United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with Purdue
University Agricultural
Experiment Station

Soil Survey of Floyd County, Indiana

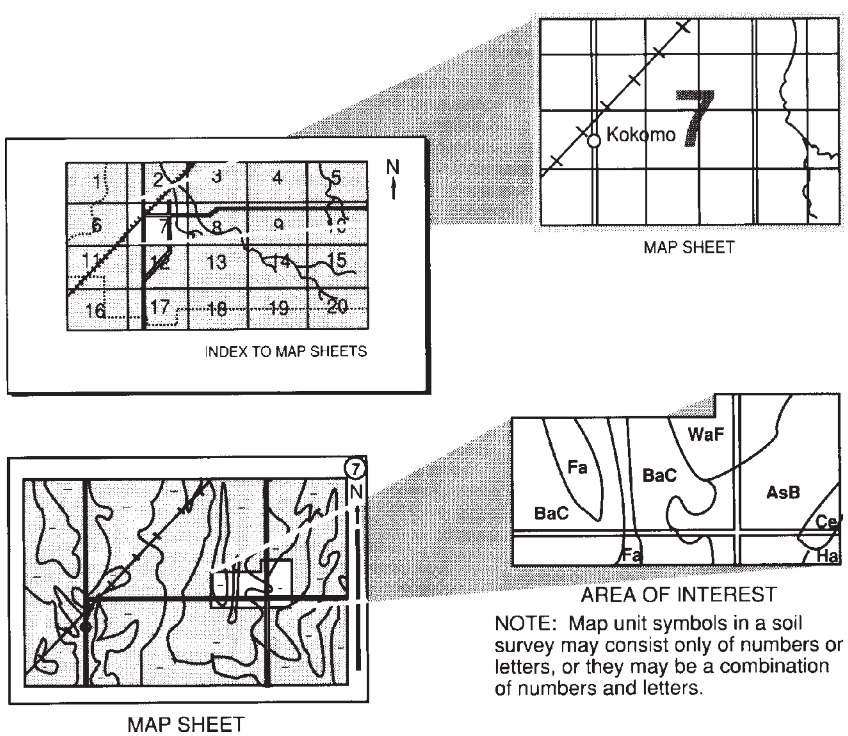
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

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

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

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



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the Purdue University Agricultural Experiment Station. It is part of the technical assistance furnished to the Floyd County Soil and Water Conservation District.

Major fieldwork for this soil survey was completed in 1999. Soil names and descriptions were approved in 2000. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2000. The most current official data are available on the Internet.

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 Photo Caption

Hayland in an area of Caneyville, Haggatt, and Navilleton soils on hills underlain by limestone.

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

Contents

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Foreword

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

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

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

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

These and many other soil properties that affect land use are described in this soil survey. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Jane Hardisty
State Conservationist
Natural Resources Conservation Service

Soil Survey of
Floyd County, Indiana

By Steven W. Neyhouse, Byron G. Nagel, and Dena L. Marshall,
Natural Resources Conservation Service

Original fieldwork by Allan K. Nickell, Dallas D. Montgomery,
Wendell C. Kirkham, Robert C. Wingard, Jr., and Daniel A. Donaldson,
Soil Conservation Service

Update fieldwork by Steven W. Neyhouse, Dena L. Marshall,
George McElrath, Jr., and Byron G. Nagel, Natural Resources
Conservation Service

United States Department of Agriculture, Natural Resources Conservation
Service, in cooperation with Purdue University Agricultural Experiment
Station

FLOYD COUNTY is in southeastern Indiana (fig. 1). It has an area of 95,764 acres, or about 149 square miles. The county is in three major land resource areas (MLRAs): the Southern Illinois and Indiana Thin Loess and Till Plain (MLRA 114); the Kentucky and Indiana Sandstone and Shale Hills and Valleys (MLRA 120); and the Highland Rim and Pennyroyal (MLRA 122) (USDA, 2006). New Albany is the county seat and the largest town in the county. It is in the extreme southeast part of the county. In 2000, the population of the county was 70,823 and the population of New Albany was 37,603 (U.S. Department of Commerce, 2000).

The land in the county is primarily used as farmland or for urban development. The primary farm enterprises are cash grain crops and the production of livestock. Corn, soybeans, and winter wheat are the main cash grain crops. Tobacco also is grown. Hogs and beef cattle are the main livestock raised, and there are a few dairy, poultry, truck crop, and goat operations in the county. About 19.5 percent of the county is cropland, 6.8 percent is pasture, and 6.0 percent is woodland. The rest is used for urban and industrial purposes.

The areas around cities and towns have been annexed, and the land use is rapidly being changed (fig. 2). Some areas lend themselves to urban development with few limitations, but other areas have so many limitations that nonfarm uses are questionable.

This soil survey updates and refines the Floyd County part of the soil survey of Clark and Floyd Counties published in 1974 (Nickell, 1974). It provides larger maps, which show the soils in greater detail. It also provides additional information about soil interpretations.

Figure 1.—Location of Floyd County in Indiana.

General Nature of the Survey Area

This section provides general information about the physical and cultural features of the county. It describes history and development; physiography, relief, and drainage; and climate.

History and Development

The earliest evidence of occupation in the survey area is in artifacts found near the “Falls of the Ohio” State Park. The artifacts date to more than 4,000 years ago. The native Indians planted corn on the rich bottom land and hunted wild game, which was abundant in the rolling, wooded uplands.

Floyd County was organized in 1819. New Albany was established as the county seat and was the first incorporated town. Georgetown, with a population of 2,227, is the next largest town, followed by Galena and Greenville.

Physiography, Relief, and Drainage

The soils in Floyd County formed in glacial till of Illinoian age; lacustrine deposits of Wisconsinan age; residuum derived from limestone, siltstone, black shale, and gray-green shale; alluvium; and loess. Till from the Illinoian glacier covers a small part of Floyd County, mainly east of the “Knobstone Escarpment” and within the Scottsburg

Lowland region. As the ice receded, a thin mantle of till was left over the bedrock. Ice from the Wisconsinan glacier did not reach the survey area, but the glacier influenced the formation of lacustrine soils near the mouth of Silver Creek and other streams in the county. This fine textured, calcareous material deposited by drift of Wisconsinan age was carried down the Ohio River in meltwaters and deposited in the stream valleys. The clays settled out and left broad plains. Recent erosion has dissected these plains, leaving them several feet above the current streambed. Most of the black shale is buried beneath till and other parent materials. Only a few areas have soils that formed in the black shale. In unglaciated areas west of the Illinoian glacial influence, soils formed in material weathered from the underlying bedrock. The sedimentary rocks consist of layers of limestone, siltstone, and shale, all of which range from a few feet to several hundred feet in thickness. These formations have a downward tilt to the west of about 20 to 25 feet per mile. Rock formations of the Lower Mississippian period are exposed. These formations consist of gray-green shale at the lower elevations. Above this and westward, interbedded olive-brown siltstone and shale are exposed. This area is the Norman Upland region. Farthest west and at the highest elevations, limestone of the Lower Mississippian period is exposed in the Mitchell plain region. These soils are typically redder than soils in other areas and have more clay. Typically, these areas have sinkholes. If there are enough sinkholes, the area is said to have karst topography. Nearly level flood plains are along the streams in all parts of the county.

The highest elevation in the county, about 1,006 feet above sea level, is in Franklin Township on Hickman Hill. The lowest is about 382 feet above sea level in an area along the Ohio River where it leaves Floyd County. The entire county is drained by the Ohio River and its tributaries. The main streams that drain into the Ohio River are

Figure 2.—Urban sprawl into an area that has historically been a farming community is an example of land use changes in the county.

Silver Creek, Indian Creek, Little Indian Creek, Georgetown Creek, Knob Creek, Falling Run, Middle Creek, and Corn Creek.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Salem 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 32.7 degrees F and the average daily minimum temperature is 23.3 degrees. The lowest temperature on record, which occurred at Salem on February 2, 1951, was -32 degrees. In summer, the average temperature is 73.9 degrees and the average daily maximum temperature is 85.6 degrees. The highest temperature, which occurred at Salem on July 14, 1954, was 105 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (40 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total precipitation is 45.29 inches. Of this total, 27 inches, or about 60 percent, usually falls in April through October. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 7.20 inches at Salem on July 20, 1988. Thunderstorms occur on about 45 days each year, and most occur between May and August.

The average seasonal snowfall is 19.7 inches. The greatest snow depth at any one time during the period of record was 20 inches recorded on February 1, 1978. On an average, 21 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 12 inches recorded on February 1, 1966.

The average relative humidity in midafternoon is about 56 percent. Humidity is higher at night, and the average at dawn is about 81 percent. The sun shines 66 percent of the time possible in summer and 43 percent in winter. The prevailing wind is from the south for most of the year and from the northwest during February and March. Average windspeed is highest, around 10 miles per hour, from January through 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 degree of erosion; the general pattern of drainage; and the kinds of crops and native plants. To study the soil profile, which is the sequence of natural layers, or horizons, soil scientists examine the soil with the aid of a soil probe or auger. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

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

Fieldwork in Floyd County consisted primarily of soil transects conducted by soil scientists. Soil transects are a systematic way of characterizing the composition of the specific soil types within a map unit. Soil borings are taken at regular intervals. Some areas, mainly on flood plains and terraces, were traversed; where needed, soil lines were adjusted from the original 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. The results of these and other observations enable the soil scientists to assign 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. Data are assembled from other sources, such as research information, production records, and field experience of specialists.

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.

Aerial photographs used for fieldwork in this survey were taken in 1992 and included stereoscopic coverage of most of the county. Adjustments to the original soil boundaries were drawn on these photographs. Soil scientists also studied U.S. Geological Survey topographic maps enlarged to a scale of 1:12,000. These enlarged topographic maps were used to help adjust the original soil boundary lines in forested areas.

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

Detailed Soil Map Units

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape. In some cases a minor component may be referred to that was not correlated in Floyd County but that has been mapped within one of the three major land resource areas (MLRAs) of which Floyd County is a part.

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

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

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, degree of erosion, frequency of flooding, 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, Pekin silt loam, 2 to 6 percent slopes, eroded, is a phase of the Pekin series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Crider-Bedford-Navilleton silt loams, 2 to 6 percent slopes, is an example.

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

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

BbhA—Bartle silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Treads

Map Unit Composition

Bartle and similar soils: 83 percent
The poorly drained Peoga and similar soils in depressions: 10 percent
The moderately well drained Pekin and similar soils on risers: 5 percent
The rarely flooded Bartle and similar soils on footslopes: 2 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the Bartle Soil

Parent material: Loess and silty alluvium
Drainage class: Somewhat poorly drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow to moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 0.5 foot (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

BcrAQ—Beanblossom silt loam, 1 to 3 percent slopes, rarely flooded

Setting

Landform: Alluvial fans and flood plains

Map Unit Composition

Beanblossom and similar soils: 90 percent
Beanblossom, occasionally flooded, and similar soils: 5 percent
The moderately well drained Wilbur and similar soils on alluvial fans and flood plains: 5 percent

Interpretive Groups

Land capability classification: 2s
Prime farmland category: Prime farmland

Properties and Qualities of the Beanblossom Soil

Parent material: Loamy-skeletal alluvium and the underlying Mississippian siltstone or shale bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate to rapid
Permeability below a depth of 40 inches: Impermeable to rapid
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 3.3 feet (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Rare (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

BcrAW—Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded, very brief duration

Setting

Landform: Alluvial fans and flood plains

Map Unit Composition

Beanblossom and similar soils: 89 percent
The moderately well drained Wilbur and similar soils: 5 percent

Deep, somewhat poorly drained, loamy soils: 3 percent
Beanblossom, frequently flooded, very brief duration, and similar soils: 3 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Beanblossom Soil

Parent material: Loamy-skeletal alluvium and the underlying Mississippian siltstone or shale bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate to rapid
Permeability below a depth of 40 inches: Impermeable to rapid
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Available water capacity: About 7.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 3.3 feet (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

BgeAZ—Birds silt loam, undrained, 0 to 1 percent slopes, frequently flooded, very brief duration

Setting

Landform: Backswamps and flood plains

Map Unit Composition

Birds and similar soils: 95 percent
The somewhat poorly drained Wakeland and similar soils on flood plains: 5 percent

Interpretive Groups

Land capability classification: 5w
Prime farmland category: Not prime farmland

Properties and Qualities of the Birds Soil

Parent material: Silty alluvium
Drainage class: Poorly drained
Permeability to a depth of 40 inches: Moderately slow or moderate
Permeability below a depth of 40 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 13.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: At the surface (January, February, March, April, May, June, July, November, December)
Frequency and most likely period of ponding: Frequent (January, February, March, April, May, June, July, December)
Frequency and most likely period of flooding: Frequent (January, February, March, April)
Hydric soil status: Hydric
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

BlvAW—Kintner loam, 1 to 3 percent slopes, occasionally flooded, very brief duration

Setting

Landform: Flood plains

Map Unit Composition

Kintner and similar soils: 95 percent
Kintner, frequently flooded, and similar soils: 5 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Kintner Soil

Parent material: Loamy-skeletal alluvium over limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate to rapid
Permeability below a depth of 40 inches: Slow to rapid
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 6.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 2.5 feet (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

BuoA—Bromer silt loam, 0 to 2 percent slopes

Setting

Landform: Depressions in areas of karst landscapes

Map Unit Composition

Bromer and similar soils: 95 percent
The moderately well drained Bedford and similar soils on summits: 5 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the Bromer Soil

Parent material: Loess and the underlying paleosol that formed in clayey residuum
Drainage class: Somewhat poorly drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 0.5 foot (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

CcaG—Caneyville-Rock outcrop complex, 25 to 60 percent slopes

Setting

Landform: Hills underlain with limestone
Position on the landform: Backslopes

Map Unit Composition

Caneyville and similar soils: 53 percent
Rock outcrop on escarpments: 15 percent
The well drained Haggatt and similar soils on backslopes: 12 percent
The well drained Crider and similar soils on shoulders and backslopes: 10 percent
The well drained, shallow Corydon and similar soils on backslopes: 5 percent
The well drained Knobcreek and similar soils on shoulders and backslopes: 5 percent

Interpretive Groups

Land capability classification: Caneyville—7e
Prime farmland category: Not prime farmland

Properties and Qualities of the Caneyville Soil

Parent material: Loess and clayey residuum over the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderately rapid
Permeability below a depth of 40 inches: Slow to moderately rapid
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 4.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

CkkB2—Cincinnati silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Summits and shoulders

Map Unit Composition

Cincinnati and similar soils: 80 percent
The moderately well drained Nabb and similar soils on summits and shoulders: 15 percent
The moderately well drained Blocher and similar soils on summits and shoulders: 5 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Cincinnati Soil

