slope	1.00
21B:							
Mattaponi	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.16
22C:							
Pacolet	88	Not limited		Not limited		Somewhat limited	
						Slope	0.37
22D:							
Pacolet	90	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
23B:							
Rion	90	Not limited		Not limited		Not limited	

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
23D:							
Rion	88	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
24C:							
Rion	60	Not limited		Not limited		Somewhat limited	
						Slope	0.37
Ashlar	40	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Droughty	0.26
25A:							
Riverview	88	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
26B:							
Santuc	85	Not limited		Not limited		Not limited	
27B:							
Tatum	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.01
Badin	15	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.03
27C:							
Tatum	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.37
						Gravel content	0.01
Badin	15	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Depth to bedrock	0.03
28B:							
Turbeville	85	Not limited		Not limited		Not limited	
29B:							
Wedowee	88	Not limited		Not limited		Somewhat limited	
						Gravel content	0.01
29C:							
Wedowee	90	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Gravel content	0.01
29D:							
Wedowee	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.01
30A:							
Wehadkee	88	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

Table 10.—Recreational Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
31B:							
Worsham	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
DAM:							
Dam	95	Not rated		Not rated		Not rated	
UdC:							
Udorthents, loamy	85	Not limited		Not limited		Not limited	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1C:							
Appling-------------	85	Somewhat limited Slope	 0.37	Somewhat limited Slope	 0.37	Very limited Slope	 1.00
2B:							
Appling-------------	60	Not limited		Not limited		Somewhat limited Slope	 0.12
Mattaponi-----------	35	Somewhat limited Shrink-swell	 0.50	Somewhat limited Depth to saturated zone Shrink-swell	 0.95 0.50	Somewhat limited Shrink-swell Slope	 0.50 0.12
3D:							
Ashlar--------------	85	Very limited Slope Depth to hard bedrock	 1.00 0.46	Very limited Slope Depth to hard bedrock Depth to soft bedrock	 1.00 1.00 0.64	Very limited Slope Depth to hard bedrock	 1.00 0.46
Rock outcrop--------	15	Not rated		Not rated		Not rated	
3E:							
Ashlar--------------	85	Very limited Slope Depth to hard bedrock	 1.00 0.46	Very limited Slope Depth to hard bedrock Depth to soft bedrock	 1.00 1.00 0.64	Very limited Slope Depth to hard bedrock	 1.00 0.46
Rock outcrop--------	15	Not rated		Not rated		Not rated	
4C:							
Badin---------------	60	Somewhat limited Slope Shrink-swell	 0.63 0.50	Somewhat limited Slope Shrink-swell Depth to soft bedrock	 0.63 0.50 0.03	Very limited Slope Shrink-swell	 1.00 0.50
Goldston------------	40	Somewhat limited Depth to hard bedrock Slope Depth to soft bedrock	 0.79 0.63 0.50	Very limited Depth to hard bedrock Depth to soft bedrock Slope	 1.00 1.00 0.63	Very limited Slope Depth to soft bedrock Depth to hard bedrock	 1.00 1.00 0.79
5B:							
Cecil---------------	90	Not limited		Not limited		Not limited	
5C:							
Cecil---------------	90	Somewhat limited Slope	 0.37	Somewhat limited Slope	 0.37	Very limited Slope	 1.00

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
6B3:							
Cecil	88	Not limited		Not limited		Not limited	
6C3:							
Cecil	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
7B:							
Cecil	85	Not limited		Not limited		Not limited	
Urban land	15	Not rated		Not rated		Not rated	
7C:							
Cecil	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
9A:							
Chewacla	60	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
Wehadkee	40	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
10B:							
Emporia	85	Not limited		Somewhat limited		Somewhat limited	
				Depth to saturated zone	0.73	Slope	0.12
11B:							
Enon	85	Very limited		Not limited		Very limited	
		Shrink-swell	1.00			Shrink-swell	1.00
						Slope	0.12
12B:							
Fluvanna	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
Lignum	35	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.24	Shrink-swell	0.50	Depth to saturated zone	0.24
13B:							
Georgeville	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
13C:							
Georgeville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
14C:							
Georgeville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
Mattaponi	15	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Depth to saturated zone	0.95	Slope	1.00
		Shrink-swell	0.50	Slope	0.63	Shrink-swell	0.50
				Shrink-swell	0.50		
15D:							
Goldston	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to hard bedrock	0.79
Badin	15	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
				Depth to soft bedrock	0.03		
16B:							
Helena	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.24	Shrink-swell	1.00	Depth to saturated zone	0.24
						Slope	0.12
16C:							
Helena	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.37	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.24	Slope	0.37	Depth to saturated zone	0.24
17B:							
Herndon	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
18B:							
Iredell	85	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.39	Shrink-swell	1.00	Depth to saturated zone	0.39
						Slope	0.12
18C:							
Iredell	82	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to saturated zone	0.39	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.37	Slope	0.37	Depth to saturated zone	0.39

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
19B:							
Lignum	60	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.24	Shrink-swell	0.50	Depth to saturated zone	0.24
Cid	35	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
		Depth to saturated zone	0.24	Depth to hard bedrock	1.00	Depth to saturated zone	0.24
		Depth to hard bedrock	0.10	Shrink-swell	0.50	Depth to hard bedrock	0.10
20C3:							
Madison	88	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
20D3:							
Madison	88	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
21B:							
Mattaponi	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.95	Shrink-swell	0.50
				Shrink-swell	0.50		
22C:							
Pacolet	88	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
22D:							
Pacolet	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
23B:							
Rion	90	Not limited		Not limited		Somewhat limited	
						Slope	0.12
23D:							
Rion	88	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
24C:							
Rion	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Ashlar	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.37	Depth to soft bedrock	0.64	Depth to hard bedrock	0.46
				Slope	0.37		
25A:							
Riverview	88	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.95		

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
26B:							
Santuc	85	Not limited		Somewhat limited		Somewhat limited	
				Depth to saturated zone	0.95	Slope	0.12
27B:							
Tatum	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50
Badin	15	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
				Depth to soft bedrock	0.03	Shrink-swell	0.50
27C:							
Tatum	85	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
Badin	15	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
				Depth to soft bedrock	0.03		
28B:							
Turbeville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
29B:							
Wedowee	88	Not limited		Not limited		Not limited	
29C:							
Wedowee	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
29D:							
Wedowee	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
30A:							
Wehadkee	88	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
31B:							
Worsham	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.12
DAM:							
Dam	95	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part I—Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
UdC:							
Udorthents, loamy---	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 11.—Building Site Development, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C:							
Appling-------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Too clayey	0.28		
		Low strength	0.08	Cutbanks cave	0.10		
2B:							
Appling-------------	60	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Too clayey	0.28		
		Low strength	0.08	Cutbanks cave	0.10		
Mattaponi-----------	35	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Depth to saturated zone	0.95		
		Shrink-swell	0.50	Too clayey	0.50		
		Frost action	0.50	Cutbanks cave	0.10		
3D:							
Ashlar--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.26
		Depth to hard bedrock	0.46	Cutbanks cave	1.00		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
3E:							
Ashlar--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.26
		Depth to hard bedrock	0.46	Cutbanks cave	1.00		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
4C:							
Badin---------------	60	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.63	Slope	0.63
		Slope	0.63	Too clayey	0.12	Depth to bedrock	0.03
		Shrink-swell	0.50	Cutbanks cave	0.10		
Goldston------------	40	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	Gravel content	0.92
		Slope	0.63	Slope	0.63	Slope	0.63
5B:							
Cecil---------------	90	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Too clayey	0.72		
		Low strength	0.10	Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
5C:							
Cecil	90	Somewhat limited Frost action Slope Low strength	 0.50 0.37 0.10	Somewhat limited Too clayey Slope Cutbanks cave	 0.72 0.37 0.10	Somewhat limited Slope	 0.37
6B3:							
Cecil	88	Somewhat limited Frost action Low strength	 0.50 0.10	Somewhat limited Too clayey Cutbanks cave	 0.72 0.10	Not limited	
6C3:							
Cecil	90	Somewhat limited Frost action Slope Low strength	 0.50 0.37 0.10	Somewhat limited Too clayey Slope Cutbanks cave	 0.72 0.37 0.10	Somewhat limited Slope	 0.37
7B:							
Cecil	85	Somewhat limited Frost action Low strength	 0.50 0.10	Somewhat limited Too clayey Cutbanks cave	 0.72 0.10	Not limited	
Urban land	15	Not rated		Not rated		Not rated	
7C:							
Cecil	85	Somewhat limited Frost action Slope Low strength	 0.50 0.37 0.10	Somewhat limited Too clayey Slope Cutbanks cave	 0.72 0.37 0.10	Somewhat limited Slope	 0.37
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	Very limited Depth to saturated zone Flooding Low strength	 1.00 1.00 1.00	Very limited Depth to saturated zone Flooding Cutbanks cave	 1.00 0.60 0.10	Very limited Depth to saturated zone Flooding	 1.00 0.60
9A:							
Chewacla	60	Very limited Depth to saturated zone Flooding Low strength	 1.00 1.00 1.00	Very limited Depth to saturated zone Flooding Cutbanks cave	 1.00 0.80 0.10	Very limited Flooding Depth to saturated zone	 1.00 1.00
Wehadkee	40	Very limited Depth to saturated zone Frost action Flooding	 1.00 1.00 1.00	Very limited Depth to saturated zone Flooding Cutbanks cave	 1.00 0.80 0.10	Very limited Flooding Depth to saturated zone	 1.00 1.00
10B:							
Emporia	85	Somewhat limited Frost action	 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.73 0.10	Not limited	

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
11B:							
Enon	85	Very limited		Somewhat limited		Not limited	
		Shrink-swell	1.00	Too clayey	0.50		
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
12B:							
Fluvanna	50	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Lignum	35	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.12
		Low strength	1.00				
		Shrink-swell	0.50	Too clayey	0.12		
				Cutbanks cave	0.10		
13B:							
Georgeville	85	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Too clayey	0.50		
		Low strength	0.10	Cutbanks cave	0.10		
13C:							
Georgeville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Too clayey	0.50	Slope	0.37
		Slope	0.37	Slope	0.37		
		Low strength	0.10	Cutbanks cave	0.10		
14C:							
Georgeville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Too clayey	0.50		
		Low strength	0.10	Cutbanks cave	0.10		
Mattaponi	15	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	0.95	Slope	0.63
		Slope	0.63				
		Shrink-swell	0.50	Slope	0.63		
				Too clayey	0.50		
15D:							
Goldston	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00			Slope	1.00
				Depth to soft bedrock	1.00	Gravel content	0.92
		Depth to hard bedrock	0.79				
				Slope	1.00		
Badin	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.12	Depth to bedrock	0.03
		Shrink-swell	0.50	Cutbanks cave	0.10		
16B:							
Helena	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.12
		Shrink-swell	1.00				
		Low strength	1.00	Too clayey	0.28		
				Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
16C:							
Helena--------------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Slope	0.37
		Shrink-swell	1.00			Depth to saturated zone	0.12
		Low strength	1.00	Slope	0.37		
				Too clayey	0.28		
17B:							
Herndon-------------	85	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Too clayey	0.12		
		Low strength	0.10	Cutbanks cave	0.10		
18B:							
Iredell-------------	85	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Frost action	1.00				
		Low strength	1.00	Too clayey	0.95	Gravel content	0.02
				Cutbanks cave	0.10		
18C:							
Iredell-------------	82	Very limited		Very limited		Somewhat limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Slope	0.37
		Frost action	1.00			Depth to saturated zone	0.19
		Low strength	1.00	Too clayey	0.95		
				Slope	0.37	Gravel content	0.02
19B:							
Lignum--------------	60	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.12
		Low strength	1.00				
		Shrink-swell	0.50	Too clayey	0.12		
				Cutbanks cave	0.10		
Cid-----------------	35	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.35
		Low strength	1.00			Depth to saturated zone	0.12
		Shrink-swell	0.50	Depth to saturated zone	1.00		
				Depth to soft bedrock	0.35		
20C3:							
Madison-------------	88	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Too clayey	0.72	Slope	0.37
		Slope	0.37	Slope	0.37		
		Low strength	0.10	Cutbanks cave	0.10		
20D3:							
Madison-------------	88	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Too clayey	0.72		
		Low strength	0.10	Cutbanks cave	0.10		
21B:							
Mattaponi-----------	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	0.95	Gravel content	0.16
		Shrink-swell	0.50				
		Frost action	0.50	Too clayey	0.50		
				Cutbanks cave	0.10		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
22C:							
Pacolet-------------	88	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		
		Low strength	0.10	Too clayey	0.01		
22D:							
Pacolet-------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
		Low strength	0.10	Too clayey	0.01		
23B:							
Rion----------------	90	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
23D:							
Rion----------------	88	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
24C:							
Rion----------------	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		
Ashlar--------------	40	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Slope	0.37
		Depth to hard bedrock	0.46	Cutbanks cave	1.00	Droughty	0.26
		Slope	0.37	Depth to soft bedrock	0.64		
25A:							
Riverview-----------	88	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Depth to saturated zone	0.95		
				Flooding	0.60		
26B:							
Santuc--------------	85	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Depth to saturated zone	0.95		
				Cutbanks cave	0.10		
27B:							
Tatum---------------	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Too clayey	0.72	Gravel content	0.01
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Badin---------------	15	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Too clayey	0.12	Depth to bedrock	0.03
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50	Depth to soft bedrock	0.03		

Table 11.—Building Site Development, Part II—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
27C:							
Tatum	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Too clayey	0.72	Slope	0.37
		Shrink-swell	0.50	Slope	0.37	Gravel content	0.01
		Frost action	0.50	Cutbanks cave	0.10		
Badin	15	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	0.50	Too clayey	0.12	Depth to bedrock	0.03
		Frost action	0.50	Cutbanks cave	0.10		
28B:							
Turbeville	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Too clayey	0.12		
		Frost action	0.50	Cutbanks cave	0.10		
		Low strength	0.02				
29B:							
Wedowee	88	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01
29C:							
Wedowee	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10	Gravel content	0.01
29D:							
Wedowee	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01
30A:							
Wehadkee	88	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
		Flooding	1.00	Cutbanks cave	0.10		
31B:							
Worsham	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Too clayey	0.12		
		Low strength	1.00	Cutbanks cave	0.10		
DAM:							
Dam	95	Not rated		Not rated		Not rated	
UdC:							
Udorthents, loamy	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	0.10		
W:							
Water	100	Not rated		Not rated		Not rated	

Table 12.—Sanitary Facilities, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1C:					
Appling	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	1.00
		Slope	0.37		
2B:					
Appling	60	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.68
Mattaponi	35	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Slow water movement	1.00	Slope	0.68
3D:					
Ashlar	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Depth to soft bedrock	1.00
				Slope	1.00
Rock outcrop	15	Not rated		Not rated	
3E:					
Ashlar	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Seepage, bottom layer	1.00	Depth to soft bedrock	1.00
				Slope	1.00
Rock outcrop	15	Not rated		Not rated	
4C:					
Badin	60	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
Goldston	40	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	0.63	Depth to soft bedrock	1.00
				Slope	1.00

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
5B:					
Cecil---------------	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.32
5C:					
Cecil---------------	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	1.00
		Slope	0.37		
6B3:					
Cecil---------------	88	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.32
6C3:					
Cecil---------------	90	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	1.00
		Slope	0.37		
7B:					
Cecil---------------	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Seepage	1.00
		Slow water movement	0.50	Slope	0.32
Urban land----------	15	Not rated		Not rated	
7C:					
Cecil---------------	85	Very limited		Very limited	
		Seepage, bottom layer	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	1.00
		Slope	0.37		
Urban land----------	15	Not rated		Not rated	
8A:					
Chewacla------------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
9A:					
Chewacla	60	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.50
Wehadkee	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.53
10B:					
Emporia	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
				Slope	0.68
		Slow water movement	1.00		
11B:					
Enon	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
				Seepage	0.02
12B:					
Fluvanna	50	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.68
Lignum	35	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.64
		Depth to saturated zone	1.00	Slope	0.32
				Seepage	0.18
		Depth to bedrock	0.47		
13B:					
Georgeville	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
13C:					
Georgeville	85	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.37		
14C:					
Georgeville	85	Somewhat limited		Very limited	
		Slope	0.63	Slope	1.00
		Slow water movement	0.50	Seepage	0.50