Parent material: Loess and the underlying paleosol that formed in loamy till
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow or slow
Depth to restrictive feature: 20 to 36 inches to a fragipan
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.7 feet (January, February, March, April, December)
Ponding: None
Flooding: None
Hydric soil status: Not hydric

Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

CldC2—Cincinnati-Blocher silt loams, 6 to 12 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Backslopes and shoulders

Map Unit Composition

Cincinnati and similar soils: 42 percent
Blocher and similar soils: 34 percent
Cincinnati, severely eroded, and similar soils: 10 percent
Blocher, severely eroded, and similar soils: 8 percent
The somewhat poorly drained Wakeland and similar soils in narrow drainageways: 5 percent
The well drained, strongly sloping Bonnell and similar soils on backslopes: 1 percent

Interpretive Groups

Land capability classification: Cincinnati—3e; Blocher—3e
Prime farmland category: Not prime farmland

Properties and Qualities of the Cincinnati Soil

Parent material: Loess and the underlying paleosol that formed in loamy till
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow or slow
Depth to restrictive feature: 20 to 36 inches to a fragipan
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.7 feet (January, February, March, April, December)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Blocher Soil

Parent material: Loess, loamy materials, and the underlying paleosol that formed in loamy till
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 2.0 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

ConC3—Coolville-Rarden complex, 6 to 12 percent slopes, severely eroded

Setting

Landform: Hills underlain with shale and siltstone
Position on the landform: Shoulders and backslopes

Map Unit Composition

Coolville and similar soils: 45 percent
Rarden and similar soils: 45 percent
Coolville, eroded, and similar soils: 5 percent
The moderately well drained Stonehead and similar soils on backslopes and shoulders: 5 percent

Interpretive Groups

Land capability classification: Coolville—4e; Rarden—6e
Prime farmland category: Not prime farmland

Properties and Qualities of the Coolville Soil

Parent material: Loess and clayey residuum and the underlying Mississippian shale and siltstone bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Impermeable to slow
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Available water capacity: About 6.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.0 foot (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Rarden Soil

Parent material: Loess and clayey residuum and the underlying Mississippian shale and siltstone bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Impermeable to moderately slow
Permeability below a depth of 40 inches: Impermeable or very slow
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Available water capacity: About 4.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.0 foot (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

CtwB—Crider-Bedford-Navilleton silt loams, 2 to 6 percent slopes

Setting

Landform: Hills underlain with limestone
Position on the landform: Summits and shoulders

Map Unit Composition

Crider and similar soils: 39 percent
Bedford and similar soils: 29 percent
Navilleton and similar soils: 28 percent
The well drained Knobcreek and similar soils on summits, shoulders, and backslopes: 4 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Crider Soil

Parent material: Loess, loamy materials, and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate

Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Bedford Soil

Parent material: Loess, loamy materials, and the underlying paleosol that formed in clayey residuum
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow to moderate
Depth to restrictive feature: 20 to 38 inches to a fragipan; 80 to 120 inches to lithic bedrock
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Properties and Qualities of the Navilleton Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Impermeable to moderately rapid
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

CwaAQ—Cuba silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Flood-plain steps

Map Unit Composition

Cuba and similar soils: 92 percent
The moderately well drained Steff and similar soils on flood-plain steps: 5 percent
Cuba, occasionally flooded, very brief duration, and similar soils on flood-plain steps: 3 percent

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland

Properties and Qualities of the Cuba Soil

Parent material: Acid, silty alluvium
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Frequency and most likely period of flooding: Rare (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

EepB—Elkinsville silt loam, 2 to 6 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Treads

Map Unit Composition

Elkinsville and similar soils: 85 percent
The moderately well drained Pekin and similar soils on treads and risers: 10 percent
The moderately sloping and strongly sloping Elkinsville and similar soils on risers: 5 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Elkinsville Soil

Parent material: Loess and loamy alluvium
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

EepGQ—Elkinsville silt loam, 25 to 60 percent slopes, rarely flooded

Setting

Landform: Stream terraces
Position on the landform: Risers

Map Unit Composition

Elkinsville and similar soils: 85 percent
The well drained Millstone and similar soils: 15 percent

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland

Properties and Qualities of the Elkinsville Soil

Parent material: Loess and loamy alluvium
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 4.0 percent
Shrink-swell potential: Moderate
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Frequency and most likely period of flooding: Rare (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High

Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

GgbG—Gilwood-Brownstown silt loams, 25 to 75 percent slopes

Setting

Landform: Hills and knobs underlain with siltstone
Position on the landform: Backslopes

Map Unit Composition

Gilwood and similar soils: 45 percent
Brownstown and similar soils: 35 percent
The well drained, strongly sloping Wrays and similar soils on backslopes and shoulders: 10 percent
The strongly sloping Gilwood and similar soils on backslopes and shoulders: 3 percent
Shallow, well drained, loamy soils on backslopes: 3 percent
The well drained Beanblossom and similar soils on narrow flood plains or alluvial fans: 2 percent
Rock outcrop on escarpments: 2 percent

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland

Properties and Qualities of the Gilwood Soil

Parent material: Loamy residuum and the underlying Mississippian siltstone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Impermeable to moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 5.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Brownstown Soil

Parent material: Loamy-skeletal residuum and the underlying Mississippian siltstone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Impermeable to moderately rapid
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 3.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 4.0 percent

Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

GgfE2—Gilwood-Wrays silt loams, 12 to 25 percent slopes, eroded

Setting

Landform: Hills and knobs underlain with siltstone
Position on the landform: Backslopes

Map Unit Composition

Gilwood and similar soils: 42 percent
Wrays and similar soils: 36 percent
The well drained Brownstown and similar soils on backslopes: 6 percent
The well drained Knobcreek and similar soils on backslopes: 5 percent
The well drained Beanblossom and similar soils on alluvial fans and flood plains: 4 percent
Gilwood, severely eroded, and similar soils on backslopes: 3 percent
The moderately well drained Spickert and similar soils on shoulders and backslopes: 2 percent
Wrays, severely eroded, and similar soils on shoulders and backslopes: 2 percent

Interpretive Groups

Land capability classification: Gilwood—6e; Wrays—4e
Prime farmland category: Not prime farmland

Properties and Qualities of the Gilwood Soil

Parent material: Loamy residuum and the underlying Mississippian siltstone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Impermeable to moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 5.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Wrays Soil

Parent material: Loess and silty residuum and the underlying Mississippian siltstone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderately slow or moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

GmaG—Gnawbone-Kurtz silt loams, 20 to 60 percent slopes

Setting

Landform: Hills underlain with siltstone and shale
Position on the landform: Backslopes

Map Unit Composition

Gnawbone and similar soils: 48 percent
Kurtz and similar soils: 32 percent
The moderately well drained Coolville and similar soils on shoulders and backslopes: 8 percent
The well drained Wellrock and similar soils on shoulders and backslopes: 4 percent
The well drained Beanblossom and similar soils on alluvial fans and flood plains: 3 percent
The moderately well drained Stonehead and similar soils on shoulders and backslopes: 3 percent
Well drained, very deep, loamy colluvial soils on backslopes: 2 percent

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland

Properties and Qualities of the Gnawbone Soil

Parent material: Loamy residuum and the underlying Mississippian siltstone and shale bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Impermeable to moderate
Permeability below a depth of 40 inches: Impermeable or very slow
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Available water capacity: About 6.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low

Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Kurtz Soil

Parent material: Loamy residuum and the underlying Mississippian siltstone and shale bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Impermeable to moderate
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

HcbAQ—Hatfield silty clay loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Flood-plain steps

Map Unit Composition

Hatfield and similar soils: 80 percent
The moderately well drained Sciotoville and similar soils on treads: 15 percent
The poorly drained Ginat and similar soils in depressions: 5 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the Hatfield Soil

Parent material: Loamy alluvium
Drainage class: Somewhat poorly drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow or slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 0.5 foot (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Rare (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

HcgAH—Haymond silt loam, 0 to 2 percent slopes, frequently flooded, brief duration

Setting

Landform: Flood plains and natural levees

Map Unit Composition

Haymond and similar soils: 85 percent
The well drained Wirt and similar soils on flood plains and natural levees: 10 percent
The moderately well drained Wilbur and similar soils on flood plains: 5 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season

Properties and Qualities of the Haymond Soil

Parent material: Silty over loamy alluvium
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Frequency and most likely period of flooding: Frequent (January, February, March, April)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

HcgAV—Haymond silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration

Setting

Landform: Flood plains

Map Unit Composition

Haymond and similar soils: 85 percent
The well drained Wirt and similar soils on flood plains: 10 percent
The moderately well drained Wilbur and similar soils on flood plains: 5 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season

Properties and Qualities of the Haymond Soil

Parent material: Silty over loamy alluvium
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Frequency and most likely period of flooding: Frequent (January, February, March, April)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

HcgAW—Haymond silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration

Setting

Landform: Flood plains, flood-plain steps, and natural levees

Map Unit Composition

Haymond and similar soils: 82 percent
The well drained Wirt and similar soils on flood plains and flood-plain steps: 10 percent
The moderately well drained Wilbur and similar soils on flood plains and flood-plain steps: 5 percent
Haymond, frequently flooded, very brief duration, and similar soils on flood plains: 3 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Haymond Soil

Parent material: Silty over loamy alluvium
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

HufAK—Huntington silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Setting

Landform: Flood plains and natural levees

Map Unit Composition

Huntington and similar soils: 85 percent
Huntington, frequently flooded, and similar soils on flood plains: 10 percent
The moderately well drained, occasionally flooded Lindside and similar soils on flood plains: 5 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Huntington Soil

Parent material: Fine-silty alluvium
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None

Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

KxkC2—Knobcreek-Navilleton silt loams, 6 to 12 percent slopes, eroded

Setting

Landform: Hills underlain with limestone
Position on the landform: Backslopes and shoulders

Map Unit Composition

Knobcreek and similar soils: 37 percent
Navilleton and similar soils: 35 percent
The well drained Haggatt and similar soils on shoulders and backslopes: 10 percent
The well drained Caneyville and similar soils on backslopes: 5 percent
The well drained Crider and similar soils on shoulders and backslopes: 5 percent
Moderately well drained, very deep, silty soils on shoulders and backslopes: 5 percent
The moderately well drained Bedford and similar soils on shoulders and backslopes: 3 percent

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland

Properties and Qualities of the Knobcreek Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 8.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Navilleton Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate

Permeability below a depth of 40 inches: Slow to moderately rapid
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

KxlC3—Knobcreek-Haggatt-Caneyville complex, 6 to 12 percent slopes, severely eroded

Setting

Landform: Hills underlain with limestone
Position on the landform: Backslopes and shoulders

Map Unit Composition

Knobcreek and similar soils: 33 percent
Haggatt and similar soils: 26 percent
Caneyville and similar soils: 24 percent
The well drained Navilleton and similar soils on shoulders and backslopes: 10 percent
The well drained Crider and similar soils on shoulders and backslopes: 7 percent

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland

Properties and Qualities of the Knobcreek Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.1 to 2.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Haggatt Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Slow to moderately rapid
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 5.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.1 to 2.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Caneyville Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderately rapid
Permeability below a depth of 40 inches: Slow to moderately rapid
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 3.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.1 to 2.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

KxIE3—Knobcreek-Haggatt-Caneyville complex, 12 to 25 percent slopes, severely eroded

Setting

Landform: Hills underlain with limestone
Position on the landform: Backslopes

Map Unit Composition

Knobcreek and similar soils: 35 percent
Haggatt and similar soils: 22 percent
Caneyville and similar soils: 21 percent

The well drained Navilleton and similar soils on shoulders and backslopes: 10 percent
The well drained Crider and similar soils on shoulders and backslopes: 5 percent
Well drained, very deep, loamy colluvial soils on footslopes: 5 percent
The well drained Kintner and similar soils in narrow drainageways: 2 percent

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland

Properties and Qualities of the Knobcreek Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 7.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.1 to 2.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Haggatt Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Slow to moderately rapid
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 5.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.1 to 2.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Caneyville Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderately rapid

Permeability below a depth of 40 inches: Slow to moderately rapid
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 3.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.1 to 2.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

KxmE2—Knobcreek-Haggatt-Caneyville silt loams, 12 to 25 percent slopes, eroded

Setting

Landform: Hills underlain with limestone
Position on the landform: Backslopes

Map Unit Composition

Knobcreek and similar soils: 33 percent
Haggatt and similar soils: 22 percent
Caneyville and similar soils: 20 percent
Well drained, very deep, loamy colluvial soils on footslopes: 15 percent
The well drained Crider and similar soils on shoulders: 10 percent

Interpretive Groups

Land capability classification: Knobcreek—4e; Haggatt—4e; Caneyville—6e
Prime farmland category: Not prime farmland

Properties and Qualities of the Knobcreek Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 8.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Haggatt Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Slow to moderately rapid
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 6.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Caneyville Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderately rapid
Permeability below a depth of 40 inches: Slow to moderately rapid
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 4.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

KxoC2—Knobcreek-Navilleton-Haggatt silt loams, karst, rolling, eroded

Setting

Landform: Sinkholes on hills underlain with limestone
Position on the landform: Summits, backslopes, and shoulders

Map Unit Composition

Knobcreek, karst, and similar soils: 29 percent
Navilleton, karst, and similar soils: 28 percent
Haggatt, karst, and similar soils: 27 percent
The well drained Caneyville, karst, and similar soils on shoulders and backslopes: 9 percent

The well drained Crider, karst, and similar soils on summits and shoulders: 5 percent
The well drained, depressional Haymond and similar soils on toeslopes: 2 percent

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland

Properties and Qualities of the Knobcreek, Karst, Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 8.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Navilleton, Karst, Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow to rapid
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Haggatt, Karst, Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderately slow to rapid
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 6.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High

Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

KxpD2—Knobcreek-Haggatt-Caneyville silt loams, karst, hilly, eroded

Setting

Landform: Sinkholes on hills underlain with limestone
Position on the landform: Shoulders and backslopes

Map Unit Composition

Knobcreek, karst, and similar soils: 35 percent
Haggatt, karst, and similar soils: 31 percent
Caneyville, karst, and similar soils: 30 percent
The well drained, depressional Haymond and similar soils on toeslopes: 4 percent

Interpretive Groups

Land capability classification: Knobcreek—4e; Haggatt—4e; Caneyville—6e
Prime farmland category: Not prime farmland

Properties and Qualities of the Knobcreek, Karst, Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: 60 to 120 inches to lithic bedrock
Available water capacity: About 8.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Haggatt, Karst, Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderately slow to rapid
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 6.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Caneyville, Karst, Soil

Parent material: Loess and clayey residuum and the underlying limestone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderately slow to rapid
Permeability below a depth of 40 inches: Moderately slow to rapid
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Available water capacity: About 4.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

LpoAK—Lindside silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Setting

Landform: Flood plains

Map Unit Composition

Lindside and similar soils: 82 percent
The somewhat poorly drained Newark and similar soils on flood plains: 10 percent
The well drained Huntington and similar soils on flood plains and natural levees: 8 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Lindside Soil

Parent material: Silty over loamy alluvium
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate

Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

McnGQ—Markland silt loam, 18 to 50 percent slopes, rarely flooded

Setting

Landform: Lake plains
Position on the landform: Backslopes

Map Unit Composition

Markland and similar soils: 90 percent
The strongly sloping Markland and similar soils on shoulders and backslopes: 10 percent

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland

Properties and Qualities of the Markland Soil

Parent material: Loess and clayey lacustrine deposits
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 5.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Frequency and most likely period of flooding: Rare (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

McpC3—Markland silty clay loam, 6 to 12 percent slopes, severely eroded

Setting

Landform: Lake plains
Position on the landform: Backslopes and shoulders

Map Unit Composition

Markland and similar soils: 61 percent
Markland, eroded, and similar soils on shoulders and backslopes: 18 percent
The moderately well drained Percell and similar soils on shoulders and backslopes: 11 percent
The moderately well drained Shircliff and similar soils on summits and shoulders: 5 percent
The strongly sloping, rarely flooded Markland and similar soils on backslopes: 3 percent
The moderately well drained Wilbur and similar soils on flood plains: 2 percent

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland

Properties and Qualities of the Markland Soil

Parent material: Loess and clayey lacustrine deposits
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

McuDQ—Markland silty clay loam, 12 to 25 percent slopes, severely eroded, rarely flooded

Setting

Landform: Lake plains
Position on the landform: Backslopes and shoulders

Map Unit Composition

Markland and similar soils: 70 percent

Markland, eroded, and similar soils on shoulders and backslopes: 25 percent
The moderately well drained Shircliff and similar soils on summits and shoulders: 5 percent

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland

Properties and Qualities of the Markland Soil

Parent material: Loess and clayey lacustrine deposits
Drainage class: Well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: High
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Frequency and most likely period of flooding: Rare (January, February, March, April, May, June)
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

MhuA—McGary silt loam, 0 to 2 percent slopes

Setting

Landform: Lake plains
Position on the landform: Summits

Map Unit Composition

McGary and similar soils: 90 percent
The moderately well drained Shircliff and similar soils on summits and shoulders: 7 percent
The poorly drained Zipp and similar soils in depressions: 3 percent

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the McGary Soil

Parent material: Loess and clayey lacustrine deposits
Drainage class: Somewhat poorly drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Very slow to moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 0.5 foot (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

MhyB2—Gatton silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Hills underlain with sandstone bedrock
Position on the landform: Summits

Map Unit Composition

Gatton and similar soils: 90 percent
The moderately well drained Bedford and similar soils on summits and shoulders: 10 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Gatton Soil

Parent material: Loess and unconsolidated material derived from sandstone
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow to moderate
Depth to restrictive feature: 20 to 36 inches to a fragipan
Available water capacity: About 7.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

NaaA—Nabb silt loam, 0 to 2 percent slopes

Setting

Landform: Illinoian till plains
Position on the landform: Summits

Map Unit Composition

Nabb and similar soils: 85 percent
The somewhat poorly drained Avonburg and similar soils on summits: 15 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Nabb Soil

Parent material: Loess and the underlying paleosol that formed in loamy till
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow or slow
Depth to restrictive feature: 24 to 40 inches to a fragipan
Available water capacity: About 8.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

NaaB2—Nabb silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Illinoian till plains
Position on the landform: Shoulders, summits, and backslopes

Map Unit Composition

Nabb and similar soils: 78 percent
The moderately well drained Cincinnati and similar soils on summits, shoulders, and backslopes: 10 percent
The somewhat poorly drained Avonburg and similar soils on shoulders and backslopes: 8 percent
The somewhat poorly drained Wakeland and similar soils in narrow drainageways: 4 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Nabb Soil

Parent material: Loess and the underlying paleosol that formed in loamy till
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow or slow
Depth to restrictive feature: 24 to 40 inches to a fragipan

Available water capacity: About 8.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

NbhAK—Newark silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration

Setting

Landform: Flood plains

Map Unit Composition

Newark and similar soils: 80 percent
The moderately well drained, occasionally flooded Lindside and similar soils on flood plains: 15 percent
The poorly drained, occasionally flooded Wilhite and similar soils in backswamps: 5 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the Newark Soil

Parent material: Silty over loamy alluvium
Drainage class: Somewhat poorly drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 0.5 foot (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

PcrA—Pekin silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Treads

Map Unit Composition

Pekin and similar soils: 90 percent
The somewhat poorly drained Bartle and similar soils on treads: 5 percent
The well drained Elkinsville and similar soils on treads: 5 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Pekin Soil

Parent material: Loess and silty alluvium
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow to moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

PcrB2—Pekin silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Treads

Map Unit Composition

Pekin and similar soils: 85 percent
The somewhat poorly drained Bartle and similar soils on treads: 10 percent
The well drained Elkinsville and similar soils on risers: 5 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Pekin Soil

Parent material: Loess and silty alluvium
Drainage class: Moderately well drained

Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow to moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

PhaA—Peoga silt loam, 0 to 1 percent slopes

Setting

Landform: Stream terraces or lake plains
Position on the landform: Treads or summits

Map Unit Composition

Peoga and similar soils: 83 percent
Peoga, undrained, and similar soils on treads or summits: 10 percent
Dubois and similar soils on summits: 5 percent
The somewhat poorly drained Bartle and similar soils on treads: 2 percent

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the Peoga Soil

Parent material: Loess and silty alluvium; or loess and the underlying paleosol that formed in loamy lacustrine deposits
Drainage class: Poorly drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: At the surface (January, February, March)
Frequency and most likely period of ponding: Frequent (January, February, March, April, May, December)
Flooding: None
Hydric soil status: Hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Low

Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Pml—Pits, quarry

Setting

Landform: Hills underlain with limestone

Map Unit Composition

Pits, quarry: 85 percent
Udorthents and similar soil materials: 10 percent
Water: 5 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

- This map unit consists of areas where the surface soil has been removed and limestone bedrock has been extracted for use as construction material. Most of the area is the actual pit, and some of the area consists of piles of broken rock or mixed rock and soil material.

Ppu—Pits, sand and gravel

Setting

Landform: Stream terraces

Map Unit Composition

Pits, sand and gravel: 80 percent
Udorthents, loamy, and similar soil materials: 10 percent
Water: 10 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

- This map unit consists of areas where the surface soil has been removed and sand, gravel, or both have been extracted for use as construction material. Most of the area is the actual pit, and some of the area consists of stockpiles of stripped soil material.

RctD3—Rarden-Coolville complex, 12 to 22 percent slopes, severely eroded

Setting

Landform: Hills underlain with shale or siltstone
Position on the landform: Shoulders and backslopes

Map Unit Composition

Rarden and similar soils: 40 percent

Coolville and similar soils: 19 percent
Rarden, eroded, and similar soils on shoulders and backslopes: 14 percent
The well drained Deam and similar soils on backslopes: 13 percent
Coolville, eroded, and similar soils on shoulders and backslopes: 7 percent
The moderately well drained Stonehead and similar soils on shoulders and backslopes: 7 percent

Interpretive Groups

Land capability classification: Rarden—7e; Coolville—6e
Prime farmland category: Not prime farmland

Properties and Qualities of the Rarden Soil

Parent material: Clayey residuum and the underlying Mississippian shale and siltstone bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Impermeable to moderately slow
Permeability below a depth of 40 inches: Impermeable or very slow
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Available water capacity: About 4.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.0 foot (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Coolville Soil

Parent material: Loess and clayey residuum and the underlying Mississippian shale and siltstone bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Impermeable to slow
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Available water capacity: About 6.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.0 foot (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

ScbA—Sciotoville silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Treads

Map Unit Composition

Sciotoville and similar soils: 70 percent
The well drained Elkinsville and similar soils on treads: 10 percent
The somewhat poorly drained Hatfield and similar soils on treads: 10 percent
Moderately well drained, loamy alluvial soils on flood-plain steps: 4 percent
The well drained Millstone and similar soils on treads: 4 percent
Sciotoville, rarely flooded, and similar soils on flood-plain steps: 2 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Sciotoville Soil

Parent material: Loamy alluvium
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow to moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

ScbB2—Sciotoville silt loam, 2 to 6 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Treads

Map Unit Composition

Sciotoville and similar soils: 75 percent
The well drained Elkinsville and similar soils on treads: 10 percent
The moderately sloping Sciotoville and similar soils on risers: 10 percent
The well drained Millstone and similar soils on treads: 5 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Sciotoville Soil

Parent material: Loamy alluvium
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Very slow to moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

SceB2—Scottsburg silt loam, 2 to 4 percent slopes, eroded

Setting

Landform: Strath terraces underlain with shale
Position on the landform: Treads

Map Unit Composition

Scottsburg and similar soils: 96 percent
The moderately well drained Deputy and similar soils on treads and risers: 2 percent
The well drained Trappist and similar soils on risers: 2 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Scottsburg Soil

Parent material: Loess, loamy slope alluvium, and clayey residuum and the underlying black shale bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 60 to 80 inches to lithic bedrock
Available water capacity: About 9.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)

Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

SfyB—Shircliff silt loam, 2 to 6 percent slopes

Setting

Landform: Lake plains
Position on the landform: Summits and shoulders

Map Unit Composition

Shircliff and similar soils: 75 percent
The moderately well drained Percell and similar soils on summits and shoulders: 12 percent
The somewhat poorly drained McGary and similar soils on summits: 8 percent
The well drained Markland and similar soils on shoulders and backslopes: 5 percent

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland

Properties and Qualities of the Shircliff Soil

Parent material: Loess and clayey lacustrine deposits
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Slow to moderate
Permeability below a depth of 40 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.2 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

SoaB—Spickert silt loam, 2 to 6 percent slopes

Setting

Landform: Hills underlain with siltstone
Position on the landform: Summits and shoulders

Map Unit Composition

Spickert and similar soils: 95 percent
The well drained Wrays and similar soils on summits and shoulders: 5 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Spickert Soil

Parent material: Loess and silty residuum and the underlying Mississippian siltstone bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 20 to 36 inches to a fragipan; 60 to 80 inches to lithic bedrock
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

SodB—Spickert silt loam, terrace, 1 to 4 percent slopes

Setting

Landform: Strath terraces underlain with siltstone
Position on the landform: Treads

Map Unit Composition

Spickert, terrace, and similar soils: 90 percent
The somewhat poorly drained Bartle and similar soils on treads: 10 percent

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland

Properties and Qualities of the Spickert, Terrace, Soil

Parent material: Loess and silty residuum and the underlying Mississippian siltstone bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 24 to 36 inches to a fragipan; 60 to 90 inches to lithic bedrock

Available water capacity: About 8.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

SolC2—Spickert-Wrays silt loams, 6 to 12 percent slopes, eroded

Setting

Landform: Hills and knobs underlain with siltstone
Position on the landform: Backslopes and shoulders

Map Unit Composition

Spickert and similar soils: 44 percent
Wrays and similar soils: 32 percent
The well drained Gilwood and similar soils on backslopes: 10 percent
Spickert, severely eroded, and similar soils on backslopes and shoulders: 7 percent
Wrays, severely eroded, and similar soils on backslopes and shoulders: 5 percent
The strongly sloping Wrays and similar soils on backslopes: 2 percent

Interpretive Groups

Land capability classification: Spickert—3e; Wrays—4e
Prime farmland category: Not prime farmland

Properties and Qualities of the Spickert Soil

Parent material: Loess and silty residuum and the underlying Mississippian siltstone bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 20 to 36 inches to a fragipan; 50 to 80 inches to lithic bedrock
Available water capacity: About 7.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: High

Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Wrays Soil

Parent material: Loess and silty residuum and the underlying Mississippian siltstone bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderately slow or moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

StaAQ—Steff silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Flood-plain steps

Map Unit Composition

Steff and similar soils: 86 percent
The somewhat poorly drained Stendal and similar soils on flood-plain steps: 10 percent
The well drained Cuba and similar soils on flood-plain steps: 2 percent
The moderately well drained, occasionally flooded Steff and similar soils on flood plains: 2 percent

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland

Properties and Qualities of the Steff Soil

Parent material: Acid, silty alluvium
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Moderate or moderately rapid
Permeability below a depth of 40 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 1.5 feet (January, February, March)

Ponding: None
Frequency and most likely period of flooding: Rare (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

StdAQ—Stendal silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Flood-plain steps

Map Unit Composition

Stendal and similar soils: 88 percent
The poorly drained Bonnie and similar soils in backswamps: 5 percent
The moderately well drained Steff and similar soils on flood-plain steps: 4 percent
Stendal, occasionally flooded, and similar soils on flood plains: 3 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the Stendal Soil

Parent material: Acid, silty alluvium
Drainage class: Somewhat poorly drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.7 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 0.5 foot (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Rare (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Uaa—Udorthents, cut and filled

Setting

Landform: Variable; includes hills underlain with limestone, hills underlain with siltstone and shale, stream terraces, lake plains, till plains, and flood plains

Map Unit Composition

Udorthents, cut and filled, and similar soils: 83 percent
Urban land: 8 percent
The very deep, poorly drained and somewhat poorly drained Aquents and similar soils in depressions: 5 percent
Rock outcrop on escarpments: 4 percent

General Description

- These soils generally consist of mixed loamy or clayey soil materials in areas that have been borrowed for fill materials or in areas of the fill material itself. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

UaoAK—Udifluvents, cut and filled-Urban land complex, 0 to 2 percent slopes, occasionally flooded, brief duration

Setting

Landform: Flood plains

Map Unit Composition

Udifluvents, cut and filled, and similar soils: 65 percent
Urban land: 25 percent
The well drained Huntington and similar soils on flood plains and natural levees: 5 percent
The well drained McAdoo and similar soils on flood plains: 3 percent
The moderately well drained Lindside and similar soils on flood plains: 1 percent
The somewhat poorly drained Newark and similar soils on flood plains: 1 percent

General Description

Udifluvents, cut and filled

- These soils generally consist of mixed loamy soil materials in areas that have been filled or in areas from which material has been borrowed for fill. Onsite investigation is needed to determine specific soil properties affecting selected land uses. The soils are subject to occasional flooding, most likely during January, February, March, April, May, and June.