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
14C:					
Mattaponi-----------	15	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	1.00	Seepage	1.00
		Slope	0.63		
15D:					
Goldston------------	85	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
Badin---------------	15	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
16B:					
Helena--------------	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.92
		Depth to saturated zone	1.00	Slope	0.68
				Depth to saturated zone	0.64
16C:					
Helena--------------	85	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	1.00	Seepage	0.92
		Slope	0.37	Depth to saturated zone	0.64
17B:					
Herndon-------------	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50
18B:					
Iredell-------------	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	1.00	Slope	0.68
18C:					
Iredell-------------	82	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Slope	0.37		

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
19B:					
Lignum	60	Very limited		Somewhat limited	
		Slow water movement	1.00	Depth to saturated zone	0.64
		Depth to saturated zone	1.00	Slope	0.32
		Depth to bedrock	0.47	Seepage	0.18
Cid	35	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00	Depth to saturated zone	0.64
20C3:					
Madison	88	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
20D3:					
Madison	88	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
21B:					
Mattaponi	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Slow water movement	1.00	Slope	0.32
22C:					
Pacolet	88	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
		Slope	0.37	Seepage	0.50
22D:					
Pacolet	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
23B:					
Rion	90	Somewhat limited		Very limited	
		Slow water movement	0.50	Seepage	1.00
				Slope	0.68
23D:					
Rion	88	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	1.00

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
24C:					
Rion	60	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	1.00
		Slope	0.37		
Ashlar	40	Very limited		Very limited	
		Seepage, bottom layer	1.00	Depth to hard bedrock	1.00
		Slope	0.37	Depth to soft bedrock	1.00
				Slope	1.00
25A:					
Riverview	88	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
26B:					
Santuc	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
				Slope	0.68
		Seepage, bottom layer	1.00		
		Slow water movement	0.50		
27B:					
Tatum	85	Somewhat limited		Somewhat limited	
		Depth to bedrock	0.78	Slope	0.92
		Slow water movement	0.50	Seepage	0.50
				Depth to soft bedrock	0.42
Badin	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.50		
				Slope	0.92
				Seepage	0.50
27C:					
Tatum	85	Somewhat limited		Very limited	
		Depth to bedrock	0.78	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
				Depth to soft bedrock	0.42
		Slope	0.37		
Badin	15	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slow water movement	0.50		
				Slope	1.00
		Slope	0.37	Seepage	0.50
28B:					
Turbeville	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Slope	0.68
				Seepage	0.50

Table 12.—Sanitary Facilities, Part I—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
29B:					
Wedowee-------------	88	Somewhat limited		Somewhat limited	
		Slow water movement	0.50	Seepage	0.50
				Slope	0.32
29C:					
Wedowee-------------	90	Somewhat limited		Very limited	
		Slow water movement	0.50	Slope	1.00
				Seepage	0.50
		Slope	0.37		
29D:					
Wedowee-------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.50	Seepage	0.50
30A:					
Wehadkee------------	88	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.50	Seepage	0.53
31B:					
Worsham-------------	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.68
DAM:					
Dam-----------------	95	Not rated		Not rated	
UdC:					
Udorthents, loamy---	85	Very limited		Somewhat limited	
		Slow water movement	1.00	Slope	0.92
W:					
Water---------------	100	Not rated		Not rated	

Table 12.—Sanitary Facilities, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		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
1C:							
Appling	85	Very limited		Somewhat limited		Somewhat limited	
		Seepage, bottom layer	1.00	Slope	0.37	Too clayey	0.50
		Too clayey	0.50			Slope	0.37
		Slope	0.37				
2B:							
Appling	60	Very limited		Not limited		Somewhat limited	
		Seepage, bottom layer	1.00			Too clayey	0.50
		Too clayey	0.50				
Mattaponi	35	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
		Depth to saturated zone	0.47			Depth to saturated zone	0.11
3D:							
Ashlar	85	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
Rock outcrop	15	Not rated		Not rated		Not rated	
3E:							
Ashlar	85	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
Rock outcrop	15	Not rated		Not rated		Not rated	
4C:							
Badin	60	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	0.63	Depth to bedrock	1.00
		Slope	0.63			Slope	0.63
Goldston	40	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	0.99
						Slope	0.63
5B:							
Cecil	90	Very limited		Not limited		Somewhat limited	
		Seepage, bottom layer	1.00			Too clayey	0.50
		Too clayey	0.50				

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
5C:							
Cecil	90	Very limited		Somewhat limited		Somewhat limited	
		Seepage, bottom layer	1.00	Slope	0.37	Too clayey	0.50
		Too clayey	0.50			Slope	0.37
		Slope	0.37				
6B3:							
Cecil	88	Very limited		Not limited		Somewhat limited	
		Seepage, bottom layer	1.00			Too clayey	0.50
		Too clayey	0.50				
6C3:							
Cecil	90	Very limited		Somewhat limited		Somewhat limited	
		Seepage, bottom layer	1.00	Slope	0.37	Too clayey	0.50
		Too clayey	0.50			Slope	0.37
		Slope	0.37				
7B:							
Cecil	85	Very limited		Not limited		Somewhat limited	
		Seepage, bottom layer	1.00			Too clayey	0.50
		Too clayey	0.50				
Urban land	15	Not rated		Not rated		Not rated	
7C:							
Cecil	85	Very limited		Somewhat limited		Somewhat limited	
		Seepage, bottom layer	1.00	Slope	0.37	Too clayey	0.50
		Too clayey	0.50			Slope	0.37
		Slope	0.37				
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	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		
9A:							
Chewacla	60	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		
Wehadkee	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50				
10B:							
Emporia	85	Somewhat limited		Not limited		Not limited	
		Depth to saturated zone	0.02				

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11B:							
Enon	85	Not limited		Not limited		Not limited	
12B:							
Fluvanna	50	Very limited		Not limited		Very limited	
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
Lignum	35	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Depth to saturated zone	0.64	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.05	Hard to compact	1.00
		Depth to saturated zone	0.99			Depth to saturated zone	0.80
13B:							
Georgeville	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
13C:							
Georgeville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37
14C:							
Georgeville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
Mattaponi	15	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
		Depth to saturated zone	0.47			Depth to saturated zone	0.11
15D:							
Goldston	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.99
Badin	15	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			Depth to bedrock	1.00
16B:							
Helena	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.64	Depth to saturated zone	0.80
		Too clayey	0.50			Too clayey	0.50
16C:							
Helena	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.64	Depth to saturated zone	0.80
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
17B:							
Herndon	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
18B:							
Iredell	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.75	Hard to compact	1.00
						Depth to saturated zone	0.86
18C:							
Iredell	82	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.75	Hard to compact	1.00
		Slope	0.37	Slope	0.37	Depth to saturated zone	0.86
						Slope	0.37
19B:							
Lignum	60	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Depth to saturated zone	0.64	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.05	Hard to compact	1.00
		Depth to saturated zone	0.99			Depth to saturated zone	0.80
Cid	35	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to saturated zone	0.64	Hard to compact	1.00
		Depth to saturated zone	0.99			Depth to bedrock	1.00
20C3:							
Madison	88	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Slope	0.37
20D3:							
Madison	88	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
21B:							
Mattaponi	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
		Depth to saturated zone	0.47			Depth to saturated zone	0.11
22C:							
Pacolet	88	Somewhat limited		Somewhat limited		Somewhat limited	
		Too clayey	0.50	Slope	0.37	Too clayey	0.50
		Slope	0.37			Hard to compact	0.50
						Slope	0.37
22D:							
Pacolet	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
						Hard to compact	0.50
23B:							
Rion	90	Not limited		Not limited		Not limited	

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
23D:							
Rion	88	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
24C:							
Rion	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37
Ashlar	40	Very limited		Very limited		Somewhat limited	
		Seepage, bottom layer	1.00	Seepage	1.00	Seepage	0.50
		Slope	0.37	Slope	0.37	Slope	0.37
25A:							
Riverview	88	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.50
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.11
		Seepage, bottom layer	1.00	Seepage	1.00		
26B:							
Santuc	85	Very limited		Not limited		Somewhat limited	
		Seepage, bottom layer	1.00			Depth to saturated zone	0.11
		Depth to saturated zone	0.47				
27B:							
Tatum	85	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	0.42	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to bedrock	0.42
Badin	15	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Too clayey	1.00
		Too clayey	1.00			Depth to bedrock	1.00
27C:							
Tatum	85	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	0.42	Too clayey	1.00
		Too clayey	1.00	Slope	0.37	Hard to compact	1.00
		Slope	0.37			Depth to bedrock	0.42
Badin	15	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	0.37	Depth to bedrock	1.00
		Slope	0.37			Slope	0.37
28B:							
Turbeville	85	Somewhat limited		Not limited		Somewhat limited	
		Too clayey	0.50			Too clayey	0.50
29B:							
Wedowee	88	Not limited		Not limited		Not limited	
29C:							
Wedowee	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Slope	0.37	Slope	0.37

Table 12.—Sanitary Facilities, Part II—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		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
29D:							
Wedowee	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
30A:							
Wehadkee	88	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
		Too clayey	0.50				
31B:							
Worsham	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
DAM:							
Dam	95	Not rated		Not rated		Not rated	
UdC:							
Udorthents, loamy	85	Not limited		Not limited		Not limited	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 13.—Construction Materials, Part I

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1C:					
Appling-------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
2B:					
Appling-------------	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mattaponi-----------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
3D:					
Ashlar--------------	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
Rock outcrop--------	15	Not rated		Not rated	
3E:					
Ashlar--------------	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
Rock outcrop--------	15	Not rated		Not rated	
4C:					
Badin---------------	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Goldston------------	40	Fair		Poor	
		Thickest layer	0.01	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
5B:					
Cecil---------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
5C:					
Cecil---------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
6B3:					
Cecil---------------	88	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
6C3:					
Cecil	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
7B:					
Cecil	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Urban land	15	Not rated		Not rated	
7C:					
Cecil	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Urban land	15	Not rated		Not rated	
8A:					
Chewacla	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
9A:					
Chewacla	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Wehadkee	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
10B:					
Emporia	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
11B:					
Enon	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
12B:					
Fluvanna	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Lignum	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
13B:					
Georgeville	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
13C:					
Georgeville	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
14C:					
Georgeville----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Mattaponi-----------	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
15D:					
Goldston------------	85	Fair		Poor	
		Thickest layer	0.01	Bottom layer	0.00
		Bottom layer	0.12	Thickest layer	0.00
Badin---------------	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
16B:					
Helena--------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
16C:					
Helena--------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
17B:					
Herndon-------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
18B:					
Iredell-------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
18C:					
Iredell-------------	82	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
19B:					
Lignum--------------	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cid-----------------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
20C3:					
Madison-------------	88	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
20D3:					
Madison-------------	88	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
21B:					
Mattaponi-----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
22C:					
Pacolet-------------	88	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
22D:					
Pacolet-------------	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.04
23B:					
Rion----------------	90	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
23D:					
Rion----------------	88	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
24C:					
Rion----------------	60	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
Ashlar--------------	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.04
		Thickest layer	0.00	Thickest layer	0.04
25A:					
Riverview-----------	88	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.04
		Thickest layer	0.00	Bottom layer	0.13
26B:					
Santuc--------------	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
27B:					
Tatum---------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badin---------------	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 13.—Construction Materials, Part I—Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
27C:					
Tatum	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Badin	15	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
28B:					
Turbeville	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
29B:					
Wedowee	88	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
29C:					
Wedowee	90	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
29D:					
Wedowee	85	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
30A:					
Wehadkee	88	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
31B:					
Worsham	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
DAM:					
Dam	95	Not rated		Not rated	
UdC:					
Udorthents, loamy	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
W:					
Water	100	Not rated		Not rated	

Table 13.—Construction Materials, Part II

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		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
1C:							
Appling-------------	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.22	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.63
		Too acid	0.32			Too acid	0.88
2B:							
Appling-------------	60	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.22	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.32				
Mattaponi-----------	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.91	Too acid	0.88
						Rock fragments	0.97
		Too acid	0.50				
3D:							
Ashlar--------------	85	Fair		Fair		Poor	
		Droughty	0.02	Slope	0.50	Slope	0.00
		Organic matter content low	0.12			Rock fragments	0.00
						Too acid	0.76
		Too acid	0.50				
Rock outcrop--------	15	Not rated		Not rated		Not rated	
3E:							
Ashlar--------------	85	Fair		Poor		Poor	
		Droughty	0.02	Slope	0.00	Slope	0.00
		Organic matter content low	0.12			Rock fragments	0.00
						Too acid	0.76
		Too acid	0.50				
Rock outcrop--------	15	Not rated		Not rated		Not rated	
4C:							
Badin---------------	60	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Slope	0.37
				Shrink-swell	0.87	Too acid	0.50
		Too acid	0.50				
Goldston------------	40	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.00			Depth to bedrock	0.00
		Organic matter content low	0.12			Slope	0.37

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
5B:							
Cecil	90	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.32				
5C:							
Cecil	90	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.63
						Too acid	0.88
		Too acid	0.32				
6B3:							
Cecil	88	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.32				
6C3:							
Cecil	90	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.63
						Too acid	0.88
		Too acid	0.32				
7B:							
Cecil	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.32				
Urban land	15	Not rated		Not rated		Not rated	
7C:							
Cecil	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.63
						Too acid	0.88
		Too acid	0.32				
Urban land	15	Not rated		Not rated		Not rated	
8A:							
Chewacla	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
				Low strength	0.00	Too acid	0.98
		Too acid	0.54				
9A:							
Chewacla	60	Fair		Poor		Poor	
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
				Low strength	0.00	Too acid	0.98
		Too acid	0.54				
Wehadkee	40	Fair		Poor		Poor	
		Too acid	0.54	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.90	Low strength	0.00		

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
10B:							
Emporia	85	Fair		Good		Fair	
		Organic matter content low	0.12			Too acid	0.98
		Too acid	0.54				
11B:							
Enon	85	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.04	Too clayey	0.00
		Organic matter content low	0.12			Rock fragments	0.50
		Too acid	0.97				
12B:							
Fluvanna	50	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Too acid	0.88
		Too acid	0.32				
Lignum	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.62	Wetness depth	0.62
				Depth to bedrock	0.95	Too acid	0.88
		Too acid	0.50				
13B:							
Georgeville	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.32				
13C:							
Georgeville	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.63
						Too acid	0.88
		Too acid	0.32				
14C:							
Georgeville	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.37
						Too acid	0.88
		Too acid	0.32				
Mattaponi	15	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.91	Slope	0.37
						Too acid	0.88
		Too acid	0.50				
15D:							
Goldston	85	Poor		Poor		Poor	
		Depth to bedrock	0.00	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.00	Slope	0.50	Rock fragments	0.00
		Organic matter content low	0.12			Depth to bedrock	0.00