Urban land

- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

UedA—Urban land-Aquents, clayey substratum, complex, lake plain, 0 to 3 percent slopes

Setting

Landform: Lake plains
Position on the landform: Summits

Map Unit Composition

Urban land: 60 percent
Aquents, clayey substratum, and similar soils: 25 percent

The poorly drained Montgomery and similar soils in depressions: 6 percent
The somewhat poorly drained McGary and similar soils on summits: 3 percent
The moderately well drained Percell and similar soils on summits and shoulders: 2 percent
The moderately well drained Shircliff and similar soils on summits and shoulders: 2 percent
The poorly drained Zipp and similar soils in depressions: 2 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

Urban land
- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

Aquents, clayey substratum
- These soils generally consist of clayey lacustrine materials in disturbed areas. They are somewhat poorly drained and poorly drained. A perched seasonal high water table is at a depth of about 0.5 foot to 1.5 feet. There is generally no restrictive feature within a depth of 60 inches. These soils are normally not subject to flooding or ponding. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

UndAY—Urban land-Udifluvents complex, leveed, 0 to 2 percent slopes

Setting

Landform: Flood plains

Map Unit Composition

Urban land: 65 percent
Udifluvents and similar soils: 25 percent
The well drained Huntington and similar soils on flood plains and natural levees: 5 percent
The moderately well drained Lindside and similar soils on flood plains: 3 percent
The somewhat poorly drained, rarely flooded Newark and similar soils on flood plains: 2 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

Urban land
- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

Udifluvents
- These soils generally consist of silty alluvial materials in disturbed areas. The soils are somewhat poorly drained to well drained. A seasonal high water table is at a depth of about 0.5 foot to more than 6 feet. There is generally no restrictive feature within a depth of 60 inches. These soils are not subject to ponding. They are subject

to rare flooding. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

UneC—Urban land-Udarents, clayey substratum, complex, hills, 2 to 12 percent slopes

Setting

Landform: Hills underlain with limestone
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Urban land: 45 percent
Udarents, clayey substratum, and similar soils: 30 percent
The well drained Crider and similar soils on summits and shoulders: 10 percent
The moderately well drained Bedford and similar soils on summits and shoulders: 5 percent
The well drained Navilleton and similar soils on summits, shoulders, and backslopes: 5 percent
The well drained Knobcreek and similar soils on shoulders and backslopes: 3 percent
The well drained Haggatt and similar soils on backslopes: 2 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

Urban land
- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

Udarents, clayey substratum
- These soils generally consist of clayey residual materials in disturbed areas. They have a mantle of silty or loamy materials in some places. The soils are well drained. They do not have a seasonal high water table within a depth of 6 feet. Hard bedrock is at a depth of 40 to 120 inches. The soils are not subject to ponding or flooding. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

UngB—Urban land-Udarents, fragipan substratum, complex, till plain, 0 to 12 percent slopes

Setting

Landform: Illinoian till plains
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Urban land: 45 percent
Udarents, fragipan substratum, and similar soils: 30 percent
The somewhat poorly drained Avonburg and similar soils on summits and shoulders: 5 percent
The moderately well drained Cincinnati and similar soils on summits, shoulders, and backslopes: 4 percent

The moderately well drained Nabb and similar soils on summits and shoulders: 4 percent
The moderately well drained Blocher and similar soils on shoulders and backslopes: 3 percent
The moderately well drained Jennings and similar soils on shoulders and backslopes: 3 percent
The moderately well drained Deputy and similar soils on summits and shoulders of strath terraces: 2 percent
The moderately well drained Scottsburg and similar soils on summits and shoulders of strath terraces: 2 percent
The well drained Trappist and similar soils on backslopes of strath terraces: 2 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

Urban land

- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

Udarents, fragipan substratum

- These soils generally consist of silty materials and the underlying paleosol that formed in loamy till. They are in disturbed areas. The soils are moderately well drained and somewhat poorly drained. A perched seasonal high water table is at a depth of about 0.5 foot to 1.5 feet. The soils have a fragipan at a depth of 20 to 40 inches. They are not subject to ponding or flooding. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

UnkB—Urban land-Udarents, silty substratum, complex, terrace, 0 to 6 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Treads and risers

Map Unit Composition

Urban land: 45 percent
Udarents, silty substratum, and similar soils: 30 percent
The moderately well drained Pekin and similar soils on treads and risers: 11 percent
The somewhat poorly drained Bartle and similar soils on treads: 8 percent
The somewhat poorly drained Wakeland and similar soils on flood plains: 4 percent
The well drained Beanblossom and similar soils on flood plains: 2 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

Urban land

- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

Udarents, silty substratum

- These soils generally consist of silty materials in disturbed areas. They are moderately well drained and somewhat poorly drained. A perched seasonal high water table is at a depth of about 0.5 foot to 1.5 feet. There is generally no restrictive feature within a depth of 60 inches. The soils are normally not subject to ponding or flooding. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

UnlC—Urban land-Udarents, hard bedrock substratum, complex, hills, 2 to 15 percent slopes

Setting

Landform: Hills underlain with siltstone
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Urban land: 45 percent
Udarents, hard bedrock substratum, and similar soils: 35 percent
The moderately well drained Spickert and similar soils on summits, shoulders, and backslopes: 8 percent
The well drained Wrays and similar soils on shoulders and backslopes: 5 percent
The well drained Gilwood and similar soils on shoulders and backslopes: 4 percent
The moderately well drained Spickert, terrace, and similar soils on summits on strath terraces: 3 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

Urban land

- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

Udarents, hard bedrock substratum

- These soils generally consist of silty residual materials in disturbed areas. They are moderately well drained and well drained. A seasonal high water table is at a depth of about 1.5 feet to more than 6 feet. Hard bedrock is at a depth of 20 to 60 inches. The soils are not subject to ponding or flooding. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

UnpA—Urban land-Udarents, loamy substratum, complex, terrace, 0 to 3 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Treads and risers

Map Unit Composition

Urban land: 45 percent
Udarents, loamy substratum, and similar soils: 30 percent

The well drained Elkinsville and similar soils on treads and risers: 10 percent
The well drained Millstone and similar soils on treads and risers: 8 percent
The moderately well drained Sciotoville and similar soils on treads: 4 percent
The somewhat poorly drained Hatfield and similar soils on treads: 3 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

Urban land
- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

Udarents, loamy substratum
- These soils generally consist of loamy materials in disturbed areas. They have a mantle of silty materials in some places. The soils are well drained to somewhat poorly drained. A perched seasonal high water table is at a depth of about 0.5 foot to more than 6 feet. There is generally no restrictive feature within a depth of 60 inches. The soils are normally not subject to ponding or flooding. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

UnrD—Urban land-Udarents, soft bedrock substratum, complex, hills, 6 to 20 percent slopes

Setting

Landform: Hills underlain with shale and siltstone
Position on the landform: Summits, shoulders, and backslopes

Map Unit Composition

Urban land: 50 percent
Udarents, soft bedrock substratum, and similar soils: 32 percent
The moderately well drained Rarden and similar soils on shoulders and backslopes: 8 percent
The moderately well drained Coolville and similar soils on shoulders and backslopes: 5 percent
The moderately well drained Stonehead and similar soils on summits and shoulders: 3 percent
The well drained Deam and similar soils on backslopes: 2 percent

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland

General Description

Urban land
- Urban land includes areas that are covered by paved or graveled roads, parking lots and walkways, residential and commercial buildings, and cemetery structures.

Udarents, soft bedrock substratum
- These soils generally consist of clayey residual materials in disturbed areas. They

have a mantle of silty materials in some places. The soils are moderately well drained and well drained. A seasonal high water table is at a depth of about 1.0 foot to more than 6 feet. Soft bedrock is at a depth of 20 to 75 inches. The soils are not subject to ponding or flooding. Onsite investigation is needed to determine specific soil properties affecting selected land uses.

W—Water

- This map unit consists of natural bodies of water, such as ponds and streams.

WaaAV—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration

Setting

Landform: Flood plains

Map Unit Composition

Wakeland and similar soils: 83 percent
The poorly drained Birds and similar soils in backswamps: 10 percent
The moderately well drained Wilbur and similar soils on flood plains: 7 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season

Properties and Qualities of the Wakeland Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 0.5 foot (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Frequent (January, February, March, April)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

WaaAW—Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration

Setting

Landform: Flood plains and flood-plain steps

Map Unit Composition

Wakeland and similar soils: 82 percent
The poorly drained Birds and similar soils in backswamps: 10 percent
The moderately well drained Wilbur and similar soils on flood plains and flood-plain steps: 5 percent
Wakeland, frequently flooded, and similar soils on flood plains: 3 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the Wakeland Soil

Parent material: Silty alluvium
Drainage class: Somewhat poorly drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 0.5 foot (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

WhdD2—Wellrock-Gnawbone-Spickert, soft bedrock substratum, silt loams, 6 to 18 percent slopes, eroded

Setting

Landform: Hills underlain with siltstone
Position on the landform: Shoulders and backslopes

Map Unit Composition

Wellrock and similar soils: 33 percent
Gnawbone and similar soils: 31 percent
Spickert, soft bedrock substratum, and similar soils: 25 percent
The moderately well drained Coolville and similar soils on shoulders and backslopes: 9 percent
Moderately well drained, very deep, loamy colluvial soils on footslopes: 2 percent

Interpretive Groups

Land capability classification: Wellrock—4e; Gnawbone—4e; Spickert, soft bedrock substratum—3e
Prime farmland category: Not prime farmland

Properties and Qualities of the Wellrock Soil

Parent material: Loess and loamy residuum and the underlying Mississippian siltstone and shale bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Moderately slow or moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Gnawbone Soil

Parent material: Loamy residuum and the underlying Mississippian siltstone and shale bedrock
Drainage class: Well drained
Permeability to a depth of 40 inches: Impermeable to moderate
Permeability below a depth of 40 inches: Impermeable or very slow
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Available water capacity: About 6.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Depth to seasonal high water table: More than 6.0 feet all year
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Spickert Soil

Parent material: Loess and silty residuum and the underlying Mississippian siltstone and shale bedrock
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Very slow to moderate
Permeability below a depth of 40 inches: Impermeable to moderately slow
Depth to restrictive feature: 20 to 36 inches to a fragipan; 60 to 90 inches to paralithic bedrock
Available water capacity: About 8.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Flooding: None
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: High for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

WokAV—Wilbur silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration

Setting

Landform: Flood plains

Map Unit Composition

Wilbur and similar soils: 78 percent
The well drained Haymond and similar soils on flood plains: 12 percent
The somewhat poorly drained Wakeland and similar soils on flood plains: 10 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season

Properties and Qualities of the Wilbur Soil

Parent material: Silty alluvium
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Frequent (January, February, March, April)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

WokAW—Wilbur silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration

Setting

Landform: Flood plains and flood-plain steps

Map Unit Composition

Wilbur and similar soils: 83 percent
The somewhat poorly drained Wakeland and similar soils on flood plains and flood-plain steps: 10 percent
Wilbur, frequently flooded, and similar soils on flood plains: 5 percent
The well drained Haymond and similar soils on flood plains and natural levees: 2 percent

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland

Properties and Qualities of the Wilbur Soil

Parent material: Silty alluvium
Drainage class: Moderately well drained
Permeability to a depth of 40 inches: Moderate
Permeability below a depth of 40 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 1.5 feet (January, February, March)
Ponding: None
Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Not hydric
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

WomAK—Wilhite silty clay loam, 0 to 1 percent slopes, occasionally flooded, brief duration

Setting

Landform: Backswamps and flood plains

Map Unit Composition

Wilhite and similar soils: 85 percent
The somewhat poorly drained Newark and similar soils on flood plains: 10 percent
The poorly drained Birds and similar soils in backswamps: 5 percent

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained

Properties and Qualities of the Wilhite Soil

Parent material: Clayey alluvium
Drainage class: Poorly drained
Permeability to a depth of 40 inches: Very slow to moderately slow
Permeability below a depth of 40 inches: Very slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: At the surface (January, February, March)
Frequency and most likely period of ponding: Frequent (January, February, March, April, May, December)
Frequency and most likely period of flooding: Occasional (January, February, March, April, May, June)
Hydric soil status: Hydric
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Use and Management of the Soils

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

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

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and 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

Phil Scharf, soil conservationist, Natural Resources Conservation Service, helped prepare this section.

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Natural Resources Conservation Service is explained; the estimated yields of the main crops and hay and pasture plants are listed for each soil; and prime farmland is 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.

In 1997, about 18,472 acres in Floyd County, or about 20 percent of the total acreage, was used for crops, mainly corn, soybeans, and winter wheat, according to the Floyd County Soil and Water Conservation District. About 6,488 acres was used for hay and pasture, which includes hayland in rotation with other crops.

The potential of the soils in Floyd County for increased production of food crops is low. A small percentage of the acreage that is currently used as woodland or pasture could be converted to cropland. In addition to the reserve productive capacity represented by this land, food production can also be increased considerably by extending the latest crop production technology to all of the cropland in the county. This soil survey can greatly facilitate the application of such technology.

The paragraphs that follow describe the main management concerns affecting the use of the soils in the county for crops and pasture. These concerns are water erosion, wetness, surface cloddiness, and fertility.

Water erosion is a hazard in areas where the slope is more than about 2 percent. Loss of the surface layer through erosion reduces productivity as fertilizer, pesticides, herbicides, and organic matter are removed from the surface layer. The quality of some soils, such as Crider, Knobcreek, Haggatt, and Spickert soils, is reduced as part of the more clayey subsoil is incorporated into the surface layer. Therefore, seedbed preparation becomes more difficult and seed germination is hindered. Loss of the surface layer is especially damaging to soils that have a fragipan or fragic soil properties in the subsoil or have bedrock within a depth of 60 inches. The root zone in these soils consists mainly of the part of the profile above the fragipan or bedrock. As the surface layer is lost, the thickness of the root zone and the available water capacity are reduced. Bedford, Cincinnati, Gatton, Nabb, Pekin, Sciotoville, and Spickert soils have a fragipan or fragic soil properties. Caneyville, Coolville, Gilwood, Haggatt, Rarden, Wellrock, and Wrays soils have bedrock within a depth of 60 inches.

Erosion also results in the sedimentation and pollution of ditches, lakes, and streams. Controlling erosion minimizes sedimentation and pollution and improves water quality for fish and wildlife, for municipal use, and for recreational uses.

Planting cover crops helps to control erosion in the more sloping areas. Cover crops are especially important after harvesting soybeans, corn for silage, and tobacco. Tillage methods that leave at least about 50 percent crop residue on the surface can protect most of the sloping soils from unacceptable levels of erosion during winter and early spring.

A conservation tillage system helps to hold soil losses to an acceptable level on most of the sloping soils. If row crops are grown year after year on sloping soils, soil losses generally are high unless a conservation tillage system is applied.

No-till and strip-plant cropping systems are effective in minimizing soil loss on the sloping soils used for corn or soybeans. These conservation tillage systems can be adapted to many of the soils in the county that are susceptible to erosion. When no-till and strip-till are used in areas that have a thick vegetative cover or protective amounts of crop residue, soil moisture evaporates at a slower rate and the weed population is greatly reduced. Bedford, Blocher, Caneyville, Cincinnati, Coolville, Crider, Knobcreek, Markland, Nabb, Navilleton, Rarden, Sciotoville, Scottsburg, Spickert, Wellrock, and Wrays soils are examples of sloping soils that are suitable for no-till and strip-till.

Contour farming can be used in several areas of the county. In areas where slopes are short and irregular, however, this practice is difficult to manage. Other types of conservation measures may be more suitable.

Water- and sediment-control basins are effective in reducing the rate of runoff in drainageways. They are most effective where subsurface tile can be installed as an outlet and in areas that have slopes of about 8 percent or less. Bedford, Cincinnati, Crider, Gatton, Nabb, Navilleton, Pekin, Scottsburg, Shircliff, and Spickert soils are examples of these soils.

Grassed waterways are needed to protect the channels that drain a watershed. Subsurface drains are needed in areas where wetness or seepage is a problem in the waterways.

Grade-stabilization structures are needed in many areas of the county where the outlets of drainageways have unstable overfalls that can be subject to severe gully erosion. These structures stabilize the overfall in the drainageways and minimize gully erosion.

Information about the type and design of erosion-control practices that are best suited to each kind of soil is available at the local office of the Natural Resources Conservation Service.

Wetness is a management concern affecting the cropland and pasture in the county. On most of the naturally wet, poorly drained or very poorly drained Birds, Peoga, and Wilhite soils, production of the crops commonly grown in the county is generally not practical unless a drainage system is installed. In undrained areas of the somewhat poorly drained Bartle, Bromer, Hatfield, McGary, Newark, Stendal, and Wakeland soils, wetness significantly damages crops in most years.

Various land use regulations of Federal, State, and local governments may impose special restrictions on the use of soils. An example is the protection of wetlands. Statements made in this section about wetness are intended to help the land user identify and reduce the effects of management concerns related to wetness. The landowner or user is responsible for identifying and complying with existing laws and regulations.

The design of both surface and subsurface drainage systems varies with the kind of soil. A combination of surface and subsurface drains is needed on some soils that are intensively row cropped. Subsurface drains should be more closely spaced in slowly permeable or very slowly permeable soils than in more permeable soils. Filtering material is generally needed in subsurface drains in soils that have minimum grades and a high content of silt. Examples of these soils are Birds, Newark, Peoga, Stendal, and Wakeland soils. Finding adequate outlets for subsurface drainage systems is difficult in some areas of Birds and Wilhite soils.

More information about the design of drainage systems for each kind of soil is in the Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Soil structure is an important factor affecting the germination of seeds and the infiltration of water into the soil. Soils that have good soil structure are granular and porous. Many of the soils used for row crops in the county have a surface layer of silt loam that has a moderate to low content of organic matter. In areas where little or no crop residue is left on the surface, a hard crust forms after periods of intensive rainfall. This crust reduces the infiltration rate, increases the runoff rate, and inhibits plant emergence. Regular additions of crop residue, cover crops, manure, and other organic material improve soil structure and help to minimize crusting.

Hatfield and Wilhite soils and the severely eroded Markland soils have a moderately fine textured surface layer. Cloddiness is a problem in areas of all of these soils. If the soils are tilled when too wet, the surface layer becomes very cloddy when it dries and cannot be easily worked. As a result, preparing a good seedbed is very difficult. Tilling these soils in the fall generally minimizes cloddiness in the spring.

Many of the soils in the county have a silty surface layer that is easily compacted. Tilling or grazing when the soils are wet causes surface compaction, which restricts penetration by tillage equipment and plant roots and limits plant growth.

Soil fertility is mainly affected by reaction, by the content of plant nutrients, and by the content of organic matter. Most of the soils on till plains, unglaciated hills, and lake plains in the county have low natural fertility. They typically are strongly acid or very strongly acid in areas that have not been limed. Most of the soils on flood plains along the Ohio River, Indian and Little Indian Creeks, and Silver Creek range from neutral to moderately acid. A few are naturally strongly acid or very strongly acid in areas that have not been limed.

On soils that have a pH level below about 6.4, applications of ground limestone are needed to raise the pH level sufficiently for the best utilization of plant nutrients by cultivated crops, such as corn and soybeans, and thus for optimum yields. On soils that have a pH below about 6.4, ground limestone is needed for hay and pasture plants, such as alfalfa and red clover. The supply of available phosphorus and potassium is generally below the level needed for good plant growth in most of the soils in the county that have never had applications of fertilizer. On all soils, additions of lime and fertilizer should be based on the results of soil tests, the needs of the crop, and the desired level of yields. The Cooperative Extension Service can help in determining the kinds and amounts of fertilizer and lime to be applied.

Pasture plants commonly grown in the county are mixtures of tall fescue, orchardgrass, timothy, alfalfa, and red clover. Other pasture plants are bluegrass, ladino clover, redtop, alsike clover, lespedeza, and sweetclover. Most of the soils in the county are well suited to grasses, such as tall fescue, timothy, and orchardgrass, and to legumes, such as red clover, ladino clover, alfalfa, and lespedeza. Legumes grow poorly in soils that are poorly drained or very poorly drained, such as Birds, Peoga, and Wilhite soils. The growth of most deep-rooted legumes, such as alfalfa and sweetclover, is significantly restricted in soils that have a fragipan or fragic soil properties, such as Bartle, Bedford, Cincinnati, Hatfield, Nabb, Pekin, Sciotoville, and Spickert soils.

Poorly drained and very poorly drained soils, such as Birds, Peoga, and Wilhite soils, are well suited to water-tolerant grasses. Well drained soils, such as Crider, Elkinsville, Haggatt, Haymond, Markland, Navilleton, Spickert, Wellrock, and Wrays soils, are well suited to deep-rooted legumes. The latest information on recommended grasses and legumes for each soil type can be obtained from local offices of the Cooperative Extension Service and the Natural Resources Conservation Service.

Field crops suited to the soils and climate in the county include those that are currently grown and some that are not commonly grown. Corn, soybeans, and wheat are the principal cultivated crops. Other cultivated crops grown are oats and rye. Alfalfa, red clover, timothy, bromegrass, and orchardgrass are commonly grown for hay and pasture. A very small acreage is used for tobacco.

The latest information about growing cultivated crops, hay and pasture crops, and specialty crops can be obtained from local offices of the Cooperative Extension Service and the Natural Resources Conservation Service.

Limitations Affecting Cropland and Pasture

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 5.

Cropland

The main concerns in managing cropland are controlling erosion; reducing soil wetness and ponding; minimizing surface crusting and cloddiness; operating equipment safely on steep slopes; and limiting the effects of restricted permeability and low available water capacity.

Some of the limitations and hazards shown in the table cannot be easily overcome. These include *flooding, limited rooting depth, restricted permeability, low available water capacity,* and *subsidence.*

Generally, a combination of several practices is needed to control both water erosion and wind erosion. Conservation tillage, stripcropping, contour farming, conservation cropping systems, crop residue management, diversions, grassed waterways, and field windbreaks help to minimize excessive soil loss. Soils that have deep or wide gullies are generally not suitable for use as cropland.

Wetness is a limitation in some areas used for crops, and *ponding* is a hazard. Drainage systems consist of subsurface tile drains, surface inlet tile, open drainage ditches, surface drains, or a combination of these. Measures that maintain the drainage system are needed. Generally, soils that are ponded for long or very long periods during the growing season are not suitable for crops.

Practices that minimize *surface crusting* and *cloddiness* include incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage. Surface cloddiness can be minimized by avoiding tillage when the soil is too wet.

Conserving moisture is needed where the soils have a *low or moderate available water capacity.* It primarily involves reducing the evaporation and runoff rates and increasing the water infiltration rate. Applying conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

A *low pH* or a *high pH* (soil reaction) inhibits the uptake of certain nutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of plants. In areas of soils that have a low pH, applications of lime should be based on the results of soil tests. The goal is to achieve the optimum pH level for the uptake of the major nutrients by the specific crop. Generally, the natural reaction in the surface layer of most of the soils in the area is a low pH, except for some soils on flood plains. For most soils in the area, the pH needs to be raised to an optimal level for the crop being grown. Soils with a high pH may need treatment to lower the pH so that certain elements are adequately available for crop growth.

Equipment limitations occur in areas where slopes are 15 percent or more. The operation of farm equipment may be restricted and can become hazardous. Generally, soils with an average slope of 18 percent or more are not suitable for cultivated crops. The use of equipment is limited in areas of some soils because of the slope. Rock fragments on the surface can limit the type of equipment that can be used or can damage equipment during planting operations. Equipment use is also restricted in areas in which 3 percent or more of the surface is covered with stones or boulders or in areas where the soils have a gravelly or cobbly surface layer.

Limited rooting depth and a limited amount of moisture available for plant growth are caused by root-restrictive features within a depth of 40 inches. Root-restrictive features include bedrock, a fragipan, dense till, or stratified sand and gravel.

Crops can be damaged if the soil is subject to occasional or frequent periods of *flooding* during the growing season. Winter-grown small grain crops are especially susceptible to damage. Water-tolerant species should be used in areas that are subject to flooding during the growing season.

Subsidence is the loss or settlement of the organic soil layers through oxidation of the organic soil material. Saturating the organic layers by raising the water table during periods other than the cropping season helps to minimize the oxidation of organic soil layers.

The following is an explanation of the criteria used to determine the limitations or hazards listed in the table.

Cloddiness.—The soil has 35 percent or more clay in the surface layer.

Crusting.—The content of organic matter in the surface layer is less than or equal to 2 percent, the percent passing the number 200 sieve is more than 50 percent, and the content of clay is less than or equal to 32 percent.

Equipment limitation.—The soil has an average slope range that is 15 percent or more; or the soil has stones or boulders that cover 3 percent or more of the surface; or the surface layer contains 15 percent or more rock fragments.

Flooding.—The soil is subject to occasional or frequent periods of flooding during the growing season.

High pH.—Soils that naturally have high pH or high reaction have a typical pH value of 7.4 or more in the surface layer.

Limited rooting depth.—Root-restrictive layers, including bedrock, fragipan, dense till, and stratified sand and gravel, are within a depth of 40 inches.

Low available water capacity.—The weighted average of the available water capacity is less than 0.10 inch of water per inch of soil within a depth of 60 inches.

Low pH.—Soils that naturally have low pH or low reaction have a typical pH value of 6.0 or less in the surface layer.

Moderate available water capacity.—The weighted average of the available water capacity ranges from 0.10 to 0.15 inch of water per inch of soil within a depth of 60 inches.

Ponding.—The soil is subject to occasional or frequent periods of ponding during the growing season.

Restricted permeability.—Permeability is less than 0.2 inch per hour in one or more layers within a depth of 40 inches.

Subsidence.—The soil has an organic layer within a depth of 60 inches.

Water erosion.—The soil erosion factor Kf or Kw multiplied by the slope is more than 0.8, and the average slope is 3 percent or more.

Wetness.—The soil has a water table within a depth of 1.5 feet during the growing season.

Wind erosion.—The wind erodibility group (WEG) assigned to the soil is 1 or 2 (3 for soils that are not on flood plains).

Erosion factors (e.g., Kw factor) and wind erodibility groups are described under the heading “Erosion Properties of the Soils.”

Pasture

Growing legumes, cool-season grasses, and warm-season grasses that are suited to the soils and the climate of the area helps to maintain a productive stand of pasture.

The main management concerns affecting pasture are erosion, equipment limitations, wetness and ponding, trafficability, and a low or very low available water capacity.

Some of the limitations and hazards shown in the table cannot be easily overcome. These are *depth to bedrock, low or very low available water capacity, subsidence,* and *flooding.*

Also, the majority of the soils suitable for growing legumes have a high potential for frost action. The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about legumes subject to damage from frost heave. This hazard is not listed in table 5 because it applies to the majority of the soils.

Both water erosion and wind erosion reduce the productivity of pastureland. Controlling *erosion* during seedbed preparation is a major concern. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, establishing grassed waterways, field windbreaks, farming on the contour, and using a system of conservation tillage that leaves a protective cover of crop residue on the surface can help to minimize erosion. Soils that have deep or wide gullies are generally not suitable for pasture.

Wetness is a limitation in some areas used as pasture, and *ponding* is a hazard. Overgrazing or grazing when the soil is wet reduces the extent of plant cover and results in surface compaction and thus increases the susceptibility to erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition. Drainage systems consist of subsurface tile drains, surface inlet tile, open drainage ditches, surface drains, or a combination of these. Measures that maintain the drainage system are needed. Generally, soils that are ponded for long or very long periods during the growing season are not suitable for pasture.

Subsidence is the loss or settlement of the organic soil layers through oxidation of the organic soil material. Saturating the organic layers by raising the water table during periods other than the cropping season helps to minimize the oxidation of organic soil layers.

Trafficability refers to the ability of the soil to support both livestock and machinery. It is a concern in areas of soils that are subject to wetness and have a loamy, clayey, or organic surface layer. The proper location of livestock facilities (watering, feeding, and shelter) helps to minimize surface compaction or the formation of ruts and helps to prevent the damage of pasture crops.

Equipment limitations occur in areas where slopes are 15 percent or more. The operation of farm equipment may be restricted and can become hazardous. The use of equipment is restricted in some areas because of the slope. Generally, soils that have an average slope of 25 percent or more are not suitable for use as pastureland. The use of equipment is also a concern in areas of soils that have rock fragments on the surface or in the surface layer. The type of equipment that can be used is restricted in these areas, and the equipment may be damaged during reseeding and planting operations.

Limited rooting depth and a limited amount of moisture available for plant growth are caused by root-restrictive features within a depth of 40 inches. Root-restrictive features include bedrock, a fragipan, dense till, or stratified sand and gravel. *Available water capacity* refers to the capacity of soils to hold water available for use by most plants. The quality and quantity of the pasture may be reduced in areas where the soils have a low or very low available water capacity. The soil moisture may be inadequate for the maintenance of a healthy community of desired pasture species and, thus, the desired number of livestock. A poor quality pasture may increase the hazard of erosion and increase the runoff of pollutants. Planting drought-resistant species of grasses and legumes helps to establish a vegetative cover. Irrigation may be needed.

A *low pH* or a *high pH* (soil reaction) inhibits the uptake of certain nutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of plants. For a low pH, applications of lime should be based on the results of soil tests. The goal is to achieve the optimum pH level for the uptake of the major nutrients by the specific grass, legume, or combination of grasses and legumes.

The following is an explanation of the criteria used to determine the limitations or hazards listed in the table.

Equipment limitation.—The soil has an average slope range that is 15 percent or more; or the soil has stones or boulders that cover 3 percent or more of the surface; or the surface layer contains 15 percent or more rock fragments.

Flooding.—The soil is subject to occasional or frequent periods of flooding during the growing season.

High pH.—Soils that naturally have high pH or high reaction have a typical pH value of 7.4 or more in the surface layer.

Limited rooting depth.—Root-restrictive layers, including bedrock, fragipan, dense till, and stratified sand and gravel, are within a depth of 40 inches.