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
15D:							
Badin	15	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.12	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Slope	0.50	Too acid	0.50
16B:							
Helena	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.08	Shrink-swell	0.54	Wetness depth	0.62
		Organic matter content low	0.12	Wetness depth	0.62		
16C:							
Helena	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.08	Shrink-swell	0.54	Wetness depth	0.62
		Organic matter content low	0.12	Wetness depth	0.62	Slope	0.63
17B:							
Herndon	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.88
		Too acid	0.32				
18B:							
Iredell	85	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.53
				Wetness depth	0.53		
		Too acid	0.97				
18C:							
Iredell	82	Poor		Poor		Poor	
		Too clayey	0.00	Shrink-swell	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Wetness depth	0.53
				Wetness depth	0.53	Slope	0.63
		Too acid	0.97				
19B:							
Lignum	60	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Wetness depth	0.62	Wetness depth	0.62
				Depth to bedrock	0.95	Too acid	0.88
		Too acid	0.50				
Cid	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Depth to bedrock	0.00	Too acid	0.50
				Wetness depth	0.62	Wetness depth	0.62
		Too acid	0.50				
20C3:							
Madison	88	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.63
						Too acid	0.88
		Too acid	0.32				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
20D3:							
Madison	88	Poor		Fair		Poor	
		Too clayey	0.00	Slope	0.08	Slope	0.00
		Organic matter content low	0.12	Low strength	0.10	Too clayey	0.00
						Too acid	0.88
		Too acid	0.32				
21B:							
Mattaponi	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.91	Too acid	0.88
						Rock fragments	0.97
		Too acid	0.50				
22C:							
Pacolet	88	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Too clayey	0.00
		Organic matter content low	0.12			Slope	0.63
						Too acid	0.98
		Too acid	0.54				
22D:							
Pacolet	90	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.10	Slope	0.00
		Organic matter content low	0.12	Slope	0.50	Too clayey	0.00
						Too acid	0.98
		Too acid	0.54				
23B:							
Rion	90	Fair		Good		Fair	
		Organic matter content low	0.12			Rock fragments	0.88
		Too acid	0.68				
23D:							
Rion	88	Fair		Fair		Poor	
		Organic matter content low	0.12	Slope	0.50	Slope	0.00
						Rock fragments	0.88
		Too acid	0.68				
24C:							
Rion	60	Fair		Good		Fair	
		Organic matter content low	0.12			Slope	0.63
						Rock fragments	0.88
		Too acid	0.68				
Ashlar	40	Fair		Good		Poor	
		Droughty	0.02			Rock fragments	0.00
		Organic matter content low	0.12			Slope	0.63
						Too acid	0.76
		Too acid	0.50				
25A:							
Riverview	88	Fair		Good		Good	
		Organic matter content low	0.50				
		Too acid	0.68				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
26B:							
Santuc	85	Poor		Good		Fair	
		Wind erosion	0.00			Too acid	0.76
		Too acid	0.20				
		Organic matter content low	0.50				
27B:							
Tatum	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Depth to bedrock	0.58	Too clayey	0.00
				Shrink-swell	0.87	Too acid	0.88
		Too acid	0.50				
Badin	15	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Too acid	0.50
				Shrink-swell	0.87	Depth to bedrock	0.97
		Too acid	0.50				
27C:							
Tatum	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Rock fragments	0.00
		Organic matter content low	0.12	Depth to bedrock	0.58	Too clayey	0.00
				Shrink-swell	0.87	Slope	0.63
		Too acid	0.50				
Badin	15	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.12	Low strength	0.00	Too acid	0.50
				Shrink-swell	0.87	Slope	0.63
		Too acid	0.50				
28B:							
Turbeville	85	Poor		Fair		Poor	
		Too clayey	0.00	Low strength	0.78	Too clayey	0.00
		Organic matter content low	0.12	Shrink-swell	0.87	Too acid	0.88
		Too acid	0.50				
29B:							
Wedowee	88	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				
29C:							
Wedowee	90	Poor		Good		Poor	
		Too clayey	0.00			Too clayey	0.00
		Organic matter content low	0.12			Too acid	0.59
						Slope	0.63
		Too acid	0.50				
29D:							
Wedowee	85	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	0.59
		Too acid	0.50				

Table 13.—Construction Materials, Part II—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
30A:							
Wehadkee------------	88	Fair		Poor		Poor	
		Too acid	0.54	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.90	Low strength	0.00		
31B:							
Worsham-------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.32	Low strength	0.00	Too clayey	0.00
				Shrink-swell	0.87	Too acid	0.88
DAM:							
Dam-----------------	95	Not rated		Not rated		Not rated	
UdC:							
Udorthents, loamy---	85	Fair		Fair		Good	
		Organic matter content low	0.50	Shrink-swell	0.87		
		Too acid	0.97				
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 14.—Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1C:							
Appling-------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	1.00				
2B:							
Appling-------------	60	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	0.32				
Mattaponi-----------	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.32	Piping	0.65	Depth to water	1.00
		Seepage	0.05	Depth to saturated zone	0.46		
3D:							
Ashlar--------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.91	Depth to water	1.00
		Slope	1.00	Seepage	0.04		
		Depth to bedrock	0.86				
Rock outcrop--------	15	Not rated		Not rated		Not rated	
3E:							
Ashlar--------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.91	Depth to water	1.00
		Slope	1.00	Seepage	0.04		
		Depth to bedrock	0.86				
Rock outcrop--------	15	Not rated		Not rated		Not rated	
4C:							
Badin---------------	60	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.61	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.02				
Goldston------------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.95	Seepage	0.12		
		Seepage	0.01				
5B:							
Cecil---------------	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	0.08				
5C:							
Cecil---------------	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	1.00				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
6B3:							
Cecil	88	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	0.08				
6C3:							
Cecil	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	1.00				
7B:							
Cecil	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	0.08				
Urban land	15	Not rated		Not rated		Not rated	
7C:							
Cecil	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	1.00				
Urban land	15	Very rated		Not rated		Not rated	
8A:							
Chewacla	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.41		
9A:							
Chewacla	60	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.41		
Wehadkee	40	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.81		
10B:							
Emporia	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.57	Depth to saturated zone	0.02	Depth to water	1.00
		Slope	0.32				
11B:							
Enon	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.32	Hard to pack	0.70	Depth to water	1.00
		Seepage	0.19				
12B:							
Fluvanna	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.32	Piping	0.23	Depth to water	1.00
		Seepage	0.01				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
12B:							
Lignum	35	Somewhat limited		Very limited		Very limited	
		Seepage	0.43	Depth to saturated zone	0.99	Depth to water	1.00
		Slope	0.08	Thin layer	0.01		
		Depth to bedrock	0.01				
13B:							
Georgeville	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.32				
13C:							
Georgeville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.70				
14C:							
Georgeville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.70				
Mattaponi	15	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.65	Depth to water	1.00
		Seepage	0.05	Depth to saturated zone	0.46		
15D:							
Goldston	85	Very limited		Very limited		Very limited	
		Slope	1.00	Thin layer	1.00	Depth to water	1.00
		Depth to bedrock	0.95	Seepage	0.12		
		Seepage	0.01				
Badin	15	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.61	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.02				
16B:							
Helena	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.95	Depth to saturated zone	0.99	Depth to water	1.00
		Slope	0.32	Piping	0.32		
16C:							
Helena	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to saturated zone	0.99	Depth to water	1.00
		Seepage	0.95	Piping	0.32		
17B:							
Herndon	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.32				
18B:							
Iredell	85	Somewhat limited		Very limited		Very limited	
		Slope	0.32	Depth to saturated zone	0.99	Depth to water	1.00
				Hard to pack	0.92		

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
18C:							
Iredell	82	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to saturated zone	0.99	Depth to water	1.00
				Hard to pack	0.92		
19B:							
Lignum	60	Somewhat limited		Very limited		Very limited	
		Seepage	0.43	Depth to saturated zone	0.99	Depth to water	1.00
		Slope	0.08				
		Depth to bedrock	0.01	Thin layer	0.01		
Cid	35	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.69	Depth to saturated zone	0.99	Depth to water	1.00
		Slope	0.08				
				Thin layer	0.83		
				Hard to pack	0.46		
20C3:							
Madison	88	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Seepage	0.04		
20D3:							
Madison	88	Very limited		Very limited		Very limited	
		Slope	1.00	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Seepage	0.04		
21B:							
Mattaponi	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.08	Piping	0.53	Depth to water	1.00
		Seepage	0.05	Depth to saturated zone	0.46		
22C:							
Pacolet	88	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.73	Depth to water	1.00
		Seepage	0.70	Seepage	0.04		
22D:							
Pacolet	90	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Piping	0.73	Depth to water	1.00
		Seepage	0.70	Seepage	0.04		
23B:							
Rion	90	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.01	Depth to water	1.00
		Slope	0.32				
23D:							
Rion	88	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.01	Depth to water	1.00
		Seepage	0.70				
24C:							
Rion	60	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.01	Depth to water	1.00
		Seepage	0.70				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
24C:							
Ashlar	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.91	Depth to water	1.00
		Slope	1.00	Seepage	0.04		
		Depth to bedrock	0.86				
25A:							
Riverview	88	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.46	Cutbanks cave	1.00
				Seepage	0.13	Depth to saturated zone	0.24
26B:							
Santuc	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.46	Depth to water	1.00
		Slope	0.32	Seepage	0.03		
27B:							
Tatum	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Hard to pack	0.43	Depth to water	1.00
		Slope	0.68	Thin layer	0.11		
		Depth to bedrock	0.01				
Badin	15	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Thin layer	0.61	Depth to water	1.00
		Slope	0.68				
		Depth to bedrock	0.02				
27C:							
Tatum	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Hard to pack	0.43	Depth to water	1.00
		Seepage	0.70	Thin layer	0.11		
		Depth to bedrock	0.01				
Badin	15	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.61	Depth to water	1.00
		Seepage	0.70				
		Depth to bedrock	0.02				
28B:							
Turbeville	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.32				
29B:							
Wedowee	88	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Seepage	0.01	Depth to water	1.00
		Slope	0.08				
29C:							
Wedowee	90	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.01	Depth to water	1.00
		Seepage	0.70				
29D:							
Wedowee	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Seepage	0.01	Depth to water	1.00
		Seepage	0.70				

Table 14.—Water Management—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas		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
30A:							
Wehadkee------------	88	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.81		
31B:							
Worsham-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.32	Depth to saturated zone	1.00	Cutbanks cave	0.10
		Seepage	0.05				
				Hard to pack	0.13		
DAM:							
Dam-----------------	95	Not rated		Not rated		Not rated	
UdC:							
Udorthents, loamy---	85	Somewhat limited		Not limited		Very limited	
		Slope	0.68			Depth to water	1.00
		Seepage	0.05				
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 15.—Engineering Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
1C:												
Appling---------	0-12	Sandy loam	SM, SC-SM	A-2-4, A-1-b, A-4	0	0-5	85-100	80-100	50-70	25-40	9-20	NP-2
	12-51	Clay, sandy clay, clay loam	ML, SM	A-6, A-2-4, A-7-5	0	0	90-100	85-100	70-100	30-95	20-49	2-15
	51-61	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-2-4, A-4, A-1-b	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
2B:												
Appling---------	0-12	Sandy loam	SM, SC-SM	A-1-b, A-4, A-2-4	0	0-5	85-100	80-100	50-70	25-40	9-20	NP-2
	12-51	Clay, sandy clay, clay loam	SM, ML	A-6, A-2-4, A-7-5	0	0	90-100	85-100	70-100	30-95	20-49	2-15
	51-61	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-4, A-2-4, A-1-b	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
Mattaponi-------	0-10	Sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-5	90-100	85-100	50-70	25-40	12-23	NP-6
	10-14	Sandy loam	SC-SM, SM	A-2-4, A-4, A-1-b	0	0-5	90-100	85-100	50-100	20-50	12-23	NP-6
	14-35	Clay, sandy clay, sandy clay loam	SC-SM, MH, SC, CL, CH	A-4, A-6, A-7-5	0	0-1	80-100	75-100	65-100	45-95	25-66	7-30
	35-60	Clay loam, clay, sandy clay	SC, CL	A-4, A-6, A-7-6	0	0-1	80-100	75-100	65-100	45-95	31-43	10-17
3D:												
Ashlar----------	0-3	Sandy loam	SM, SC-SM, SC	A-7-6, A-2-4, A-1-b	0	0-5	85-95	80-95	50-65	25-40	20-41	3-13
	3-10	Sandy loam	SC, SC-SM, SM	A-2-4, A-7-6, A-1-b	0	0-5	85-95	80-95	50-65	25-40	20-41	3-13
	10-28	Gravelly sandy loam, loam, sandy loam, gravelly loam, very gravelly sandy loam, very gravelly loam	SC, CL, SC-SM, SM	A-4, A-6, A-1-b	0	0-5	60-95	50-75	30-70	15-55	18-33	3-13
	28-30	Bedrock			---	---	---	---	---	---	---	---
	30-62	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
3E:												
Ashlar----------	0-3	Sandy loam	SM, SC-SM, SC	A-7-6, A-1-b, A-2-4	0	0-5	85-95	80-95	50-65	25-40	20-41	3-13
	3-10	Sandy loam	SM, SC, SC-SM	A-7-6, A-2-4, A-1-b	0	0-5	85-95	80-95	50-65	25-40	20-41	3-13
	10-28	Gravelly sandy loam, loam, sandy loam, gravelly loam, very gravelly sandy loam, very gravelly loam	SM, SC-SM, SC, CL	A-4, A-1-b, A-6	0	0-5	60-95	50-75	30-70	15-55	18-33	3-13
	28-30	Bedrock			---	---	---	---	---	---	---	---
	30-62	Bedrock			---	---	---	---	---	---	---	---
Rock outcrop.												
4C:												
Badin-----------	0-7	Silt loam, channery silt loam, channery loam	GM, CL, ML	A-2-4, A-6, A-7-6	0	0-7	60-95	50-93	40-90	30-80	20-43	3-18
	7-37	Silty clay, silty clay loam, clay, clay loam, channery silty clay loam, channery clay, channery silty clay, channery clay loam	CL, GC, CH	A-7-6, A-2-6	0	0-7	60-95	50-93	45-90	35-85	37-63	19-40
	37-60	Bedrock			---	---	---	---	---	---	---	---
Goldston--------	0-6	Channery silt loam	GC, CL-ML, CL, GC-GM	A-6, A-2-4	0	0-15	55-75	50-75	15-70	15-60	22-38	7-19
	6-18	Very channery silt loam, channery silt loam	GW-GC, GC	A-2-6	0	0-15	10-50	10-50	10-40	10-35	22-37	7-19
	18-26	Bedrock			---	---	---	---	---	---	---	---
	26-39	Bedrock			---	---	---	---	---	---	---	---
5B:												
Cecil-----------	0-10	Sandy loam	SM, SC-SM	A-2, A-2-4, A-1-b, A-4	0	0-2	85-100	80-100	45-70	25-40	9-20	NP-2
	10-16	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-1-b, A-2-4, A-2, A-4	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
	16-50	Clay, clay loam, sandy clay loam	SM, ML, SC-SM	A-7, A-7-5, A-5, A-2-4	0	0	90-100	85-100	70-100	30-95	30-49	6-15
	50-65	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-4, A-2-4, A-1-b, A-2	0	0	90-100	85-100	50-95	25-75	9-27	NP-5

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
5C:												
Cecil-----------	0-10	Sandy loam	SC-SM, SM	A-1-b, A-2-4, A-2, A-4	0	0-2	85-100	80-100	45-70	25-40	9-20	NP-2
	10-16	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-4, A-1-b, A-2-4, A-2	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
	16-50	Clay, clay loam, sandy clay loam	ML, SM, SC-SM	A-7, A-5, A-7-5, A-2-4	0	0	90-100	85-100	70-100	30-95	30-49	6-15
	50-65	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-1-b, A-2, A-4, A-2-4	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
6B3:												
Cecil-----------	0-10	Sandy clay loam, sandy loam	SC-SM, SM	A-4, A-2	0	0-2	85-100	80-100	45-80	25-40	9-20	NP-2
	10-16	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-2-4, A-1-b, A-4, A-2	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
	16-50	Clay, clay loam, sandy clay loam	ML, SM, SC-SM	A-7, A-5, A-7-5, A-2-4	0	0	90-100	85-100	70-100	30-95	30-49	6-15
	50-65	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-4, A-2-4, A-1-b, A-2	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
6C3:												
Cecil-----------	0-10	Sandy clay loam, sandy loam	SC-SM, SM	A-2, A-4	0	0-2	85-100	80-100	45-80	25-40	18-50	2-27
	10-16	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-4, A-2, A-1-b, A-2-4	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
	16-50	Clay, clay loam, sandy clay loam	SM, ML, SC-SM	A-7-5, A-2-4, A-5, A-7	0	0	90-100	85-100	70-100	30-95	30-49	6-15
	50-65	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-4, A-2, A-1-b, A-2-4	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
7B:												
Cecil-----------	0-10	Sandy loam	SM, SC-SM	A-4, A-2, A-2-4, A-1-b	0	0-2	85-100	80-100	45-70	25-40	9-20	NP-2
	10-16	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-2, A-1-b, A-2-4, A-4	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
	16-50	Clay, clay loam, sandy clay loam	ML, SC-SM, SM	A-7-5, A-2-4, A-5, A-7	0	0	90-100	85-100	70-100	30-95	30-49	6-15
	50-65	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-2-4, A-1-b, A-2, A-4	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
Urban land.												