Low or very low available water capacity.—The weighted average of the available water capacity is less than 0.10 inch of water per inch of soil within a depth of 60 inches.

Low pH.—Soils that naturally have low pH or low reaction have a typical pH value of 6.0 or less in the surface layer.

Ponding.—The soil is subject to occasional or frequent periods of ponding during the growing season.

Subsidence.—The soil has an organic layer within a depth of 60 inches.

Trafficability.—The soil is somewhat poorly drained, poorly drained, or very poorly drained and has a loamy, clayey, or organic surface layer.

Water erosion.—The soil erosion factor Kf or Kw multiplied by the slope is more than 0.8, and the average slope is 3 percent or more.

Wetness.—The soil is poorly drained or very poorly drained.

Wind erosion.—The wind erodibility group (WEG) assigned to the soil is 1 or 2 (3 for soils that are not on flood plains).

Erosion factors (e.g., Kf factor) and wind erodibility groups are described under the heading "Erosion Properties of the Soils."

Crop Yield Estimates

The average yields per acre that can be expected for the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table. These differences are the result of variations in rainfall and other climatic factors; varieties grown; environmental factors, such as plant diseases and insect infestations; and type of fertility program. The land capability classification of each map unit also is shown in the table.

The estimated yields in the table were calculated based on a specific value for corn yields, and the yields for the other crops listed are calculated as a percentage relative to the corn yield.

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; 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.

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 and implemented. The relative productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the 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 the Cooperative Extension Service can provide additional information about the management and productivity of the soils for those crops.

Pasture and Hayland Interpretations

Under good management, proper grazing is essential for the production of high quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), or 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 grass-legume hay and pasture yields in table 6 were calculated as a percentage relative to a specific value for corn yields. Yields for hay and pasture crops vary widely based on the type and combination of grass and legume crops grown.

The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about forage yields other than those shown in table 6.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for pasture, for forestland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961). Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, forestland, or wildlife habitat.

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

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

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

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

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

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It 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 qualities, 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. It 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 parts of the survey area 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.

About 24,759 acres, or nearly 26 percent of the survey area, meets the criteria for prime farmland. Areas of this land are throughout the county.

The map units in the survey area that are considered prime farmland are listed in table 7. This list does not constitute a recommendation for a particular land use. On some soils included in the list, 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. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading “Detailed Soil Map Units.”

Hydric Soils

In this section, hydric soils are defined and described and the hydric soils in the survey area are listed.

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for 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 Vasilas, 2006).

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

The following map units meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

BgeAZ—Birds silt loam, undrained, 0 to 1 percent slopes, frequently flooded, very brief duration
PhaA—Peoga silt loam, 0 to 1 percent slopes
WomAK—Wilhite silty clay loam, 0 to 1 percent slopes, occasionally flooded, brief duration

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The following map units, in general, do not meet the definition of hydric soils because they do not have one of the hydric soil indicators; however, areas of hydric soils may be included in some delineations. The components with hydric characteristics and their average percentage of the map unit are included in parentheses. Onsite investigation is recommended to determine whether hydric soils occur and the location of the included hydric soils. In some cases a minor component may be referred to that was not correlated in Floyd County but that has been mapped within one of the three major land resource areas (MLRAs) of which Floyd County is a part.

BbhA—Bartle silt loam, 0 to 2 percent slopes (Peoga, 5 percent)
HcbAQ—Hatfield silty clay loam, 0 to 2 percent slopes, rarely flooded (Ginat, 5 percent)
MhuA—McGary silt loam, 0 to 2 percent slopes (Zipp, 3 percent)
NbhAK—Newark silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration (Wilhite, 5 percent)
StdAQ—Stendal silt loam, 0 to 2 percent slopes, rarely flooded (Bonnie, 5 percent)
UedA—Urban land-Aquents, clayey substratum, complex, lake plain, 0 to 3 percent slopes (Montgomery, 6 percent; Zipp, 2 percent)
WaaAV—Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration (Birds, 10 percent)
WaaAW—Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration (Birds, 10 percent)

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 8 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens.

Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a commercial nursery.

Forestland

Hardwood forest once covered most of the land in Floyd County, but many of the trees have been removed from most of the land suitable for cultivation. Much of the remaining forest cover is in steep or very steep areas in the uplands.

Upland oaks are dominant on the well drained sites. Crider and Knobcreek soils, for example, are well suited to upland oaks and associated species. White oak, red oak, black oak, chinkapin oak, hickory, sugar maple, and tulip poplar are the dominant species. Tulip poplar generally grows on the lower parts of steep slopes, on cool aspects (north and northeast slopes), and in coves. Beanblossom and Wrays soils, for example, are well suited to tulip poplar and associated species. Associated species include red oak, basswood, white oak, hickory, beech, black walnut, and sugar maple. Tulip poplar is the preferred species for planting.

Pin oak grows well on poorly drained soils on uplands, terraces, and flood plains. Peoga soils, for example, are well suited to pin oak and associated species. Associated species include soft maple, sweetgum, swamp white oak, and elm.

Sweetgum is a major forest type on poorly drained soils on uplands and terraces and on poorly drained and somewhat poorly drained soils on flood plains. Wakeland soils, for example, are well suited to sweetgum and associated species. Associated species include soft maple, red river birch, hickory, and sycamore. Sweetgum is a minor component of several timber types.

Site characteristics that affect tree growth include aspect, or the direction the slope is facing, and position on the slope. These site characteristics influence the amount of available sunlight, air drainage, soil temperature, soil moisture, and relative humidity. North- and east-facing slopes and low positions on the slope are generally the best upland sites for tree growth because they are cooler and have better moisture conditions than south- and west-facing slopes.

Soil properties are fundamentally important for woodland production. Twenty-five percent or more of the mass of a tree is in the soil, which serves as a reservoir for moisture, provides an anchor for roots, and supplies essential plant nutrients. Soil properties that affect the growth of trees include reaction, fertility, wetness, texture, structure, slope, and depth. Trees grow best on soils whose properties are not in the extreme range and that have an effective rooting depth of more than 40 inches.

Soil wetness is the result of a high water table at or above the surface. Soil wetness, flooding, and ponding are properties that greatly influence the species of trees that will grow on a specific site. For example, poorly drained soils or soils that are subject to frequent, long periods of flooding are best suited to species that tolerate wetness, such as pin oak and sweetgum. Well drained soils and soils that are not subject to frequent periods of flooding are best suited to species that cannot tolerate wetness, such as black walnut and white oak.

Wetness causes seedling mortality, limits the use of equipment, and increases the windthrow hazard by restricting the rooting depth of some trees. Ruts form easily if wheeled skidders are used when the soils are wet. Deep ruts restrict lateral drainage and damage tree roots and soil structure. Flooding is a particular hazard if it occurs frequently or if it lasts more than 7 days. Equipment should be used only during dry periods.

The slope can limit the use of forestry equipment. A slope of 15 percent or more limits the use of some types of equipment in logging and yarding areas and on skid trails and unsurfaced logging roads. The limitation is even more severe in areas that have slopes of more than 25 percent. Erosion is a hazard in areas where the soils are disturbed and the natural ground cover has been removed or diminished. Applying such management practices as water bars or dips can help to control erosion. Also, the design of logging roads and skid trails can help to overcome the steepness and length of slopes and can help to prevent the concentration of water. Operating forestry equipment on the contour where possible helps to control erosion, but in some areas the slope may be a safety concern. On the steeper slopes, logs should be moved uphill to skid trails and yarding areas.

Forestland productivity can be influenced by management activities. These practices include thinning young stands, harvesting mature trees, reducing the potential for fire, and eliminating the use of woodland for grazing. Some of the forestland in the county is used for grazing. Grazing destroys the leaf layer that protects the soil from erosion, can cause soil compaction, and destroys or damages seedlings. Forestland sites that are not used for grazing and where forest management activities are implemented have the highest potential for production.

Much of the existing commercial forestland in Floyd County could be improved by thinning out mature trees and undesirable species (timber stand improvement). The Natural Resources Conservation Service, the State Division of Forestry, consulting foresters, or the Cooperative Extension Service can help to determine specific woodland management needs, including assistance in establishing, improving, and preserving forestland.

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 9, 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 plant 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 tables 10a, 10b, 10c, and 10d, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

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

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

Rating class terms for 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 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 *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 tables 11a and 11b, the soils of the survey area are rated according to limitations that affect their suitability for recreational development. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in these tables can be supplemented by other information in this survey, for example, interpretations for dwellings without basements, for local roads and streets, and for septic tank absorption fields.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

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

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

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

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

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

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 12, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, rye, oats, sunflowers, and sorghum.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are big bluestem, little bluestem, Indiangrass, sideoats grama, and switchgrass.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, willow, apple, hawthorn, hazelnut, dogwood, hickory, black walnut, blackberry, elderberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are hawthorn, American plum, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine and eastern redcedar.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, mourning dove, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, and deer.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

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, and construction materials. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

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

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

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; 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. Tables 13a and 13b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

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

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

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

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

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

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

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

Sanitary Facilities

Tables 14a and 14b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

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

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

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

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

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

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

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

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

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

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

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

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

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

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

Construction Materials

Tables 15a and 15b 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 15a, 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 15b, 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 reclamation material, roadfill, and topsoil. The lower the number, the greater the limitation.

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

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

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

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

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

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

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

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

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

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

Engineering Index Properties

Table 16 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 (fig. 3). “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

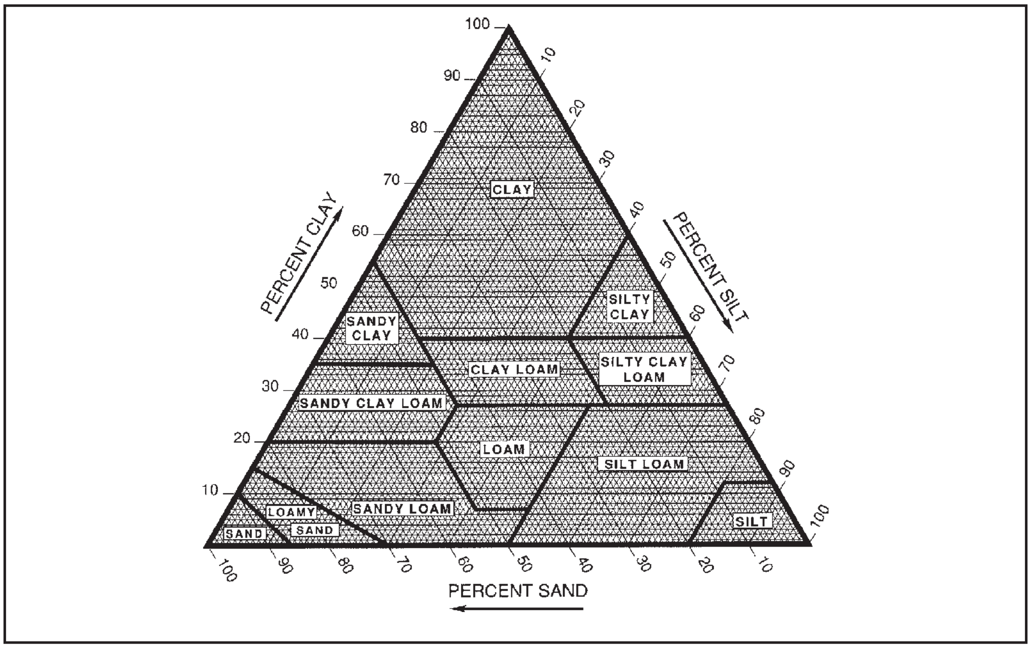

Figure 3.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

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 Properties of the Soils

Table 17 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, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^{1}/_{3}$- or $^{1}/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute 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.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term “permeability,” as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

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

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^{1}/_{3}$- or $^{1}/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In 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 Properties of the Soils

Erosion factors are shown in table 18 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

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

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the “National Soil Survey Handbook” (USDA/NRCS, National Soil Survey Handbook).

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.

Slope length is the horizontal distance, in feet, from the origin of overland flow to the point where either the slope gradient decreases enough that deposition begins or runoff becomes concentrated in a defined channel (USDA/NRCS, National Soil Survey Handbook).

Slope gradient is the difference in elevation between two points and is expressed as a percentage of the distance between the two points. For example, a difference in elevation of 1 meter over a horizontal distance of 100 meters is a slope of 1 percent.

Chemical Properties of the Soils

Table 19 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

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

Cation-exchange capacity is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of extractable bases plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

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

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 20 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

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

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

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

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Surface runoff refers to the loss of water from an area by flow over the land surface. Surface runoff classes are based on slope, climate, and vegetative cover. It is assumed that the surface of the soil is bare and that the retention of surface water resulting from irregularities in the ground surface is minimal. The classes are negligible, very low, low, medium, high, and very high.

The *months* in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. The table indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. The table indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, 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 21 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness of the restrictive layer, which significantly affects the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

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

Soil slippage potential is the susceptibility of a soil mass to movement downslope when loaded, excavated, or wet. Soil slippage is caused by several natural factors, and the potential is greatly increased by human activity. Type of bedrock and depth to bedrock, slope gradient, position on the landform, clay mineralogy, and the shrink-swell potential are the most important natural factors. Shallow soils that formed in shale, have clay mineralogy, have a high shrink-swell potential, are on steep slopes, and are on footslopes or backslopes are the most susceptible to soil slippage.

Soils that have a medium or high slippage potential are even more susceptible to slippage where certain types of human activity have taken place. Factors that increase the potential for soil slippage include making cuts in hillsides during construction of roadbeds and houses; changing surface runoff patterns and allowing water to concentrate from leaking water and sewer lines; increasing weight on slopes by building structures or placing fill for building sites; changing the course of streams, thereby increasing the flow of water, or removing rock from the streambed, causing the base of slopes to be undercut; and removing vegetation.

Soil slippage causes damage to roads and structures and can endanger human life. Areas that have slipped are susceptible to additional slippage and are generally too unstable for most construction uses.

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 2003). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is 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 Aqualf (*Aqu*, meaning water, 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 Fragiaqualfs (*Fragi*, referring to the presence of a fragipan, plus *aqualf*, the suborder of the Alfisols that has an aquic 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. An example is Aeric Fragiaqualfs.

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-silty, mixed, active, mesic Aeric Fragiaqualfs.

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.

Table 22 indicates the order, suborder, great group, subgroup, and family of the soil series in the survey area.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (Soil Survey Division Staff, 1993) and in the “Field Book for Describing and Sampling Soils” (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy” (Soil Survey Staff, 1999) and in “Keys to Soil Taxonomy” (Soil Survey Staff, 2003). 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.

Bartle Series

Taxonomic classification: Fine-silty, mixed, active, mesic Aeric Fragiaqualfs
Taxadjunct features: The Bartle soils in this survey area do not have a subhorizon with a fragipan that has vertical streaks with a mean horizontal dimension of 4 inches or more. This difference, however, does not alter the usefulness or behavior of the soils. These soils are classified as fine-silty, mixed, active, mesic Aeric Fragic Epiaqualfs.