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
7C:												
Cecil-----------	0-10	Sandy loam	SC-SM, SM	A-2, A-4, A-1-b, A-2-4	0	0-2	85-100	80-100	45-70	25-40	9-20	NP-2
	10-16	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-1-b, A-2-4, A-4, A-2	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
	16-50	Clay, clay loam, sandy clay loam	SM, ML, SC-SM	A-5, A-7, A-7-5, A-2-4	0	0	90-100	85-100	70-100	30-95	30-49	6-15
	50-65	Sandy clay loam, loam, sandy loam	ML, SM, SC-SM	A-4, A-2, A-1-b, A-2-4	0	0	90-100	85-100	50-95	25-75	9-27	NP-5
Urban land.												
8A:												
Chewacla--------	0-8	Silt loam	ML, CL, CL-ML	A-6, A-4, A-7-6	0	0	85-100	80-100	65-95	50-75	22-45	3-18
	8-36	Silt loam	ML, CL-ML, CL	A-6, A-4, A-7-6	0	0	85-100	80-100	65-95	50-75	19-41	3-19
	36-55	Silty clay loam, sandy clay loam	SC, CL	A-2-6, A-7-6, A-6	0	0	70-100	70-100	60-100	30-95	29-49	13-28
	55-62	Silt loam	ML, CL-ML, CL	A-6, A-4	0	0	85-100	80-100	65-95	50-75	19-39	3-19
9A:												
Chewacla--------	0-8	Silt loam	CL, CL-ML, ML	A-6, A-7-6, A-4	0	0	85-100	80-100	65-95	50-75	22-45	3-18
	8-36	Silt loam	CL, CL-ML, ML	A-6, A-4, A-7-6	0	0	85-100	80-100	65-95	50-75	19-41	3-19
	36-55	Silty clay loam, sandy clay loam	SC, CL	A-6, A-2-6, A-7-6	0	0	70-100	70-100	60-100	30-95	29-49	13-28
	55-62	Silt loam	CL, ML, CL-ML	A-6, A-4	0	0	85-100	80-100	65-95	50-75	19-39	3-19
Wehadkee--------	0-4	Silt loam	ML, CL	A-6, A-4	0	0	80-100	80-100	65-95	50-75	25-39	6-13
	4-16	Loam, silt loam	SM, SC-SM, ML, CL-ML	A-1-b, A-4, A-2-4, A-6	0	0	85-100	80-100	50-95	25-75	16-33	2-12
	16-26	Sandy clay loam, clay loam, silty clay loam	CL	A-6, A-7-6, A-2-6	0	0	80-100	80-100	60-100	30-95	29-44	13-25
	26-59	Clay loam, silty clay loam, silt loam	ML, CL	A-4, A-7, A-6	0	0	96-100	95-100	80-100	51-98	30-49	4-22
10B:												
Emporia---------	0-8	Sandy loam	ML, SM	A-4, A-2	0	0-3	90-100	80-100	50-95	25-65	13-23	NP-6
	8-18	Sandy loam	SM, ML	A-4, A-2	0	0-3	90-100	80-100	50-95	25-65	13-23	NP-6
	18-39	Sandy clay loam, sandy loam, clay loam	SC, CL	A-2, A-6, A-4	0	0-2	90-100	80-100	45-95	25-70	23-38	6-14
	39-55	Sandy clay loam, clay loam, sandy clay	CL, SC	A-6, A-7, A-4, A-2	0	0-2	90-100	80-100	45-95	30-80	26-43	8-17
	55-60	Stratified sandy clay loam to sandy loam to clay loam	SM, SC, ML, CL	A-1, A-6, A-2, A-4	0	0-2	70-100	55-100	30-90	20-60	12-43	NP-17

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
11B:												
Enon------------	0-4	Clay loam	CL, CL-ML, ML	A-6, A-4	0-1	0-1	99-100	95-100	80-95	51-70	25-38	5-12
	4-31	Clay	CH	A-7-6	0	0	99-100	80-100	60-100	55-95	54-115	29-85
	31-60	Loam, variable, loam, sandy loam, sandy clay loam	SC, SM, CL	A-7-6, A-4, A-6, A-2-4	0	0	99-100	95-100	57-90	28-55	18-44	3-25
12B:												
Fluvanna--------	0-5	Loam	ML, CL-ML, SM	A-4	0	0	85-100	80-100	68-95	48-75	12-23	NP-6
	5-55	Clay, silty clay, silty clay loam	MH, CH, CL	A-7-5, A-6	0	0	95-100	95-100	90-100	81-95	38-66	14-30
	55-99	Silty clay loam, clay loam, gravelly clay loam, very gravelly clay loam	CL, GC, MH, GM, SC	A-4, A-6, A-7	0	0-5	50-100	45-100	45-100	36-95	7-61	NP-27
Lignum----------	0-6	Loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	80-100	70-95	50-75	21-39	6-17
	6-35	Silty clay loam, silty clay, clay	CH, CL	A-7-6	0	0-3	80-100	75-100	70-100	55-90	43-63	25-40
	35-56	Silt loam, gravelly sandy clay loam, gravelly silty clay loam, sandy clay loam	CL, SC	A-7, A-6, A-2	0	0-5	80-100	75-100	70-90	20-75	29-49	13-28
	56-61	Bedrock			---	---	---	---	---	---	---	---
13B:												
Georgeville-----	0-4	Loam	ML, CL-ML	A-4	0	0-2	90-100	85-100	75-100	60-90	14-25	NP-4
	4-39	Silty clay, silty clay loam, clay	ML, MH	A-4, A-7	0	0-2	95-100	95-100	90-100	75-98	31-52	7-16
	39-60	Silt loam, silty clay loam, loam	CL-ML, ML	A-4	0	0-2	90-100	90-100	65-100	51-95	16-34	NP-8
13C:												
Georgeville-----	0-4	Loam	ML, CL-ML	A-4	0	0-2	90-100	85-100	75-100	60-90	14-25	NP-4
	4-39	Silty clay, silty clay loam, clay	ML, MH	A-4, A-7	0	0-2	95-100	95-100	90-100	75-98	31-52	7-16
	39-60	Silt loam, silty clay loam, loam	CL-ML, ML	A-4	0	0-2	90-100	90-100	65-100	51-95	16-34	NP-8
14C:												
Georgeville-----	0-4	Loam	ML, CL-ML	A-4	0	0-2	90-100	85-100	75-100	60-90	14-25	NP-4
	4-39	Silty clay, silty clay loam, clay	ML, MH	A-4, A-7	0	0-2	95-100	95-100	90-100	75-98	31-52	7-16
	39-60	Silt loam, silty clay loam, loam	CL-ML, ML	A-4	0	0-2	90-100	90-100	65-100	51-95	16-34	NP-8

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
14C:												
Mattaponi-------	0-10	Sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-5	90-100	85-100	50-70	25-40	12-23	NP-6
	10-14	Sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-5	90-100	85-100	50-100	20-50	12-23	NP-6
	14-35	Clay, sandy clay, sandy clay loam	MH, SC-SM, CH, CL, SC	A-6, A-7-5, A-4	0	0-1	80-100	75-100	65-100	45-95	25-66	7-30
	35-60	Clay loam, clay, sandy clay	SC, CL	A-4, A-6, A-7-6	0	0-1	80-100	75-100	65-100	45-95	31-43	10-17
15D:												
Goldston--------	0-6	Channery silt loam	GC-GM, CL, CL-ML, GC	A-2-4, A-6	0	0-15	55-75	50-75	15-70	15-60	22-38	7-19
	6-18	Very channery silt loam, channery silt loam	GC, GW-GC	A-2-6	0	0-15	10-50	10-50	10-40	10-35	22-37	7-19
	18-26	Bedrock			---	---	---	---	---	---	---	---
	26-39	Bedrock			---	---	---	---	---	---	---	---
Badin-----------	0-7	Silt loam, channery silt loam, channery loam	GM, CL, ML	A-2-4, A-7-6, A-6	0	0-7	60-95	50-93	40-90	30-80	20-43	3-18
	7-37	Silty clay, silty clay loam, clay, clay loam, channery silty clay loam, channery clay, channery silty clay, channery clay loam	GC, CL, CH	A-2-6, A-7-6	0	0-7	60-95	50-93	45-90	35-85	37-63	19-40
	37-60	Bedrock			---	---	---	---	---	---	---	---
16B:												
Helena----------	0-8	Sandy loam	SC-SM, SM	A-2-4, A-4	0	0-3	85-100	80-100	50-70	25-40	12-25	NP-7
	8-15	Sandy clay loam, sandy loam, loam	CL, SC-SM, SC	A-6, A-4	0	0	80-100	75-100	50-100	25-80	16-38	2-14
	15-50	Sandy clay, clay, clay loam	SC, MH, ML	A-2-6, A-7	0	0	80-100	75-100	65-100	35-95	34-61	12-27
	50-61	Sandy clay loam, sandy clay loam, variable, clay loam, loam	ML, SM, CL	A-6, A-7-6, A-2-4	0	0	80-100	75-100	65-100	35-95	16-42	2-16
16C:												
Helena----------	0-8	Sandy loam	SC-SM, SM	A-2-4, A-4	0	0-3	85-100	80-100	50-70	25-40	12-25	NP-7
	8-15	Sandy clay loam, sandy loam, loam	CL, SC-SM, SC	A-6, A-4	0	0	80-100	75-100	50-100	25-80	16-38	2-14
	15-50	Sandy clay, clay, clay loam	SC, MH, ML	A-7, A-2-6	0	0	80-100	75-100	65-100	35-95	34-61	12-27
	50-61	Sandy clay loam, sandy clay loam, variable, clay loam, loam	CL, ML, SM	A-7-6, A-2-4, A-6	0	0	80-100	75-100	65-100	35-95	16-42	2-16

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
17B:												
Herndon---------	0-8	Loam	CL-ML, ML	A-4	0	0	85-100	80-100	70-100	55-90	9-25	NP-4
	8-57	Clay loam, clay, silty clay, silty clay loam	CL-ML, MH, ML	A-4, A-7, A-7-5	0	0	85-100	80-100	72-100	56-95	25-52	4-16
	57-65	Silt loam, loam, fine sandy loam	ML, CL-ML, SM	A-4	0	0	85-100	80-100	55-100	36-90	13-25	NP-4
18B:												
Iredell---------	0-9	Gravelly sandy loam	SM, SC, SC-SM	A-2-4	0-5	0-5	75-85	65-80	40-55	20-35	20-35	2-10
	9-31	Clay, clay loam	CH	A-7-6	0	0	99-100	85-100	75-100	65-95	54-115	29-85
	31-61	Loam, sandy clay loam, clay loam	SC, CL, CH	A-7	0-1	0-1	98-100	85-100	70-95	40-75	41-60	20-39
18C:												
Iredell---------	0-9	Gravelly sandy loam	SM, SC, SC-SM	A-2-4	0-5	0-5	75-85	65-80	40-55	20-35	20-35	2-10
	9-31	Clay, clay loam	CH	A-7-6	0	0	99-100	85-100	75-100	65-95	54-115	29-85
	31-61	Loam, sandy clay loam, clay loam	SC, CL, CH	A-7	0-1	0-1	98-100	85-100	70-95	40-75	41-60	20-39
19B:												
Lignum----------	0-6	Loam	CL-ML, CL	A-6, A-4	0	0-3	95-100	80-100	70-95	50-75	21-39	6-17
	6-35	Silty clay loam, silty clay, clay	CH, CL	A-7-6	0	0-3	80-100	75-100	70-100	55-90	43-63	25-40
	35-56	Silt loam, gravelly sandy clay loam, gravelly silty clay loam, sandy clay loam	CL, SC	A-6, A-7, A-2	0	0-5	80-100	75-100	70-90	20-75	29-49	13-28
	56-61	Bedrock			---	---	---	---	---	---	---	---
Cid-------------	0-6	Silt loam	CL, CL-ML	A-6, A-4	0	0-5	85-100	80-100	70-100	55-90	21-39	6-17
	6-31	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7-6	0	0-2	85-100	80-100	70-100	60-95	37-67	19-44
	31-35	Bedrock			---	---	---	---	---	---	---	---
	35-45	Bedrock			---	---	---	---	---	---	---	---
20C3:												
Madison---------	0-4	Clay loam	ML	A-4	0	0	85-100	80-100	70-95	50-75	25-34	3-7
	4-48	Clay, clay loam, sandy clay loam	SM, ML, SC-SM	A-5, A-7-5, A-2-4	0	0	90-100	85-100	70-100	30-95	30-49	5-12
	48-60	Fine sandy loam, sandy loam, loam	ML, SM	A-4, A-2-4	0	0-5	85-100	80-100	60-90	26-55	25-35	NP-7
20D3:												
Madison---------	0-4	Clay loam	ML	A-4	0	0	85-100	80-100	70-95	50-75	25-34	3-7
	4-48	Clay, clay loam, sandy clay loam	SC-SM, SM, ML	A-2-4, A-7-5, A-5	0	0	90-100	85-100	70-100	30-95	30-49	5-12
	48-60	Fine sandy loam, sandy loam, loam	SM, ML	A-2-4, A-4	0	0-5	85-100	80-100	60-90	26-55	25-35	NP-7

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
21B:												
Mattaponi-------	0-10	Gravelly sandy loam	SC-SM, SC, SM	A-6, A-4, A-2	0	0	78-100	56-100	40-85	20-49	17-33	2-12
	10-14	Sandy loam	SC-SM, SM	A-2-4, A-1-b, A-4	0	0-5	90-100	85-100	50-100	20-50	12-23	NP-6
	14-35	Clay, sandy clay, sandy clay loam	MH, SC-SM, CH, CL, SC	A-6, A-7-5, A-4	0	0-1	80-100	75-100	65-100	45-95	25-66	7-30
	35-60	Clay loam, clay, sandy clay	SC, CL	A-7-6, A-4, A-6	0	0-1	80-100	75-100	65-100	45-95	31-43	10-17
22C:												
Pacolet---------	0-5	Sandy loam	SM, SC-SM	A-2, A-1-b	0-5	0-5	90-100	75-100	48-90	24-32	15-28	NP-7
	5-38	Clay, clay loam, sandy clay	ML, MH, CL	A-7, A-6	0-1	0-1	85-100	80-100	60-100	51-75	38-65	11-33
	38-59	Sandy loam, fine sandy loam, loam	SC-SM, SM	A-4, A-2-4	0-2	0-1	85-100	80-100	60-90	25-50	15-28	NP-6
22D:												
Pacolet---------	0-5	Sandy loam	SM, SC-SM	A-2, A-1-b	0-5	0-5	90-100	75-100	48-90	24-32	15-28	NP-7
	5-38	Clay, clay loam, sandy clay	ML, MH, CL	A-7, A-6	0-1	0-1	85-100	80-100	60-100	51-75	38-65	11-33
	38-59	Sandy loam, fine sandy loam, loam	SC-SM, SM	A-2-4, A-4	0-2	0-1	85-100	80-100	60-90	25-50	15-28	NP-6
23B:												
Rion------------	0-4	Sandy loam	SC, SM	A-2-4, A-6	0	0-5	85-100	80-100	50-70	25-40	17-35	2-13
	4-18	Sandy loam, fine sandy loam, loam, gravelly sandy loam, gravelly fine sandy loam, gravelly loam	SM, SC	A-7-6, A-2-4, A-4	0	0-5	80-100	70-100	40-95	20-75	17-41	2-19
	18-38	Sandy clay loam, loam, clay loam, gravelly sandy clay loam, gravelly loam, gravelly clay loam	SC, CL, CL-ML, SC-SM	A-7-6, A-2	0	0-5	75-100	70-100	55-100	25-80	20-49	6-28
	38-62	Sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam, gravelly loam, loam, coarse sandy loam, gravelly sandy loam, fine sandy loam	SM, SC	A-6, A-4, A-2	0	0-5	75-100	60-100	40-85	20-55	16-38	2-19

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
23D:												
Rion------------	0-4	Sandy loam	SC, SM	A-2-4, A-6	0	0-5	85-100	80-100	50-70	25-40	17-35	2-13
	4-18	Sandy loam, fine sandy loam, loam, gravelly sandy loam, gravelly fine sandy loam, gravelly loam	SM, SC	A-2-4, A-4, A-7-6	0	0-5	80-100	70-100	40-95	20-75	17-41	2-19
	18-38	Sandy clay loam, loam, clay loam, gravelly sandy clay loam, gravelly loam, gravelly clay loam	CL, SC-SM, SC, CL-ML	A-7-6, A-2	0	0-5	75-100	70-100	55-100	25-80	20-49	6-28
	38-62	Sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam, gravelly loam, loam, coarse sandy loam, gravelly sandy loam, fine sandy loam	SM, SC	A-6, A-4, A-2	0	0-5	75-100	60-100	40-85	20-55	16-38	2-19
24C:												
Rion------------	0-4	Sandy loam	SM, SC	A-6, A-2-4	0	0-5	85-100	80-100	50-70	25-40	17-35	2-13
	4-18	Sandy loam, fine sandy loam, loam, gravelly sandy loam, gravelly fine sandy loam, gravelly loam	SM, SC	A-7-6, A-4, A-2-4	0	0-5	80-100	70-100	40-95	20-75	17-41	2-19
	18-38	Sandy clay loam, loam, clay loam, gravelly sandy clay loam, gravelly loam, gravelly clay loam	CL, CL-ML, SC, SC-SM	A-2, A-7-6	0	0-5	75-100	70-100	55-100	25-80	20-49	6-28
	38-62	Sandy loam, gravelly coarse sandy loam, gravelly fine sandy loam, gravelly loam, loam, coarse sandy loam, gravelly sandy loam, fine sandy loam	SC, SM	A-6, A-4, A-2	0	0-5	75-100	60-100	40-85	20-55	16-38	2-19

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
24C:												
Ashlar----------	0-3	Sandy loam	SM, SC-SM, SC	A-7-6, A-1-b, A-2-4	0	0-5	85-95	80-95	50-65	25-40	20-41	3-13
	3-10	Sandy loam	SC-SM, SC, SM	A-1-b, A-2-4, A-7-6	0	0-5	85-95	80-95	50-65	25-40	20-41	3-13
	10-28	Gravelly sandy loam, loam, sandy loam, gravelly loam, very gravelly sandy loam, very gravelly loam	SM, SC, CL, SC-SM	A-1-b, A-6, A-4	0	0-5	60-95	50-75	30-70	15-55	18-33	3-13
	28-30	Bedrock			---	---	---	---	---	---	---	---
	30-62	Bedrock			---	---	---	---	---	---	---	---
25A:												
Riverview-------	0-15	Loam	CL-ML, CL	A-6, A-4	0	0-1	95-100	95-100	80-95	60-75	22-43	6-17
	15-59	Sandy loam, loam	SM, SC-SM	A-4, A-2	0	0	90-100	85-100	50-95	25-75	9-20	NP-2
	59-79	Loamy sand, sandy loam, fine sandy loam, loam	SC-SM, SC, ML, CL-ML, CL, SM	A-4, A-2-4, A-6, A-1	0	0	65-100	50-100	25-95	10-75	16-30	2-12
26B:												
Santuc----------	0-10	Sandy loam	SC-SM, SM	A-2-4, A-4	0	0-1	95-100	85-100	54-63	27-36	16-29	2-9
	10-15	Sandy loam	SM, SC-SM	A-2-4, A-4	0	0	95-100	85-100	54-63	27-36	16-29	2-9
	15-45	Sandy clay loam, clay loam, loam	CL, SC, SC-SM	A-2-4, A-4, A-6	0	0	95-100	95-100	77-88	34-55	23-38	6-14
	45-60	Sandy loam, sandy loam, variable, sandy clay loam, loam	CL, SM, SC-SM	A-2-4, A-4, A-6	0	0	95-100	95-100	77-85	34-55	12-38	NP-14
27B:												
Tatum-----------	0-7	Channery silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	50-75	45-70	35-66	20-34	5-15
	7-22	Silty clay, silty clay loam, clay	CH, MH	A-7	0	0-5	85-100	75-90	70-90	70-85	50-80	20-45
	22-50	Channery silty clay, channery silty clay loam, clay, silty clay loam	MH, CH	A-7	0	0-5	85-100	65-80	65-75	63-66	50-80	20-45
	50-60	Bedrock			0	---	---	---	---	---	---	---
Badin-----------	0-7	Silt loam, channery silt loam, channery loam	GM, CL, ML	A-2-4, A-7-6, A-6	0	0-7	60-95	50-93	40-90	30-80	20-43	3-18
	7-37	Silty clay, silty clay loam, clay, clay loam, channery silty clay loam, channery clay, channery silty clay, channery clay loam	CL, CH, GC	A-7-6, A-2-6	0	0-7	60-95	50-93	45-90	35-85	37-63	19-40
	37-60	Bedrock			---	---	---	---	---	---	---	---

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
27C:												
Tatum-----------	0-7	Channery silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	50-75	45-70	35-66	20-34	5-15
	7-22	Silty clay, silty clay loam, clay	MH, CH	A-7	0	0-5	85-100	75-90	70-90	70-85	50-80	20-45
	22-50	Channery silty clay, channery silty clay loam, clay, silty clay loam	CH, MH	A-7	0	0-5	85-100	65-80	65-75	63-66	50-80	20-45
	50-60	Bedrock			0	---	---	---	---	---	---	---
Badin-----------	0-7	Silt loam, channery silt loam, channery loam	GM, CL, ML	A-2-4, A-7-6, A-6	0	0-7	60-95	50-93	40-90	30-80	20-43	3-18
	7-37	Silty clay, silty clay loam, clay, clay loam, channery silty clay loam, channery clay, channery silty clay, channery clay loam	GC, CL, CH	A-7-6, A-2-6	0	0-7	60-95	50-93	45-90	35-85	37-63	19-40
	37-60	Bedrock			---	---	---	---	---	---	---	---
28B:												
Turbeville------	0-8	Loam	SM, SC-SM, ML	A-4, A-2	0	0-5	90-100	90-100	50-85	25-55	6-20	NP-2
	8-61	Clay, sandy clay, clay loam	ML	A-4	0	0-1	90-100	90-100	50-100	45-95	27-49	5-15
29B:												
Wedowee---------	0-2	Gravelly sandy loam	SM, SC-SM	A-1	0-5	0-5	90-100	50-75	30-52	15-30	9-20	NP-2
	2-6	Gravelly sandy loam, fine sandy loam	SM, SC-SM	A-1	0-5	0-5	90-100	50-75	30-52	15-30	9-20	NP-2
	6-23	Sandy clay, clay loam, clay	ML	A-4	0-1	0	95-100	95-100	65-97	45-75	31-38	7-10
	23-34	Clay loam, sandy clay, clay	ML	A-4	0-1	0	95-100	95-100	65-97	45-75	31-38	7-10
	34-61	Sandy loam, clay loam, sandy clay loam	SM, SC-SM, CL-ML	A-4, A-2	0-1	0	85-100	80-100	60-80	30-60	16-27	NP-5
29C:												
Wedowee---------	0-2	Gravelly sandy loam	SM, SC-SM	A-1	0-5	0-5	90-100	50-75	30-52	15-30	9-20	NP-2
	2-6	Gravelly sandy loam, fine sandy loam	SM, SC-SM	A-1	0-5	0-5	90-100	50-75	30-52	15-30	9-20	NP-2
	6-23	Sandy clay, clay loam, clay	ML	A-4	0-1	0	95-100	95-100	65-97	45-75	31-38	7-10
	23-34	Clay loam, sandy clay, clay	ML	A-4	0-1	0	95-100	95-100	65-97	45-75	31-38	7-10
	34-61	Sandy loam, clay loam, sandy clay loam	SM, SC-SM, CL-ML	A-4, A-2	0-1	0	85-100	80-100	60-80	30-60	16-27	NP-5

Table 15.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
29D:												
Wedowee---------	0-2	Gravelly sandy loam	SM, SC-SM	A-1	0-5	0-5	90-100	50-75	30-52	15-30	9-20	NP-2
	2-6	Gravelly sandy loam, fine sandy loam	SM, SC-SM	A-1	0-5	0-5	90-100	50-75	30-52	15-30	9-20	NP-2
	6-23	Sandy clay, clay loam, clay	ML	A-4	0-1	0	95-100	95-100	65-97	45-75	31-38	7-10
	23-34	Clay loam, sandy clay, clay	ML	A-4	0-1	0	95-100	95-100	65-97	45-75	31-38	7-10
	34-61	Sandy loam, clay loam, sandy clay loam	SM, SC-SM, CL-ML	A-4, A-2	0-1	0	85-100	80-100	60-80	30-60	16-27	NP-5
30A:												
Wehadkee--------	0-4	Silt loam	ML, CL	A-4, A-6	0	0	80-100	80-100	65-95	50-75	25-39	6-13
	4-16	Loam, silt loam	CL-ML, ML, SM, SC-SM	A-1-b, A-2-4, A-4, A-6	0	0	85-100	80-100	50-95	25-75	16-33	2-12
	16-26	Sandy clay loam, clay loam, silty clay loam	CL	A-6, A-7-6, A-2-6	0	0	80-100	80-100	60-100	30-95	29-44	13-25
	26-59	Clay loam, silty clay loam, silt loam	ML, CL	A-7, A-6, A-4	0	0	96-100	95-100	80-100	51-98	30-49	4-22
31B:												
Worsham---------	0-5	Silt loam, sandy loam	SC-SM, SM, SC, ML, CL	A-4, A-2	0	0-2	90-100	85-100	50-85	25-55	15-30	NP-9
	5-10	Silt loam, sandy loam	CL, ML, SC, SM, SC-SM	A-4, A-2	0	0-2	90-100	85-100	50-85	25-55	15-30	NP-9
	10-40	Sandy clay loam, sandy clay, clay	CH, SC, CL	A-2, A-7	0	0-1	90-100	80-100	70-100	30-100	33-66	13-40
	40-60	Sandy loam, sandy clay loam, clay loam	CL, SC	A-2, A-4, A-6, A-7	0	0-1	90-95	80-95	50-90	30-70	22-51	6-29
DAM.												
Dam												
UdC:												
Udorthents, loamy----------	0-80	Variable, sandy clay loam, clay loam, sandy loam	SC-SM, CL, CL-ML, SC	A-7-6, A-2-4, A-4, A-6	0	0-3	95-100	86-100	56-100	26-70	20-45	4-25
W.												
Water												