Typical Pedon

Bartle silt loam, in a nearly level area in a cultivated field; 625 feet north and 800 feet east of the southwest corner of sec. 19, T. 2 S., R. 5 E., Floyd County, Indiana; USGS Crandall, Indiana, topographic quadrangle; lat. 38 degrees 19 minutes 05 seconds N. and long. 86 degrees 00 minutes 33 seconds W., NAD 27 (UTM Zone 16, 586618 easting and 4241575 northing, NAD 83):

Ap—0 to 8 inches; yellowish brown (10YR 5/4) silt loam, very pale brown (10YR 7/3) dry; moderate fine and medium granular structure; friable; common very fine and fine roots; neutral; abrupt smooth boundary.
EB—8 to 14 inches; pale brown (10YR 6/3) silt loam; weak fine subangular blocky structure; friable; few very fine roots; common fine and medium rounded black (10YR 2/1) iron and manganese concretions throughout; common fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; abrupt smooth boundary.
BEg—14 to 17 inches; light gray (10YR 7/2) silt loam; weak fine subangular blocky structure; friable; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium rounded black (10YR 2/1) iron and manganese concretions throughout; strongly acid; clear smooth boundary.
Bt—17 to 30 inches; brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; friable; many distinct light brownish gray (10YR 6/2) and common distinct brown (10YR 5/3) clay films on faces of peds and in pores; common fine and medium rounded black (10YR 2/1) iron and manganese concretions throughout; many medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; extremely acid; clear wavy boundary.
Btx—30 to 50 inches; brown (10YR 5/3) silt loam; weak medium prismatic structure parting to weak medium subangular blocky; firm; many distinct light brownish gray (10YR 6/2) clay films on vertical faces of peds; common medium faint light yellowish brown (10YR 6/4) and common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common fine and medium rounded black (10YR 2/1) iron and manganese concretions throughout; many medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; 45 percent brittle; very strongly acid; clear wavy boundary.
BC1—50 to 66 inches; pale brown (10YR 6/3) silt loam; weak medium and coarse subangular blocky structure; firm; common prominent very dark gray (N 3/) iron

and manganese stains in root channels; many medium faint light gray (10YR 7/2) iron depletions in the matrix; very strongly acid; clear wavy boundary.

BC2—66 to 80 inches; brownish yellow (10YR 6/8) silt loam; weak coarse subangular blocky structure; firm; common prominent very dark gray (N 3/) iron and manganese stains in root channels; many medium prominent light gray (10YR 7/2) iron depletions in the matrix; 5 percent gravel; very strongly acid.

Range in Characteristics

Thickness of the loess: 0 to 40 inches
Depth to a layer with fragic soil properties: 24 to 40 inches
Depth to the base of the argillic horizon: 48 to 72 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon:
Thickness—2 to 4 inches
Hue—10YR
Value—3 or 4
Chroma—1
Texture—silt loam
Reaction—very strongly acid to neutral

EB, BE, or BEg horizon:
Hue—10YR
Value—5 to 7
Chroma—2 to 6
Texture—silt loam
Reaction—extremely acid to moderately acid

Bt or Btg horizon:
Hue—10YR
Value—5 to 7
Chroma—2 to 6; where the chroma is 3 or more, 50 percent or more of the faces of peds have chroma of 1 or 2
Texture—silt loam or silty clay loam
Reaction—extremely acid to moderately acid

Btx or Btgx horizon:
Hue—10YR
Value—5 or 6
Chroma—1 to 6
Texture—silt loam or silty clay loam
Reaction—extremely acid to strongly acid

BC or BCg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 8
Texture—silt loam, silty clay loam, or loam
Reaction—very strongly acid to neutral
Content of rock fragments—0 to 14 percent gravel

Beanblossom Series

Taxonomic classification: Loamy-skeletal, mixed, active, mesic Fluventic Dystrudepts

Typical Pedon

Beanblossom silt loam, on a slope of 1 percent in an idle field; 460 feet south and 430 feet west of the northeast corner of sec. 22, T. 7 N., R. 2 E., Jackson County, Indiana; USGS Elkinsville, Indiana, topographic quadrangle; lat. 39 degrees 01 minute 59 seconds N. and long. 86 degrees 16 minutes 57 seconds W., NAD 27 (UTM Zone 16, 562105 easting and 4320690 northing, NAD 83):

Ap—0 to 5 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many fine roots; about 10 percent gravel (mixed lithology but mainly siltstone); strongly acid; clear smooth boundary.

Bw—5 to 24 inches; dark yellowish brown (10YR 4/4) silt loam; weak coarse subangular blocky structure; friable; common very fine and fine roots; about 5 percent gravel (mixed lithology but mainly siltstone); moderately acid; clear wavy boundary.

2C1—24 to 48 inches; brown (10YR 5/3) extremely channery silt loam; massive; very friable; few fine roots; about 70 percent siltstone channers; moderately acid; clear wavy boundary.

2C2—48 to 54 inches; yellowish brown (10YR 5/4) very channery silt loam; massive; very friable; about 45 percent siltstone channers; moderately acid; abrupt smooth boundary.

3Cr—54 to 60 inches; moderately cemented siltstone bedrock.

Range in Characteristics

Depth to the base of the cambic horizon: 20 to 34 inches
Depth to bedrock (paralithic contact): 40 to 60 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—strongly acid to neutral
Content of rock fragments—0 to 14 percent gravel and channers

A horizon:
Thickness—less than 6 inches
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam
Reaction—strongly acid to neutral
Content of rock fragments—0 to 14 percent gravel and channers

Bw or 2Bw horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—commonly silt loam or loam; less commonly the channery, very channery, gravelly, or very gravelly analogs of silt loam or loam
Reaction—strongly acid to neutral
Content of rock fragments—5 to 50 percent channers

2C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—the very channery or extremely channery analogs of silt loam or loam
Reaction—moderately acid or slightly acid
Content of rock fragments—35 to 80 percent channers

3Cr horizon:
Kind of bedrock—weakly or moderately cemented siltstone or shale

Bedford Series

Taxonomic classification: Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

Typical Pedon

Bedford silt loam, on a slope of 4 percent in a cultivated field; 1,180 feet west and 100 feet south of the northeast corner of sec. 15, T. 3 N., R. 2 E., Washington County, Indiana; USGS Campbellsburg, Indiana, topographic quadrangle; lat. 38 degrees 42 minutes 07 seconds N. and long. 86 degrees 16 minutes 34 seconds W., NAD 27 (UTM Zone 16, 562947 easting and 4283956 northing, NAD 83):

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; strongly acid; abrupt smooth boundary.

Bt1—9 to 14 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; many fine roots; many fine pores; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—14 to 20 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; many fine roots; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—20 to 24 inches; yellowish brown (10YR 5/6) silty clay loam; common medium distinct pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; firm; common fine roots; common fine pores; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; strongly acid; clear smooth boundary.

Btx1—24 to 37 inches; yellowish brown (10YR 5/6) silty clay loam; moderate very coarse prismatic structure; very firm; few fine roots on faces of peds; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; many medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; brittle; extremely acid; clear wavy boundary.

2Btx2—37 to 51 inches; yellowish brown (10YR 5/4) silt loam; moderate very coarse prismatic structure; firm; many distinct yellowish brown (10YR 5/6) clay films on faces of peds; many medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 4 percent chert gravel; brittle; extremely acid; clear wavy boundary.

3Btb1—51 to 67 inches; 60 percent yellowish red (5YR 5/6) and 25 percent strong brown (7.5YR 5/6) silty clay; strong coarse angular blocky structure; very firm; many prominent reddish brown (5YR 4/4) clay films on faces of peds; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 9 percent chert gravel; strongly acid; gradual wavy boundary.

3Btb2—67 to 80 inches; 60 percent yellowish red (5YR 5/6) and 25 percent strong brown (7.5YR 5/6) clay; strong coarse angular blocky structure; very firm; many prominent reddish brown (5YR 4/4) clay films on faces of peds; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent chert gravel; strongly acid.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Depth to a fragipan: 20 to 38 inches
Depth to the base of the argillic horizon: More than 80 inches
Depth to bedrock (lithic contact): 80 to more than 100 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid or strongly acid; ranges to neutral in limed areas

E horizon (if it occurs):
Hue—10YR
Value—6
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid or strongly acid

Bt horizon and BE horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or silty clay loam
Reaction—extremely acid or very strongly acid; ranges to moderately acid in the upper part in limed areas

Btx or 2Btx horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—commonly silt loam or silty clay loam; less commonly the gravelly analogs of these textures
Reaction—extremely acid to strongly acid
Content of rock fragments—1 to 30 percent chert gravel and cobbles

3Btb horizon:
Hue—typically multicolored (2.5YR or 5YR); less commonly 7.5YR
Value—3 to 6
Chroma—4 to 6
Texture—commonly silty clay or clay; less commonly the gravelly analogs of these textures
Reaction—extremely acid to strongly acid in the upper part and very strongly acid or strongly acid in the lower part
Content of rock fragments—2 to 30 percent chert gravel and cobbles

Birds Series

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Typic Fluvaquents

Typical Pedon

Birds silt loam, in a nearly level area in a cultivated field; 600 feet west and 50 feet north of the center of sec. 13, T. 3 N., R. 12 W., Lawrence County, Illinois; USGS Lawrenceville, Illinois, topographic quadrangle; lat. 38 degrees 41 minutes 41 seconds N. and long. 87 degrees 41 minutes 38 seconds W., NAD 27 (UTM Zone 16, 439654 easting and 4283135 northing, NAD 83):

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; neutral; abrupt smooth boundary.

ACg—6 to 22 inches; gray (10YR 6/1) silt loam; weak fine granular structure; friable; common fine distinct dark yellowish brown (10YR 4/4) and brown (10YR 5/3) masses of iron accumulation in the matrix; few very dark grayish brown (10YR 3/2) masses of iron and manganese accumulation; neutral; gradual smooth boundary.

Cg—22 to 60 inches; gray (10YR 6/1) silt loam; massive; friable; common medium and coarse distinct dark yellowish brown (10YR 4/4) and prominent light olive brown (2.5Y 5/4) masses of iron accumulation in the matrix; few brown (10YR 5/3) iron and manganese concretions; common medium and coarse faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Ap, A, or ACg horizon:
Hue—10YR to 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam
Reaction—moderately acid to neutral

Cg horizon:
Hue—10YR to 5Y
Value—4 to 7
Chroma—1 or 2
Texture—silt loam; strata of loam below a depth of 40 inches
Reaction—moderately acid to slightly alkaline

Blocher Series

Taxonomic classification: Fine-silty, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon

Blocher silt loam, on a slope of 9 percent in a hayfield; 390 feet east and 720 feet north of the southwest corner of sec. 3, T. 4 N., R. 7 E., Scott County, Indiana; USGS Deputy, Indiana, topographic quadrangle; lat. 38 degrees 48 minutes 37 seconds N. and long. 85 degrees 44 minutes 19 seconds W., NAD 27 (UTM Zone 16, 609521 easting and 4296485 northing, NAD 83):

Ap—0 to 6 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine and medium granular structure; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Bt1—6 to 17 inches; strong brown (7.5YR 5/6) silty clay loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots; many distinct brown (7.5YR 5/4) clay films on faces of peds; common distinct dark yellowish brown (10YR 4/4) organic coatings in root channels; few distinct yellowish brown (10YR 5/4) silt coatings on faces of peds; very strongly acid; clear wavy boundary.

2Bt2—17 to 24 inches; strong brown (7.5YR 5/6) clay loam; strong fine and medium subangular blocky structure; firm; common very fine roots; common prominent dark yellowish brown (10YR 4/4) and very few prominent grayish brown (10YR 5/2) clay films on faces of peds; many distinct pale brown (10YR 6/3) silt coatings on faces of peds; 1 percent gravel; very strongly acid; gradual wavy boundary.

2Bt3—24 to 33 inches; yellowish brown (10YR 5/6) clay loam; strong fine and medium angular blocky structure; very firm; few very fine roots between peds; many distinct strong brown (7.5YR 5/6), common prominent grayish brown (10YR 5/2), and few distinct brown (7.5YR 4/4) clay films on faces of peds; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 8 percent gravel; very strongly acid; clear wavy boundary.

2Bt4—33 to 44 inches; strong brown (7.5YR 5/6) clay; strong fine and medium angular blocky structure; very firm; few very fine roots between peds; many distinct strong brown (7.5YR 4/6) and few prominent grayish brown (10YR 5/2) clay films on faces of peds; few fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 10 percent gravel; strongly acid; gradual wavy boundary.

2Bt5—44 to 53 inches; yellowish brown (10YR 5/6) clay loam; moderate fine and medium subangular blocky structure; very firm; many distinct dark yellowish brown (10YR 4/4) and few distinct grayish brown (10YR 5/2) clay films on faces of peds; common medium prominent black irregular masses of manganese lining pores; 3 percent gravel; slightly acid; gradual wavy boundary.

2Bt6—53 to 62 inches; yellowish brown (10YR 5/6) clay loam; moderate fine and medium subangular blocky structure; firm; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few medium prominent black irregular masses of manganese lining pores; 3 percent gravel; neutral; gradual wavy boundary.

2BCt—62 to 76 inches; yellowish brown (10YR 5/6) clay loam; weak fine and medium subangular blocky structure; firm; very few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few medium prominent black irregular masses of manganese lining pores; 3 percent gravel; neutral; gradual wavy boundary.

2C—76 to 80 inches; yellowish brown (10YR 5/4) loam (65 percent) with pockets of clay loam (35 percent); common coarse distinct strong brown (7.5YR 5/6) mottles; massive; friable; common medium and coarse prominent black irregular masses of manganese lining pores; 3 percent gravel; slightly alkaline.