Table 16.—Physical Soil Properties

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	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	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
1C:														
Appling--------------	0-12	44-85	5-49	5-20	1.40-1.65	14.00-42.00	0.10-0.15	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	12-51	5-65	5-45	20-60	1.25-1.45	4.50-14.00	0.15-0.17	1.0-2.9	0.0-0.5	.20	.20			
	51-61	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
2B:														
Appling--------------	0-12	44-85	5-49	5-20	1.40-1.65	14.00-42.00	0.10-0.15	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	12-51	5-65	5-45	20-60	1.25-1.45	4.50-14.00	0.15-0.17	1.0-2.9	0.0-0.5	.20	.20			
	51-61	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
Mattaponi------------	0-10	44-85	5-49	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	10-14	44-85	5-49	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
	14-35	5-80	5-39	20-65	1.40-1.65	1.50-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.28	.28			
	35-60	5-65	5-45	27-40	1.40-1.65	1.50-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.28	.28			
3D:														
Ashlar---------------	0-3	44-85	5-49	7-20	1.35-1.60	14.50-42.00	0.10-0.13	0.0-2.9	1.0-4.0	.24	.24	2	3	86
	3-10	44-85	5-49	7-20	1.35-1.60	14.50-42.00	0.10-0.13	0.0-2.9	0.5-1.5	.24	.24			
	10-28	32-85	5-49	7-20	1.35-1.60	14.00-42.00	0.10-0.14	0.0-2.9	0.0-0.5	.17	.24			
	28-30	---	---	---	---	0.00-14.00	---	---	---	---	---			
	30-62	---	---	---	---	0.00-14.00	---	---	---	---	---			
Rock outcrop.														
3E:														
Ashlar---------------	0-3	44-85	5-49	7-20	1.35-1.60	14.50-42.00	0.10-0.13	0.0-2.9	1.0-4.0	.24	.24	2	3	86
	3-10	44-85	5-49	7-20	1.35-1.60	14.50-42.00	0.10-0.13	0.0-2.9	0.5-1.5	.24	.24			
	10-28	32-85	5-49	7-20	1.35-1.60	14.00-42.00	0.10-0.14	0.0-2.9	0.0-0.5	.17	.24			
	28-30	---	---	---	---	0.00-14.00	---	---	---	---	---			
	30-62	---	---	---	---	0.00-14.00	---	---	---	---	---			
Rock outcrop.														
4C:														
Badin----------------	0-7	5-52	28-80	7-27	1.20-1.45	4.10-14.00	0.16-0.20	0.0-2.5	0.0-0.5	.32	.37	2	5	56
	7-37	5-45	5-65	27-55	1.30-1.50	4.10-14.00	0.14-0.19	3.0-5.9	0.0-0.5	.24	.28			
	37-60	---	---	---	---	0.00-14.00	---	---	---	---	---			
Goldston-------------	0-6	5-50	50-80	12-27	1.30-1.50	4.50-14.00	0.14-0.19	0.0-2.5	0.0-3.0	.20	.32	1	8	0
	6-18	5-50	50-80	12-27	1.30-1.60	4.50-14.00	0.12-0.18	0.0-2.5	0.0-0.5	.20	.32			
	18-26	---	---	---	---	0.00-14.00	---	---	---	---	---			
	26-39	---	---	---	---	---	---	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
5B:														
Cecil----------------	0-10	44-85	5-49	5-20	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	10-16	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
	16-50	5-80	5-45	34-60	1.30-1.50	4.50-14.00	0.13-0.15	1.0-2.9	0.0-0.5	.20	.20			
	50-65	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
5C:														
Cecil----------------	0-10	44-85	5-49	5-20	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	10-16	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
	16-50	5-80	5-45	34-60	1.30-1.50	4.50-14.00	0.13-0.15	1.0-2.9	0.0-0.5	.20	.20			
	50-65	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
6B3:														
Cecil----------------	0-10	44-85	5-49	5-20	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	1.0-2.0	.24	.24	4	5	56
	10-16	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
	16-50	5-80	5-45	34-60	1.30-1.50	4.50-14.00	0.13-0.15	1.0-2.9	0.0-0.5	.20	.20			
	50-65	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
6C3:														
Cecil----------------	0-10	44-85	5-49	5-38	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	1.0-2.0	.24	.24	4	5	56
	10-16	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
	16-50	5-80	5-45	34-60	1.30-1.50	4.50-14.00	0.13-0.15	1.0-2.9	0.0-0.5	.20	.20			
	50-65	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
7B:														
Cecil----------------	0-10	44-85	5-49	5-20	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	10-16	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
	16-50	5-80	5-45	34-60	1.30-1.50	4.50-14.00	0.13-0.15	1.0-2.9	0.0-0.5	.20	.20			
	50-65	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
Urban land.														
7C:														
Cecil----------------	0-10	44-85	5-49	5-20	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	1.0-2.0	.24	.24	5	3	86
	10-16	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
	16-50	5-80	5-45	34-60	1.30-1.50	4.50-14.00	0.13-0.15	1.0-2.9	0.0-0.5	.20	.20			
	50-65	24-85	5-50	5-30	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-0.2	.24	.24			
Urban land.														
8A:														
Chewacla-------------	0-8	15-32	50-80	7-27	1.20-1.40	4.50-14.00	0.14-0.20	0.0-2.9	2.0-4.0	.32	.37	5	5	56
	8-36	15-32	50-80	7-27	1.20-1.40	4.50-14.00	0.14-0.20	0.0-2.9	0.0-0.5	.28	.28			
	36-55	15-80	5-72	20-40	1.20-1.50	4.50-14.00	0.14-0.24	0.0-2.9	0.0-0.5	.24	.28			
	55-62	15-32	50-80	7-27	1.20-1.40	4.50-14.00	0.14-0.20	0.0-2.9	0.0-0.5	.28	.28			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	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	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
9A:														
Chewacla-------------	0-8	15-32	50-80	7-27	1.20-1.40	4.50-14.00	0.14-0.20	0.0-2.9	2.0-4.0	.32	.37	5	5	56
	8-36	15-32	50-80	7-27	1.20-1.40	4.50-14.00	0.14-0.20	0.0-2.9	0.0-0.5	.28	.28			
	36-55	15-80	5-72	20-40	1.20-1.50	4.50-14.00	0.14-0.24	0.0-2.9	0.0-0.5	.24	.28			
	55-62	15-32	50-80	7-27	1.20-1.40	4.50-14.00	0.14-0.20	0.0-2.9	0.0-0.5	.28	.28			
Wehadkee-------------	0-4	15-32	50-80	10-20	1.20-1.40	4.10-14.00	0.16-0.22	0.0-2.9	2.0-4.0	.37	.37	5	3	48
	4-16	15-52	28-80	7-27	1.20-1.40	4.23-14.11	0.13-0.21	0.0-2.9	0.0-0.5	.43	.43			
	16-26	15-80	5-73	20-35	1.20-1.40	4.10-14.00	0.16-0.20	0.0-2.9	0.0-0.5	.32	.32			
	26-59	15-45	15-80	18-35	1.30-1.50	4.00-14.00	0.15-0.24	0.0-2.9	0.5-2.0	.32	.32			
10B:														
Emporia--------------	0-8	52-82	5-30	7-18	1.30-1.40	14.00-42.00	0.10-0.17	0.0-2.9	0.5-2.0	.28	.28	5	3	86
	8-18	52-82	5-30	7-18	1.30-1.40	14.00-42.00	0.10-0.17	0.0-2.9	0.5-2.0	.28	.28			
	18-39	20-82	5-50	18-35	1.35-1.45	1.40-14.00	0.10-0.18	0.0-2.9	0.0-0.5	.28	.28			
	39-55	20-80	5-50	21-40	1.45-1.60	0.01-4.00	0.10-0.16	3.0-5.9	0.0-0.5	.20	.20			
	55-60	20-82	5-50	5-40	1.45-1.60	0.01-14.00	0.08-0.18	3.0-5.9	0.0-0.5	.20	.24			
11B:														
Enon-----------------	0-4	20-45	15-45	15-35	1.20-1.40	4.00-14.00	0.14-0.17	0.0-2.9	0.5-2.0	.32	.32	5	6	48
	4-31	5-54	5-39	40-60	1.20-1.45	0.42-1.40	0.16-0.22	9.0-25.0	0.0-0.5	.20	.20			
	31-60	24-85	5-50	7-35	1.20-1.40	4.00-14.00	0.14-0.17	0.0-2.9	0.0-0.5	.24	.24			
12B:														
Fluvanna-------------	0-5	24-52	28-50	5-27	1.25-1.55	14.00-42.00	0.10-0.15	0.0-2.9	1.0-3.0	.37	.37	5	3	86
	5-55	5-45	5-65	35-65	1.30-1.60	0.01-4.00	0.10-0.17	3.0-5.9	0.0-0.5	.28	.28			
	55-99	5-45	15-65	20-40	1.30-1.60	0.01-4.00	0.05-0.09	3.0-5.9	0.0-0.5	.28	.32			
Lignum---------------	0-6	24-52	28-50	10-25	1.20-1.50	4.00-14.00	0.14-0.20	0.0-2.5	0.5-2.0	.43	.43	3	3	86
	6-35	5-45	5-65	35-55	1.25-1.55	0.01-0.42	0.10-0.18	3.0-5.9	0.0-0.5	.28	.28			
	35-56	5-80	5-80	20-40	1.25-1.55	1.40-4.00	0.10-0.18	0.0-2.5	0.0-0.5	.28	.32			
	56-61	---	---	---	---	0.00-14.00	0.00-0.01	---	---	---	---			
13B:														
Georgeville----------	0-4	24-52	28-50	12-27	1.20-1.40	4.60-14.00	0.13-0.18	0.0-2.9	0.5-3.0	.43	.43	5	6	48
	4-39	5-45	5-65	35-65	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.28	.28			
	39-60	5-52	28-80	15-40	1.20-1.40	4.00-14.00	0.05-0.10	0.0-2.9	0.0-0.5	.32	.32			
13C:														
Georgeville----------	0-4	24-52	28-50	12-27	1.20-1.40	4.60-14.00	0.13-0.18	0.0-2.9	0.5-3.0	.43	.43	5	6	48
	4-39	5-45	5-65	35-65	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.28	.28			
	39-60	5-52	28-80	15-40	1.20-1.40	4.00-14.00	0.05-0.10	0.0-2.9	0.0-0.5	.32	.32			
14C:														
Georgeville----------	0-4	24-52	28-50	12-27	1.20-1.40	4.60-14.00	0.13-0.18	0.0-2.9	0.5-3.0	.43	.43	5	6	48
	4-39	5-45	5-65	35-65	1.20-1.40	4.00-14.00	0.13-0.18	0.0-2.9	0.0-0.5	.28	.28			
	39-60	5-52	28-80	15-40	1.20-1.40	4.00-14.00	0.05-0.10	0.0-2.9	0.0-0.5	.32	.32			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
14C:														
Mattaponi------------	0-10	44-85	5-49	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	10-14	44-85	5-49	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
	14-35	5-80	5-39	20-65	1.40-1.65	1.50-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.28	.28			
	35-60	5-65	5-45	27-40	1.40-1.65	1.50-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.28	.28			
15D:														
Goldston-------------	0-6	5-50	50-80	12-27	1.30-1.50	4.50-14.00	0.14-0.19	0.0-2.5	0.0-3.0	.20	.32	1	8	0
	6-18	5-50	50-80	12-27	1.30-1.60	4.50-14.00	0.12-0.18	0.0-2.5	0.0-0.5	.20	.32			
	18-26	---	---	---	---	0.00-14.00	---	---	---	---	---			
	26-39	---	---	---	---	---	---	---	---	---	---			
Badin----------------	0-7	5-52	28-80	7-27	1.20-1.45	4.10-14.00	0.16-0.20	0.0-2.5	0.0-0.5	.32	.37	2	5	56
	7-37	5-45	5-65	27-55	1.30-1.50	4.10-14.00	0.14-0.19	3.0-5.9	0.0-0.5	.24	.28			
	37-60	---	---	---	---	0.00-14.00	---	---	---	---	---			
16B:														
Helena---------------	0-8	44-85	5-49	5-20	1.58-1.62	14.00-42.00	0.10-0.12	0.0-2.5	0.5-2.0	.24	.24	5	5	56
	8-15	24-85	5-50	10-35	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.28	.28			
	15-50	5-65	5-45	30-60	1.44-1.55	0.42-1.40	0.13-0.15	6.0-8.9	0.0-0.5	.28	.28			
	50-61	20-80	5-50	10-39	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
16C:														
Helena---------------	0-8	44-85	5-49	5-20	1.58-1.62	14.00-42.00	0.10-0.12	0.0-2.5	0.5-2.0	.24	.24	5	5	56
	8-15	24-85	5-50	10-35	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.2	.28	.28			
	15-50	5-65	5-45	30-60	1.44-1.55	0.42-1.40	0.13-0.15	6.0-8.9	0.0-0.5	.28	.28			
	50-61	20-80	5-50	10-39	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
17B:														
Herndon--------------	0-8	24-52	28-50	5-27	1.20-1.40	4.60-14.00	0.14-0.20	0.0-2.9	0.5-2.0	.43	.43	5	5	56
	8-57	5-45	5-65	27-65	1.20-1.40	4.60-14.00	0.13-0.18	1.0-2.9	0.0-0.5	.28	.28			
	57-65	5-85	5-80	10-27	1.20-1.40	4.60-14.00	0.05-0.08	0.0-2.9	0.0-0.5	.32	.37			
18B:														
Iredell--------------	0-9	44-85	5-49	10-25	1.00-1.50	14.00-42.00	0.12-0.15	0.0-2.9	0.5-2.0	.24	.32	5	3	86
	9-31	5-45	5-45	27-70	1.20-1.45	0.42-1.40	0.16-0.22	9.0-25.0	0.0-0.5	.20	.20			
	31-61	20-80	5-50	15-35	1.30-1.60	0.42-1.40	0.14-0.18	6.0-8.9	0.0-0.5	.28	.28			
18C:														
Iredell--------------	0-9	44-85	5-49	10-25	1.00-1.50	14.00-42.00	0.12-0.15	0.0-2.9	0.5-2.0	.24	.32	5	3	86
	9-31	5-45	5-45	27-70	1.20-1.45	0.42-1.40	0.16-0.22	9.0-25.0	0.0-0.5	.20	.20			
	31-61	20-80	5-50	15-35	1.30-1.60	0.42-1.40	0.14-0.18	6.0-8.9	0.0-0.5	.28	.28			
19B:														
Lignum---------------	0-6	24-52	28-50	10-25	1.20-1.50	4.00-14.00	0.14-0.20	0.0-2.5	0.5-2.0	.43	.43	3	3	86
	6-35	5-45	5-65	35-55	1.25-1.55	0.01-0.42	0.10-0.18	3.0-5.9	0.0-0.5	.28	.28			
	35-56	5-80	5-80	20-40	1.25-1.55	1.40-4.00	0.10-0.18	0.0-2.5	0.0-0.5	.28	.32			
	56-61	---	---	---	---	0.00-14.00	0.00-0.01	---	---	---	---			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	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	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
19B:														
Cid------------------	0-6	5-50	5-80	10-25	1.35-1.60	4.00-14.00	0.14-0.20	0.0-2.5	0.5-2.0	.43	.43	2	5	56
	6-31	5-45	5-65	27-60	1.25-1.55	0.50-1.40	0.12-0.18	3.0-5.9	0.0-0.5	.28	.28			
	31-35	---	---	---	---	0.00-14.00	---	---	---	---	---			
	35-45	---	---	---	---	0.00-42.00	---	---	---	---	---			
20C3:														
Madison--------------	0-4	20-45	15-45	27-40	1.25-1.35	4.50-14.00	0.10-0.14	3.0-5.9	0.5-1.5	.24	.24	4	6	48
	4-48	5-80	5-45	34-60	1.30-1.50	4.50-14.00	0.13-0.15	1.0-2.9	0.0-0.5	.20	.20			
	48-60	24-85	5-50	5-20	1.30-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.37	.37			
20D3:														
Madison--------------	0-4	20-45	15-45	27-40	1.25-1.35	4.50-14.00	0.10-0.14	3.0-5.9	0.5-1.5	.24	.24	4	6	48
	4-48	5-80	5-45	34-60	1.30-1.50	4.50-14.00	0.13-0.15	1.0-2.9	0.0-0.5	.20	.20			
	48-60	24-85	5-50	5-20	1.30-1.50	4.00-14.00	0.10-0.14	0.0-2.9	0.0-0.5	.37	.37			
21B:														
Mattaponi------------	0-10	44-85	5-49	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	0.5-2.0	.24	.24	5	5	56
	10-14	44-85	5-49	5-18	1.30-1.55	4.00-42.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
	14-35	5-80	5-39	20-65	1.40-1.65	1.50-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.28	.28			
	35-60	5-65	5-45	27-40	1.40-1.65	1.50-4.00	0.12-0.18	3.0-5.9	0.0-0.5	.28	.28			
22C:														
Pacolet--------------	0-5	44-85	5-49	8-20	1.00-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.20	.20	5	3	86
	5-38	5-65	5-45	35-65	1.30-1.50	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.28	.28			
	38-59	24-85	5-50	10-25	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
22D:														
Pacolet--------------	0-5	44-85	5-49	8-20	1.00-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.20	.20	5	3	86
	5-38	5-65	5-45	35-65	1.30-1.50	4.00-14.00	0.12-0.15	0.0-2.9	0.0-0.5	.28	.28			
	38-59	24-85	5-50	10-25	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
23B:														
Rion-----------------	0-4	52-82	5-30	5-20	1.30-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	4-18	24-82	5-50	5-27	1.30-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.24	.24			
	18-38	20-80	5-50	10-40	1.40-1.50	4.50-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.20	.24			
	38-62	24-82	5-50	5-27	1.40-1.50	4.50-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.20	.24			
23D:														
Rion-----------------	0-4	52-82	5-30	5-20	1.30-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	4-18	24-82	5-50	5-27	1.30-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.24	.24			
	18-38	20-80	5-50	10-40	1.40-1.50	4.50-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.20	.24			
	38-62	24-82	5-50	5-27	1.40-1.50	4.50-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.20	.24			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
24C:														
Rion-----------------	0-4	52-82	5-30	5-20	1.30-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	4-18	24-82	5-50	5-27	1.30-1.50	14.00-42.00	0.08-0.12	0.0-2.9	0.5-2.0	.24	.24			
	18-38	20-80	5-50	10-40	1.40-1.50	4.50-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.20	.24			
	38-62	24-82	5-50	5-27	1.40-1.50	4.50-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.20	.24			
Ashlar---------------	0-3	44-85	5-49	7-20	1.35-1.60	14.50-42.00	0.10-0.13	0.0-2.9	1.0-4.0	.24	.24	2	3	86
	3-10	44-85	5-49	7-20	1.35-1.60	14.50-42.00	0.10-0.13	0.0-2.9	0.5-1.5	.24	.24			
	10-28	32-85	5-49	7-20	1.35-1.60	14.00-42.00	0.10-0.14	0.0-2.9	0.0-0.5	.17	.24			
	28-30	---	---	---	---	0.00-14.00	---	---	---	---	---			
	30-62	---	---	---	---	0.00-14.00	---	---	---	---	---			
25A:														
Riverview------------	0-15	24-52	28-50	10-25	1.20-1.40	4.50-14.00	0.12-0.20	0.0-2.9	1.0-4.0	.28	.28	5	6	48
	15-59	24-82	5-50	5-20	1.30-1.50	14.00-42.00	0.12-0.14	0.0-2.9	0.0-1.0	.24	.24			
	59-79	24-91	0-50	5-18	1.30-1.60	4.23-42.34	0.07-0.21	0.0-2.9	0.0-0.2	.28	.32			
26B:														
Santuc---------------	0-10	52-82	5-30	10-24	1.30-1.50	14.00-42.00	0.12-0.20	0.0-2.9	0.5-3.0	.24	.24	5	2	134
	10-15	52-82	5-30	10-24	1.30-1.50	14.00-42.00	0.12-0.20	0.0-2.9	0.5-1.5	.24	.24			
	15-45	20-80	5-50	18-35	1.30-1.50	4.00-14.00	0.12-0.20	0.0-2.9	0.0-1.0	.24	.24			
	45-60	24-82	5-50	5-35	1.30-1.50	14.00-42.00	0.12-0.20	0.0-2.9	0.0-1.0	.28	.28			
27B:														
Tatum----------------	0-7	5-50	50-80	12-27	1.10-1.40	4.00-14.00	0.16-0.20	0.0-2.9	0.5-2.0	.37	.37	5	3	86
	7-22	0-45	5-65	27-60	1.40-1.60	4.00-14.00	0.10-0.19	3.0-5.9	0.0-1.0	.28	.28			
	22-50	0-45	5-65	27-60	1.40-1.60	4.00-14.00	0.10-0.19	3.0-5.9	0.0-0.5	.28	.28			
	50-60	---	---	---	---	0.01-0.42	---	---	---	---	---			
Badin----------------	0-7	5-52	28-80	7-27	1.20-1.45	4.10-14.00	0.16-0.20	0.0-2.5	0.0-0.5	.32	.37	2	5	56
	7-37	5-45	5-65	27-55	1.30-1.50	4.10-14.00	0.14-0.19	3.0-5.9	0.0-0.5	.24	.28			
	37-60	---	---	---	---	0.00-14.00	---	---	---	---	---			
27C:														
Tatum----------------	0-7	5-50	50-80	12-27	1.10-1.40	4.00-14.00	0.16-0.20	0.0-2.9	0.5-2.0	.37	.37	5	3	86
	7-22	0-45	5-65	27-60	1.40-1.60	4.00-14.00	0.10-0.19	3.0-5.9	0.0-1.0	.28	.28			
	22-50	0-45	5-65	27-60	1.40-1.60	4.00-14.00	0.10-0.19	3.0-5.9	0.0-0.5	.28	.28			
	50-60	---	---	---	---	0.01-0.42	---	---	---	---	---			
Badin----------------	0-7	5-52	28-80	7-27	1.20-1.45	4.10-14.00	0.16-0.20	0.0-2.5	0.0-0.5	.32	.37	2	5	56
	7-37	5-45	5-65	27-55	1.30-1.50	4.10-14.00	0.14-0.19	3.0-5.9	0.0-0.5	.24	.28			
	37-60	---	---	---	---	0.00-14.00	---	---	---	---	---			
28B:														
Turbeville-----------	0-8	24-52	28-50	0-20	1.35-1.55	14.00-42.00	0.08-0.15	0.0-2.9	0.5-2.0	.32	.32	5	3	86
	8-61	5-65	5-45	30-60	1.35-1.50	4.00-14.00	0.13-0.16	3.0-5.9	0.0-0.5	.24	.24			

Table 16.—Physical Soil Properties—Continued

Map symbol and soil name	Depth	Sand	Silt	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	Pct	Pct	g/cc	um/sec	In/in	Pct	Pct					
29B:														
Wedowee--------------	0-2	44-85	5-49	5-20	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	2-6	44-85	5-49	5-20	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	0.5-1.5	.24	.24			
	6-23	5-65	5-45	35-45	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
	23-34	5-65	5-45	35-45	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
	34-61	20-85	5-49	15-30	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
29C:														
Wedowee--------------	0-2	44-85	5-49	5-20	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	2-6	44-85	5-49	5-20	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	0.5-1.5	.24	.24			
	6-23	5-65	5-45	35-45	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
	23-34	5-65	5-45	35-45	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
	34-61	20-85	5-49	15-30	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
29D:														
Wedowee--------------	0-2	44-85	5-49	5-20	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	0.5-2.0	.24	.24	5	3	86
	2-6	44-85	5-49	5-20	1.25-1.60	14.00-42.00	0.10-0.18	0.0-2.9	0.5-1.5	.24	.24			
	6-23	5-65	5-45	35-45	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
	23-34	5-65	5-45	35-45	1.30-1.50	4.00-14.00	0.12-0.18	0.0-2.9	0.0-0.5	.28	.28			
	34-61	20-85	5-49	15-30	1.20-1.50	4.00-14.00	0.08-0.15	0.0-2.9	0.0-0.5	.28	.28			
30A:														
Wehadkee-------------	0-4	15-32	50-80	10-20	1.20-1.40	4.10-14.00	0.16-0.22	0.0-2.9	2.0-4.0	.37	.37	5	3	86
	4-16	15-52	28-80	7-27	1.20-1.40	4.23-14.11	0.13-0.21	0.0-2.9	0.0-0.5	.43	.43			
	16-26	15-80	5-73	20-35	1.20-1.40	4.10-14.00	0.16-0.20	0.0-2.9	0.0-0.5	.32	.32			
	26-59	15-45	15-80	18-35	1.30-1.50	4.00-14.00	0.15-0.24	0.0-2.9	0.5-2.0	.32	.32			
31B:														
Worsham--------------	0-5	5-85	5-80	10-20	1.25-1.55	14.00-42.00	0.10-0.15	0.0-2.9	1.0-4.0	.28	.28	5	3	86
	5-10	5-85	5-80	10-20	1.25-1.55	14.00-42.00	0.10-0.15	0.0-2.9	1.0-4.0	.28	.28			
	10-40	5-80	5-39	20-55	1.35-1.65	0.01-0.42	0.10-0.16	3.0-5.9	1.0-2.0	.28	.28			
	40-60	20-85	5-49	10-40	1.20-1.50	1.40-4.00	0.08-0.19	3.0-5.9	0.0-1.0	.28	.28			
DAM.														
Dam														
UdC:														
Udorthents, loamy----	0-80	---	---	10-50	1.30-1.80	0.01-14.00	0.10-0.17	3.0-5.9	0.0-1.0	.15	.15	5	5	56
W.														
Water														

Table 17.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
1C:				
Appling	0-12	1.6-6.5	1.2-4.9	4.5-6.5
	12-51	2.0-7.1	1.5-5.3	4.5-5.5
	51-61	0.5-3.6	0.4-2.7	4.5-6.5
2B:				
Appling	0-12	1.6-6.5	1.2-4.9	4.5-6.5
	12-51	2.0-7.1	1.5-5.3	4.5-5.5
	51-61	0.5-3.6	0.4-2.7	4.5-6.5
Mattaponi	0-10	2.4-9.0	1.8-6.8	4.5-5.5
	10-14	1.2-5.6	0.9-4.2	4.5-5.5
	14-35	5.0-17	3.8-13	4.5-5.5
	35-60	6.8-11	5.1-8.3	4.5-5.5
3D:				
Ashlar	0-3	4.0-14	3.0-10	4.0-6.0
	3-10	4.0-14	3.0-10	4.0-6.0
	10-28	1.8-7.2	1.3-5.4	4.0-6.0
	28-30	---	---	---
	30-62	---	---	---
Rock outcrop.				
3E:				
Ashlar	0-3	4.0-14	3.0-10	4.0-6.0
	3-10	4.0-14	3.0-10	4.0-6.0
	10-28	1.8-7.2	1.3-5.4	4.0-6.0
	28-30	---	---	---
	30-62	---	---	---
Rock outcrop.				
4C:				
Badin	0-7	4.0-14	3.0-10	3.5-6.5
	7-37	6.8-15	5.1-11	3.5-5.5
	37-60	---	---	---
Goldston	0-6	3.0-14	2.2-10	4.5-6.0
	6-18	2.5-9.9	1.9-7.4	4.5-6.0
	18-26	---	---	---
	26-39	---	---	---
5B:				
Cecil	0-10	2.8-6.5	2.1-4.9	4.5-6.5
	10-16	0.5-3.6	0.4-2.7	4.5-6.5
	16-50	3.4-7.1	2.5-5.3	4.5-5.5
	50-65	0.5-3.6	0.4-2.7	4.5-6.5
5C:				
Cecil	0-10	2.8-6.5	2.1-4.9	4.5-6.5
	10-16	0.5-3.6	0.4-2.7	4.5-6.5
	16-50	3.4-7.1	2.5-5.3	4.5-5.5
	50-65	0.5-3.6	0.4-2.7	4.5-6.5

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
6B3:				
Cecil----------------	0-10	2.8-6.5	2.1-4.9	4.5-6.5
	10-16	0.5-3.6	0.4-2.7	4.5-6.5
	16-50	3.4-7.1	2.5-5.3	4.5-5.5
	50-65	0.5-3.6	0.4-2.7	4.5-6.5
6C3:				
Cecil----------------	0-10	2.8-6.5	2.1-4.9	4.5-6.5
	10-16	0.5-3.6	0.4-2.7	4.5-6.5
	16-50	3.4-7.1	2.5-5.3	4.5-5.5
	50-65	0.5-3.6	0.4-2.7	4.5-6.5
7B:				
Cecil----------------	0-10	2.8-6.5	2.1-4.9	4.5-6.5
	10-16	0.5-3.6	0.4-2.7	4.5-6.5
	16-50	3.4-7.1	2.5-5.3	4.5-5.5
	50-65	0.5-3.6	0.4-2.7	4.5-6.5
Urban land.				
7C:				
Cecil----------------	0-10	2.8-6.5	2.1-4.9	4.5-6.5
	10-16	0.5-3.6	0.4-2.7	4.5-6.5
	16-50	3.4-7.1	2.5-5.3	4.5-5.5
	50-65	0.5-3.6	0.4-2.7	4.5-6.5
Urban land.				
8A:				
Chewacla-------------	0-8	6.2-16	4.7-12	4.5-6.0
	8-36	2.9-11	2.2-8.4	4.5-6.0
	36-55	5.0-11	3.8-8.3	5.1-6.5
	55-62	2.9-9.0	2.2-6.8	4.5-6.0
9A:				
Chewacla-------------	0-8	6.2-16	4.7-12	4.5-6.0
	8-36	2.9-11	2.2-8.4	4.5-6.0
	36-55	5.0-11	3.8-8.3	5.1-6.5
	55-62	2.9-9.0	2.2-6.8	4.5-6.0
Wehadkee-------------	0-4	5.5-11	---	4.5-7.3
	4-16	---	1.9-13	4.5-6.0
	16-26	10-18	---	4.5-7.3
	26-59	9.6-19	---	4.5-6.5
10B:				
Emporia--------------	0-8	2.9-9.0	2.2-6.8	4.5-6.0
	8-18	2.9-9.0	2.2-6.8	4.5-6.0
	18-39	4.5-9.9	3.4-7.4	4.5-6.0
	39-55	5.2-11	3.9-8.3	4.5-6.0
	55-60	1.2-11	0.9-8.3	4.5-6.0
11B:				
Enon-----------------	0-4	8.0-19	---	5.1-7.3
	4-31	20-31	---	5.6-7.3
	31-60	3.6-18	---	5.5-7.3

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
12B:				
Fluvanna-------------	0-5	3.5-14	2.6-10	4.5-5.5
	5-55	8.8-17	6.6-13	4.5-5.5
	55-99	5.0-11	3.8-8.3	4.5-5.5
Lignum---------------	0-6	3.6-11	2.7-8.1	4.5-5.5
	6-35	8.8-15	6.6-11	4.5-5.5
	35-56	5.0-11	3.8-8.3	4.5-5.5
	56-61	---	---	---
13B:				
Georgeville----------	0-4	1.2-3.8	0.9-2.9	4.5-6.0
	4-39	3.5-7.6	2.6-5.7	4.5-5.5
	39-60	1.5-5.1	1.1-3.8	4.5-5.5
13C:				
Georgeville----------	0-4	1.2-3.8	0.9-2.9	4.5-6.0
	4-39	3.5-7.6	2.6-5.7	4.5-5.5
	39-60	1.5-5.1	1.1-3.8	4.5-5.5
14C:				
Georgeville----------	0-4	1.2-3.8	0.9-2.9	4.5-6.0
	4-39	3.5-7.6	2.6-5.7	4.5-5.5
	39-60	1.5-5.1	1.1-3.8	4.5-5.5
Mattaponi------------	0-10	2.4-9.0	1.8-6.8	4.5-5.5
	10-14	1.2-5.6	0.9-4.2	4.5-5.5
	14-35	5.0-17	3.8-13	4.5-5.5
	35-60	6.8-11	5.1-8.3	4.5-5.5
15D:				
Goldston-------------	0-6	3.0-14	2.2-10	4.5-6.0
	6-18	2.5-9.9	1.9-7.4	4.5-6.0
	18-26	---	---	---
	26-39	---	---	---
Badin----------------	0-7	4.0-14	3.0-10	3.5-6.5
	7-37	6.8-15	5.1-11	3.5-5.5
	37-60	---	---	---
16B:				
Helena---------------	0-8	2.4-9.5	1.8-7.1	4.5-6.5
	8-15	2.5-9.2	1.9-6.9	3.5-5.5
	15-50	7.5-16	5.6-12	4.5-5.5
	50-61	---	1.9-9.5	3.5-5.5
16C:				
Helena---------------	0-8	2.4-9.5	1.8-7.1	4.5-6.5
	8-15	2.5-9.2	1.9-6.9	3.5-5.5
	15-50	7.5-16	5.6-12	4.5-5.5
	50-61	---	1.9-9.5	3.5-5.5
17B:				
Herndon--------------	0-8	1.6-5.0	1.2-3.7	4.5-6.5
	8-57	2.7-7.6	2.0-5.7	4.5-5.5
	57-65	1.0-3.8	0.8-2.9	3.6-5.5

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
18B:				
Iredell	0-9	5.4-14	---	5.1-7.3
	9-31	14-37	---	5.6-7.3
	31-61	7.6-18	---	6.1-7.8
18C:				
Iredell	0-9	5.4-14	---	5.1-7.3
	9-31	14-37	---	5.6-7.3
	31-61	7.6-18	---	6.1-7.8
19B:				
Lignum	0-6	3.6-11	2.7-8.1	4.5-5.5
	6-35	8.8-15	6.6-11	4.5-5.5
	35-56	5.0-11	3.8-8.3	4.5-5.5
	56-61	---	---	---
Cid	0-6	3.6-11	2.7-8.1	3.5-5.5
	6-31	6.8-16	5.1-12	3.5-5.5
	31-35	---	---	---
	35-45	---	---	---
20C3:				
Madison	0-4	3.8-7.4	1.4-6.0	5.1-6.0
	4-48	3.4-7.1	3.0-12	4.5-5.5
	48-60	---	1.0-3.0	4.5-6.0
20D3:				
Madison	0-4	3.8-7.4	1.4-6.0	5.1-6.0
	4-48	3.4-7.1	3.0-12	4.5-5.5
	48-60	---	1.0-3.0	4.5-6.0
21B:				
Mattaponi	0-10	2.4-9.0	1.8-6.8	4.5-5.5
	10-14	1.2-5.6	0.9-4.2	4.5-5.5
	14-35	5.0-17	3.8-13	4.5-5.5
	35-60	6.8-11	5.1-8.3	4.5-5.5
22C:				
Pacolet	0-5	4.0-7.0	---	4.5-6.5
	5-38	---	6.0-18	4.5-6.0
	38-59	---	4.0-10	4.5-6.0
22D:				
Pacolet	0-5	4.0-7.0	---	4.5-6.5
	5-38	---	6.0-18	4.5-6.0
	38-59	---	4.0-10	4.5-6.0
23B:				
Rion	0-4	2.4-9.5	1.8-7.1	4.5-6.5
	4-18	2.4-11	1.8-8.4	4.5-6.5
	18-38	2.5-11	1.9-8.3	4.5-6.5
	38-62	1.2-7.9	0.9-5.9	4.5-6.5
23D:				
Rion	0-4	2.4-9.5	1.8-7.1	4.5-6.5
	4-18	2.4-11	1.8-8.4	4.5-6.5
	18-38	2.5-11	1.9-8.3	4.5-6.5
	38-62	1.2-7.9	0.9-5.9	4.5-6.5

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
24C:				
Rion	0-4	2.4-9.5	1.8-7.1	4.5-6.5
	4-18	2.4-11	1.8-8.4	4.5-6.5
	18-38	2.5-11	1.9-8.3	4.5-6.5
	38-62	1.2-7.9	0.9-5.9	4.5-6.5
Ashlar	0-3	4.0-14	3.0-10	4.0-6.0
	3-10	4.0-14	3.0-10	4.0-6.0
	10-28	1.8-7.2	1.3-5.4	4.0-6.0
	28-30	---	---	---
	30-62	---	---	---
25A:				
Riverview	0-15	4.8-15	3.6-11	4.5-7.3
	15-59	1.0-5.0	---	4.5-6.5
	59-79	1.2-5.6	0.9-4.2	4.5-6.0
26B:				
Santuc	0-10	3.6-13	2.7-9.6	3.6-6.5
	10-15	3.6-9.4	2.7-7.0	3.6-6.5
	15-45	4.5-11	3.4-8.2	3.6-6.0
	45-60	1.2-11	0.9-8.2	3.6-5.5
27B:				
Tatum	0-7	---	2.1-5.3	4.5-5.5
	7-22	---	5.1-15	4.5-5.5
	22-50	---	5.3-15	4.5-5.5
	50-60	---	---	---
Badin	0-7	4.0-14	3.0-10	3.5-6.5
	7-37	6.8-15	5.1-11	3.5-5.5
	37-60	---	---	---
27C:				
Tatum	0-7	---	2.1-5.3	4.5-5.5
	7-22	---	5.1-15	4.5-5.5
	22-50	---	5.3-15	4.5-5.5
	50-60	---	---	---
Badin	0-7	4.0-14	3.0-10	3.5-6.5
	7-37	6.8-15	5.1-11	3.5-5.5
	37-60	---	---	---
28B:				
Turbeville	0-8	1.4-6.3	1.1-4.7	4.5-5.5
	8-61	3.0-7.1	2.2-5.3	4.5-5.5
29B:				
Wedowee	0-2	1.6-8.8	1.2-6.6	3.6-5.5
	2-6	1.6-8.8	1.2-6.6	3.6-5.5
	6-23	3.5-5.6	2.6-4.2	3.6-5.5
	23-34	3.5-5.6	2.6-4.2	3.6-5.5
	34-61	1.5-4.1	1.1-3.1	3.6-5.5

Table 17.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction
	Inches	meq/100 g	meq/100 g	pH
29C:				
Wedowee	0-2	1.6-8.8	1.2-6.6	3.6-5.5
	2-6	1.6-8.8	1.2-6.6	3.6-5.5
	6-23	3.5-5.6	2.6-4.2	3.6-5.5
	23-34	3.5-5.6	2.6-4.2	3.6-5.5
	34-61	1.5-4.1	1.1-3.1	3.6-5.5
29D:				
Wedowee	0-2	1.6-8.8	1.2-6.6	3.6-5.5
	2-6	1.6-8.8	1.2-6.6	3.6-5.5
	6-23	3.5-5.6	2.6-4.2	3.6-5.5
	23-34	3.5-5.6	2.6-4.2	3.6-5.5
	34-61	1.5-4.1	1.1-3.1	3.6-5.5
30A:				
Wehadkee	0-4	5.5-11	---	4.5-7.3
	4-16	10-18	---	4.5-6.0
	16-26	10-18	---	4.5-7.3
	26-59	9.6-19	---	4.5-6.5
31B:				
Worsham	0-5	4.8-9.5	3.6-7.1	4.5-5.5
	5-10	4.8-9.5	3.6-7.1	4.5-5.5
	10-40	---	5.5-19	4.5-5.5
	40-60	---	2.7-21	4.5-5.5
DAM.				
Dam				
UdC:				
Udorthents, loamy	0-80	2.5-15	1.9-11	4.5-7.8
W.				
Water				

Table 18.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	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				
1C:										
Appling	B	Medium	Jan-Dec	---	---	---	---	None	---	None
2B:										
Appling	B	Low	Jan-Dec	---	---	---	---	None	---	None
Mattaponi	C	Medium	Jan-Mar	2.5-3.3	3.3-5.0	---	---	None	---	None
			Apr-Nov	---	---	---	---	None	---	None
			Dec	2.5-3.3	3.3-5.0	---	---	None	---	None
3D:										
Ashlar	B	High	Jan-Dec	>3.3	>1.7	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
3E:										
Ashlar	B	Medium	Jan-Dec	>3.3	>1.7	---	---	None	---	None
Rock outcrop	D	Very high	Jan-Dec	---	---	---	---	None	---	None
4C:										
Badin	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Goldston	C	Low	Jan-Dec	---	---	---	---	None	---	None
5B:										
Cecil	B	Low	Jan-Dec	---	---	---	---	None	---	None
5C:										
Cecil	B	Medium	Jan-Dec	---	---	---	---	None	---	None
6B3:										
Cecil	B	Low	Jan-Dec	---	---	---	---	None	---	None
6C3:										
Cecil	B	Medium	Jan-Dec	---	---	---	---	None	---	None
7B:										
Cecil	B	Low	Jan-Dec	---	---	---	---	None	---	None
Urban land.										

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
7C:										
Cecil	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Urban land.										
8A:										
Chewacla	C	Low	Jan-Apr	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
			May-Oct	---	---	---	---	None	Very brief	Occasional
			Nov	0.5-1.5	>6.0	---	---	None	Very brief	Occasional
9A:										
Chewacla	C	Low	Jan-May	0.5-1.5	>6.0	---	---	None	Very brief	Frequent
Wehadkee	D	Low	Jan-May	0.0-1.0	>6.0	---	---	None	Very brief	Frequent
10B:										
Emporia	C	Medium	Jan-Apr	3.0-3.9	3.7-4.5	---	---	None	---	None
			May-Oct	---	---	---	---	None	---	None
			Nov-Dec	3.0-3.9	3.7-4.5	---	---	None	---	None
11B:										
Enon	D	High	Jan-Dec	---	---	---	---	None	---	None
12B:										
Fluvanna	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Lignum	C	Medium	Jan-May	1.5-2.5	2.5-4.8	---	---	None	---	None
			Jun-Nov	---	---	---	---	None	---	None
			Dec	1.5-2.5	2.5-4.8	---	---	None	---	None
13B:										
Georgeville	B	Low	Jan-Dec	---	---	---	---	None	---	None
13C:										
Georgeville	B	Medium	Jan-Dec	---	---	---	---	None	---	None
14C:										
Georgeville	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Mattaponi	C	High	Jan-Mar	2.5-3.3	3.3-5.0	---	---	None	---	None
			Apr-Nov	---	---	---	---	None	---	None
			Dec	2.5-3.3	3.3-5.0	---	---	None	---	None
15D:										
Goldston	C	Medium	Jan-Dec	---	---	---	---	None	---	None
Badin	B	Medium	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
16B:										
Helena	C	Medium	Jan-Apr	1.5-2.5	2.5-4.8	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			Dec	1.5-2.5	2.5-4.8	---	---	None	---	None
16C:										
Helena	C	High	Jan-Apr	1.5-2.5	2.5-4.8	---	---	None	---	None
			May-Nov	---	---	---	---	None	---	None
			Dec	1.5-2.5	2.5-4.8	---	---	None	---	None
17B:										
Herndon	B	Low	Jan-Dec	---	---	---	---	None	---	None
18B:										
Iredell	C/D	High	Jan-Mar	1.5-3.0	3.0-5.0	---	---	None	---	None
			Apr-Nov	---	---	---	---	None	---	None
			Dec	1.5-3.0	3.0-5.0	---	---	None	---	None
18C:										
Iredell	C/D	Very high	Jan-Mar	1.5-3.0	3.0-5.0	---	---	None	---	None
			Apr-Nov	---	---	---	---	None	---	None
			Dec	1.5-3.0	3.0-5.0	---	---	None	---	None
19B:										
Lignum	C	Very high	Jan-May	1.5-2.5	2.5-4.8	---	---	None	---	None
			Jun-Nov	---	---	---	---	None	---	None
			Dec	1.5-2.5	2.5-4.8	---	---	None	---	None
Cid	C	Low	Jan-May	1.5-2.5	2.5-4.8	---	---	None	---	None
			Jun-Nov	---	---	---	---	None	---	None
			Dec	1.5-2.5	2.5-4.8	---	---	None	---	None
20C3:										
Madison	B	Medium	Jan-Dec	---	---	---	---	None	---	None
20D3:										
Madison	B	Medium	Jan-Dec	---	---	---	---	None	---	None
21B:										
Mattaponi	C	Medium	Jan-Mar	2.5-3.3	3.3-5.0	---	---	None	---	None
			Apr-Nov	---	---	---	---	None	---	None
			Dec	2.5-3.3	3.3-5.0	---	---	None	---	None
22C:										
Pacolet	B	Medium	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
22D:										
Pacolet-------------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None
23B:										
Rion----------------------	B	Low	Jan-Dec	---	---	---	---	None	---	None
23D:										
Rion----------------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None
24C:										
Rion----------------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Ashlar--------------------	B	Low	Jan-Dec	>3.3	>1.7	---	---	None	---	None
25A:										
Riverview-----------------	B	Low	Jan	3.3-6.6	>6.0	---	---	None	Very brief	Occasional
			Feb-Apr	2.5-3.3	>6.0	---	---	None	Very brief	Occasional
			Sep-Oct	---	---	---	---	None	Very brief	Occasional
			Nov-Dec	2.5-3.3	>6.0	---	---	None	Very brief	Occasional
26B:										
Santuc--------------------	C	Medium	Jan-Mar	1.5-3.0	3.0-5.0	---	---	None	---	None
			Apr-Nov	---	---	---	---	None	---	None
			Dec	1.5-3.0	3.0-5.0	---	---	None	---	None
27B:										
Tatum---------------------	B	Low	Jan-Dec	---	---	---	---	None	---	None
Badin---------------------	B	Low	Jan-Dec	---	---	---	---	None	---	None
27C:										
Tatum---------------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None
Badin---------------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None
28B:										
Turbeville----------------	C	Low	Jan-Dec	---	---	---	---	None	---	None
29B:										
Wedowee-------------------	B	Low	Jan-Dec	---	---	---	---	None	---	None
29C:										
Wedowee-------------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None
29D:										
Wedowee-------------------	B	Medium	Jan-Dec	---	---	---	---	None	---	None

Table 18.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
30A:										
Wehadkee------------------	D	Low	Jan-May	0.1-1.0	>6.0	---	---	None	Very brief	Frequent
			Sep	---	---	---	---	None	Very brief	Frequent
			Oct-Dec	0.1-1.0	>6.0	---	---	None	Very brief	Frequent
31B:										
Worsham-------------------	D	High	Jan-May	0.0-1.0	>6.0	---	---	None	---	None
			Jun	0.5-2.0	>6.0	---	---	None	---	None
			Jul	1.0-3.0	>6.0	---	---	None	---	None
			Aug	2.0-5.0	>6.0	---	---	None	---	None
			Sep	0.5-2.0	>6.0	---	---	None	---	None
			Oct-Dec	0.0-1.0	>6.0	---	---	None	---	None
DAM.										
Dam										
UdC:										
Udorthents----------------	C	Medium	Jan-Dec	---	---	---	---	None	---	None
W.										
Water										

Table 19.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
1C:						
Appling	---	---	---	Moderate	Moderate	Moderate
2B:						
Appling	---	---	---	Moderate	Moderate	Moderate
Mattaponi	---	---	---	Moderate	High	High
3D:						
Ashlar	Paralithic bedrock	---	Moderately cemented	Moderate	Low	High
	Lithic bedrock	20-40	Indurated			
Rock outcrop	Lithic bedrock	0-0	Indurated	None	---	---
3E:						
Ashlar	Paralithic bedrock	---	Moderately cemented	Moderate	Low	High
	Lithic bedrock	20-40	Indurated			
Rock outcrop	Lithic bedrock	0-0	Indurated	None	---	---
4C:						
Badin	Paralithic bedrock	20-40	Moderately cemented	Moderate	High	High
Goldston	Paralithic bedrock	15-20	Moderately cemented	Moderate	Moderate	High
	Lithic bedrock	20-30	Very strongly cemented			
5B:						
Cecil	---	---	---	Moderate	High	High
5C:						
Cecil	---	---	---	Moderate	High	High
6B3:						
Cecil	---	---	---	Moderate	High	High
6C3:						
Cecil	---	---	---	Moderate	High	High
7B:						
Cecil	---	---	---	Moderate	High	High
Urban land.						
7C:						
Cecil	---	---	---	Moderate	High	High
Urban land.						
8A:						
Chewacla	---	---	---	Moderate	High	Moderate

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In				
9A:						
Chewacla-----------	---	---	---	Moderate	High	Moderate
Wehadkee-----------	---	---	---	High	High	Moderate
10B:						
Emporia------------	---	---	---	Moderate	Moderate	High
11B:						
Enon---------------	---	---	---	Moderate	High	Low
12B:						
Fluvanna-----------	---	---	---	Moderate	High	High
Lignum-------------	Paralithic bedrock	39-60	Moderately cemented	High	---	---
13B:						
Georgeville--------	---	---	---	Moderate	High	High
13C:						
Georgeville--------	---	---	---	Moderate	High	High
14C:						
Georgeville--------	---	---	---	Moderate	High	High
Mattaponi----------	---	---	---	Moderate	High	High
15D:						
Goldston-----------	Paralithic bedrock	15-20	Moderately cemented	Moderate	Moderate	High
	Lithic bedrock	20-30	Very strongly cemented			
Badin--------------	Paralithic bedrock	20-40	Moderately cemented	Moderate	---	---
16B:						
Helena-------------	---	---	---	High	High	High
16C:						
Helena-------------	---	---	---	High	High	High
17B:						
Herndon------------	---	---	---	Moderate	High	High
18B:						
Iredell------------	---	---	---	High	High	Low
18C:						
Iredell------------	---	---	---	High	High	Low
19B:						
Lignum-------------	Paralithic bedrock	39-60	Moderately cemented	High	---	---
Cid----------------	Paralithic bedrock	20-40	Moderately cemented	High	---	---
	Lithic bedrock	20-40	Very strongly cemented			

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In				
20C3:						
Madison	---	---	---	Moderate	High	Moderate
20D3:						
Madison	---	---	---	Moderate	High	Moderate
21B:						
Mattaponi	---	---	---	Moderate	High	High
22C:						
Pacolet	---	---	---	Moderate	High	High
22D:						
Pacolet	---	---	---	Moderate	High	High
23B:						
Rion	---	---	---	Moderate	Moderate	High
23D:						
Rion	---	---	---	Moderate	Moderate	High
24C:						
Rion	---	---	---	Moderate	Moderate	High
Ashlar	Paralithic bedrock	---	Moderately cemented	Moderate	Low	High
	Lithic bedrock	20-40	Indurated			
25A:						
Riverview	---	---	---	Moderate	Low	Moderate
26B:						
Santuc	---	---	---	Moderate	High	High
27B:						
Tatum	Paralithic bedrock	40-60	Moderately cemented	Moderate	High	High
Badin	Paralithic bedrock	20-40	Moderately cemented	Moderate	---	---
27C:						
Tatum	Paralithic bedrock	40-60	Moderately cemented	Moderate	High	High
Badin	Paralithic bedrock	20-40	Moderately cemented	Moderate	---	---
28B:						
Turbeville	---	---	---	Moderate	High	High
29B:						
Wedowee	---	---	---	Moderate	Moderate	High
29C:						
Wedowee	---	---	---	Moderate	Moderate	High
29D:						
Wedowee	---	---	---	Moderate	Moderate	High

Table 19.—Soil Features—Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Hardness		Uncoated steel	Concrete
		In				
30A:						
Wehadkee-----------	---	---	---	High	High	Moderate
31B:						
Worsham------------	---	---	---	High	High	Moderate
DAM.						
Dam						
UdC:						
Udorthents, loamy--	---	---	---	None	Moderate	High
W.						
Water						

Table 20.—Taxonomic Classification of the Soils

Soil name	Family or higher taxonomic class
Appling	Fine, kaolinitic, thermic Typic Kanhapludults
Ashlar	Coarse-loamy, mixed, semiactive, thermic Typic Dystrudepts
Badin	Fine, mixed, semiactive, thermic Typic Hapludults
Cecil	Fine, kaolinitic, thermic Typic Kanhapludults
Chewacla	Fine-loamy, mixed, active, thermic Fluvaquentic Dystrudepts
Cid	Fine, semiactive, thermic Aquic Hapludults
Emporia	Fine-loamy, siliceous, subactive, thermic Typic Hapludults
Enon	Fine, mixed, active, thermic Ultic Hapludalfs
Fluvanna	Fine, mixed, active, thermic Typic Hapludults
Georgeville	Fine, kaolinitic, thermic Typic Kanhapludults
Goldston	Loamy-skeletal, siliceous, semiactive, thermic, shallow Typic Dystrudepts
Helena	Fine, mixed, semiactive, thermic Aquic Hapludults
Herndon	Fine, kaolinitic, thermic Typic Kanhapludults
Iredell	Fine, mixed, active, thermic Oxyaquic Vertic Hapludalfs
Lignum	Fine, semiactive, thermic Aquic Hapludults
Madison	Fine, kaolinitic, thermic Typic Kanhapludults
Mattaponi	Fine, mixed, subactive, thermic Oxyaquic Hapludults
Pacolet	Fine, kaolinitic, thermic Typic Kanhapludults
Rion	Fine-loamy, mixed, semiactive, thermic Typic Hapludults
Riverview	Fine-loamy, mixed, active, thermic Fluventic Dystrudepts
Santuc	Fine-loamy, mixed, semiactive, thermic Aquic Hapludults
Tatum	Fine, mixed, semiactive, thermic Typic Hapludults
Turbeville	Fine, kaolinitic, thermic Typic Kandiudults
Udorthents	Udorthents
Wedowee	Fine, kaolinitic, thermic Typic Kanhapludults
Wehadkee	Fine-loamy, mixed, active, nonacid, thermic Fluvaquentic Endoaquepts
Worsham	Fine, mixed, active, thermic Typic Endoaquults

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