Range in Characteristics

Thickness of the loess and loamy material: 16 to 36 inches
Depth to the base of the argillic horizon: 50 to 80 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Thickness—2 to 5 inches
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam
Reaction—very strongly acid or strongly acid

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or silty clay loam; ranges to loam in the lower part
Reaction—very strongly acid or strongly acid; ranges to slightly acid in the upper part in limed areas

2Bt horizon:
Hue—10YR or 7.5YR
Value—5
Chroma—4 to 8
Texture—clay loam or clay
Reaction—very strongly acid or strongly acid in the upper part; ranges to neutral in the lower part
Content of rock fragments—3 to 10 percent gravel and cobbles

2BCt horizon:
Hue—10YR or 7.5YR
Value—5
Chroma—4 to 8
Texture—clay loam or clay
Reaction—moderately acid to slightly alkaline
Content of rock fragments—3 to 10 percent gravel and cobbles

2C horizon:
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture—loam or clay loam
Reaction—slightly alkaline or moderately alkaline
Content of rock fragments—3 to 10 percent gravel and cobbles

Bromer Series

Taxonomic classification: Fine-silty, mixed, active, mesic Aeric Fragic Epiaqualfs

Typical Pedon

Bromer silt loam, in a depression in an idle crop field; 2,050 feet east and 200 feet south of the northwest corner of sec. 25, T. 1 S., R. 4 E., Floyd County, Indiana; USGS Palmyra, Indiana, topographic quadrangle; lat. 38 degrees 24 minutes 12 seconds N. and long. 86 degrees 01 minute 22 seconds W., NAD 27 (UTM Zone 16, 585315 easting and 4251204 northing, NAD 83):

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; moderate medium and fine granular structure; friable; many prominent brown (7.5YR 4/4) iron accumulations lining pores; neutral; abrupt smooth boundary.
Bt1—8 to 16 inches; light yellowish brown (10YR 6/4) silt loam; moderate medium granular structure; friable; few distinct light olive brown (2.5Y 5/4) clay films on faces of peds; few medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; strongly acid; abrupt smooth boundary.
Bt2—16 to 25 inches; brown (10YR 5/3) silty clay loam; moderate medium and fine subangular blocky structure; friable; many distinct dark grayish brown (2.5Y 4/2)

and common distinct grayish brown (10YR 5/2) clay films on faces of peds; few medium faint brown (7.5YR 4/4) masses of iron accumulation in the matrix; many distinct pale brown (10YR 6/3) clay depletions on faces of peds; very strongly acid; clear smooth boundary.

Bt3—25 to 34 inches; brown (10YR 5/3) silty clay loam; moderate medium and fine subangular blocky structure; firm; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common medium faint brown (7.5YR 4/4) masses of iron accumulation in the matrix; few distinct light gray (10YR 7/2) clay depletions on faces of peds; very strongly acid; clear smooth boundary.

2Btgb1—34 to 51 inches; grayish brown (10YR 5/2) clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; many distinct gray (10YR 5/1) clay films on faces of peds; many medium prominent strong brown (7.5YR 4/6) and common medium faint light olive brown (2.5Y 5/3) masses of iron accumulation in the matrix; many prominent light gray (10YR 7/2) clay depletions on faces of peds; very strongly acid; clear wavy boundary.

2Btgb2—51 to 72 inches; grayish brown (10YR 5/2) silty clay; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; many distinct gray (10YR 5/1) clay films on faces of peds; few medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; common distinct light gray (10YR 7/2) clay depletions on faces of peds; very strongly acid; gradual wavy boundary.

2Btgb3—72 to 80 inches; grayish brown (10YR 5/2) silty clay; moderate fine and medium subangular blocky structure; firm; many distinct gray (10YR 5/1) and few distinct olive brown (2.5Y 4/3) clay films on faces of peds; common prominent light gray (10YR 7/2) clay depletions on faces of peds; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; very strongly acid.

Range in Characteristics

Thickness of the loess or silty sediments: 20 to 40 inches
Depth to the base of the argillic horizon: More than 80 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid or strongly acid

Bt or BE horizon:
Hue—10YR
Value—5 to 7
Chroma—1 to 6 with redoximorphic depletions
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid; ranges to neutral in the upper part

2Bt or 2Btgb horizon:
Hue—7.5YR or 10YR
Value—5 to 7

Chroma—2 to 8
Texture—silty clay or clay
Reaction—very strongly acid to moderately acid
Content of rock fragments—0 to 10 percent gravel

Brownstown Series

Taxonomic classification: Loamy-skeletal, mixed, active, mesic Typic Dystrudepts

Typical Pedon

Brownstown silt loam, on a southeast-facing, convex slope of 48 percent in a forested area; 500 feet west and 1,550 feet south of the northeast corner of sec. 28, T. 2 N., R. 6 E., Scott County, Indiana; USGS Henryville, Indiana, topographic quadrangle; lat. 38 degrees 35 minutes 04 seconds N. and long. 85 degrees 51 minutes 58 seconds W., NAD 27 (UTM Zone 16, 598760 easting and 4271279 northing, NAD 83):

Oi—0 to 1 inch; partially decomposed leaves from mixed deciduous trees.
E/A—1 to 6 inches; 90 percent light yellowish brown (10YR 6/4) (E) and 10 percent dark grayish brown (10YR 4/2) (A) silt loam, very pale brown (10YR 8/4) and light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; many very fine to medium roots; 5 percent channers; very strongly acid; clear wavy boundary.
Bw—6 to 18 inches; brownish yellow (10YR 6/6) channery silt loam; weak medium subangular blocky structure; friable; few very fine and fine and common medium and coarse roots; 20 percent channers; very strongly acid; gradual wavy boundary.
CB—18 to 36 inches; yellowish brown (10YR 5/4) extremely channery silt loam; weak fine subangular blocky structure; friable; few very fine to medium roots; 65 percent channers and 5 percent flagstones; very strongly acid; gradual wavy boundary.
R—36 to 60 inches; fractured, strongly cemented siltstone bedrock.

Range in Characteristics

Depth to the base of the cambic horizon: 12 to 24 inches
Depth to bedrock (lithic contact): 20 to 40 inches

E/A horizon or A horizon (if it occurs):
Hue—10YR
Value—3 or 4 (A part); 5 or 6 (E part)
Chroma—2 or 3 (A part); 4 to 6 (E part)
Texture—silt loam or channery silt loam
Reaction—extremely acid to slightly acid
Content of rock fragments—0 to 34 percent channers and flagstones
Texture—silt loam or channery silt loam
Reaction—extremely acid to slightly acid
Content of rock fragments—0 to 34 percent channers and flagstones

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—the channery to extremely channery analogs of silt loam
Reaction—extremely acid to strongly acid
Content of rock fragments—20 to 75 percent channers and flagstones

CB horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 6

Texture—extremely channery silt loam
Reaction—extremely acid to strongly acid
Content of rock fragments—60 to 85 percent channers and flagstones

Caneyville Series

Taxonomic classification: Fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Caneyville silt loam (fig. 4), on a slope of 15 percent in pasture; 300 feet south and 100 feet west of the northeast corner of sec. 20, T. 6 N., R. 1 W., Lawrence County, Indiana; USGS Bartlettsville, Indiana, topographic quadrangle; lat. 38 degrees 56 minutes 28 seconds N. and long. 86 degrees 25 minutes 32 seconds W., NAD 27 (UTM Zone 16, 549768 easting and 4310425 northing, NAD 83):

Ap—0 to 8 inches; 90 percent brown (10YR 4/3) and 10 percent dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; moderate medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

Bt1—8 to 14 inches; dark yellowish brown (10YR 4/4) silt loam; common medium faint yellowish brown (10YR 5/4) mottles; moderate medium subangular blocky structure; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; neutral; clear wavy boundary.

2Bt2—14 to 33 inches yellowish red (5YR 4/6) silty clay; strong coarse angular blocky structure; firm; many distinct yellowish red (5YR 4/8) clay films on faces of peds; 1-inch layer of dark yellowish brown (10YR 4/4) clay at a depth of 32 inches; strongly acid in the upper part and neutral at a depth of 32 inches; abrupt smooth boundary.

2R—33 to 60 inches; indurated limestone bedrock.

Range in Characteristics

Thickness of the solum and depth to bedrock (lithic contact): 20 to 40 inches
Thickness of the loess: 0 to 18 inches

Ap horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam
Reaction—strongly acid to neutral
Content of rock fragments—0 to 5 percent chert gravel

A horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam
Reaction—strongly acid to neutral
Content of rock fragments—0 to 5 percent chert gravel

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam

Figure 4.—Profile of a Caneyville soil.

Reaction—very strongly acid to neutral
Content of rock fragments—0 to 5 percent chert gravel

2Bt horizon:
Hue—commonly 5YR or 7.5YR; less commonly 2.5YR
Value—4 or 5
Chroma—4 to 8
Texture—silty clay or clay
Reaction—strongly acid to neutral; ranges to slightly alkaline in the lower part
Content of rock fragments—0 to 14 percent chert gravel

Cincinnati Series

Taxonomic classification: Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs

Typical Pedon

Cincinnati silt loam, on a slope of 7 percent in a hayfield; 550 feet south and 320 feet east of the northwest corner of sec. 13, T. 2 N., R. 8 E., Scott County, Indiana; USGS New Washington, Indiana, topographic quadrangle; lat. 38 degrees 37 minutes 03 seconds N. and long. 85 degrees 34 minutes 49 seconds W., NAD 27 (UTM Zone 16, 623600 easting and 4275493 northing, NAD 83):

Ap—0 to 8 inches; 85 percent brown (10YR 4/3) and 15 percent yellowish brown (10YR 5/6) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to moderate medium granular; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Bt—8 to 24 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; common very fine and fine roots; many distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; strongly acid; clear wavy boundary.

2Btx1—24 to 36 inches; yellowish brown (10YR 5/6) silt loam; moderate very coarse prismatic structure; firm; few very fine roots between peds; many distinct grayish brown (10YR 5/2) and common distinct strong brown (7.5YR 5/6) clay films on vertical faces of peds; few fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 1 percent gravel; brittle; very strongly acid; gradual wavy boundary.

2Btx2—36 to 51 inches; brownish yellow (10YR 6/6) loam; moderate very coarse prismatic structure; very firm; common prominent grayish brown (10YR 5/2) clay films on vertical faces of peds; common fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 2 percent gravel; brittle; strongly acid; gradual wavy boundary.

2Btx3—51 to 74 inches; yellowish brown (10YR 5/6) loam; weak coarse prismatic structure; firm; common distinct grayish brown (10YR 5/2) clay films on vertical faces of peds; common fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent gravel; brittle; very strongly acid; diffuse wavy boundary.

3Bt—74 to 80 inches; strong brown (7.5YR 5/8) clay loam; weak coarse subangular blocky structure; firm; common prominent gray (10YR 6/1) clay films on faces of peds; 3 percent gravel; strongly acid.

Range in Characteristics

Thickness of the loess or silty material: 18 to 40 inches
Depth to a fragipan: 20 to 36 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid to neutral

Bt horizon (formed in loess):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid

2Btx horizon (formed in pedisediments):
Hue—10YR
Value—5 or 6
Chroma—4 to 6
Texture—silt loam or loam
Reaction—very strongly acid to moderately acid
Content of rock fragments—0 to 5 percent gravel

3Bt horizon (formed in till):
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 8
Texture—clay loam and loam
Reaction—very strongly acid to slightly acid
Content of rock fragments—3 to 10 percent gravel

Coolville Series

Taxonomic classification: Fine, mixed, active, mesic Aquultic Hapludalfs

Typical Pedon

Coolville silt loam, on a slope of 8 percent in a forested area; 1,900 feet west and 820 feet north of the southeast corner of sec. 15, T. 2 N., R. 6 E., Scott County, Indiana; USGS Henryville, Indiana, topographic quadrangle; lat. 38 degrees 36 minutes 24 seconds N. and long. 85 degrees 50 minutes 15 seconds W., NAD 27 (UTM Zone 16, 601221 easting and 4273776 northing, NAD 83):

Oi—0 to 1 inch; partially decomposed leaves; abrupt wavy boundary.

A—1 to 2 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; weak fine granular structure; very friable; common very fine and fine and common medium and coarse roots; extremely acid; abrupt wavy boundary.

E—2 to 8 inches; yellowish brown (10YR 5/4) silt loam; weak very fine subangular blocky structure; friable; common very fine and fine and common medium and coarse roots; extremely acid; clear wavy boundary.

BE—8 to 12 inches; yellowish brown (10YR 5/6) silt loam; weak fine and medium subangular blocky structure; friable; common very fine and fine and common medium and coarse roots between peds; extremely acid; clear wavy boundary.

Bt1—12 to 21 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few fine and common medium and coarse roots between peds; many distinct strong brown (7.5YR 5/6) clay films on faces of peds; very strongly acid; clear wavy boundary.

2Bt2—21 to 30 inches; red (2.5YR 4/8) silty clay; many medium prominent pale yellow (2.5Y 7/4) mottles; moderate fine and medium angular blocky structure; firm; few fine and few medium and coarse roots between peds; many distinct red (2.5YR 4/8) and pale yellow (2.5Y 7/4) clay films on faces of peds; few fine prominent light gray (10YR 7/2) clay depletions in the matrix; very strongly acid; clear wavy boundary.

2Bt3—30 to 37 inches; light brownish gray (2.5Y 6/2) silty clay; moderate coarse prismatic structure parting to moderate coarse angular blocky; firm; few very fine and fine roots between peds; many distinct light brownish gray (2.5Y 6/2) clay films on faces of peds; many medium prominent red (2.5YR 4/8) masses of iron accumulation in the matrix; very strongly acid; clear wavy boundary.

2BC—37 to 44 inches; brown (7.5YR 5/4) parachannery silty clay loam; weak thick platy structure parting to weak fine angular blocky; firm; few very fine roots between peds; many coarse prominent light olive gray (5Y 6/2) clay depletions in the matrix; 30 percent parachanners; very strongly acid; gradual wavy boundary.

2Cr—44 to 60 inches; light olive brown (2.5Y 5/4), fractured, moderately cemented siltstone bedrock; very firm; common fine and medium barite crystals between shale fragments; common medium prominent reddish brown (5YR 4/4) masses of iron accumulation between shale fragments; very strongly acid.

Range in Characteristics

Thickness of the loess or silty material: 14 to 26 inches
Depth to bedrock (paralithic contact): 40 to 60 inches

A horizon:
Thickness—1 to 4 inches
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam
Reaction—extremely acid to strongly acid

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam
Reaction—extremely acid to neutral

E horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture—silt loam
Reaction—extremely acid to strongly acid

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—6 to 8
Texture—silty clay loam
Reaction—extremely acid to strongly acid
Content of rock fragments—0 to 3 percent gravel (ironstone)

2Bt horizon:
Hue—2.5YR to 10YR; ranges to 2.5Y in the lower part
Value—4 to 6
Chroma—4 to 8; ranges to 2 in the lower part
Texture—silty clay or silty clay loam
Reaction—extremely acid to strongly acid
Content of rock fragments—0 to 10 percent gravel and cobbles (ironstone)
Content of pararock fragments—0 to 14 percent parachanners

2BC or CB horizon:
Hue—7.5YR to 2.5Y
Value—5 or 6
Chroma—4 to 8
Texture—the parachannery to extremely parachannery analogs of silty clay loam or silty clay

Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 10 percent gravel and cobbles (ironstone)
Content of pararock fragments—15 to 70 percent

Crider Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Paleudalfs

Typical Pedon

Crider silt loam (fig. 5), on a slope of 5 percent in a pasture; 900 feet east and 2,300 feet north of the southwest corner of sec. 5, T. 2 S., R. 5 E., Floyd County, Indiana; USGS Georgetown, Indiana, topographic quadrangle; lat. 38 degrees 22 minutes 01 second N. and long. 85 degrees 59 minutes 20 seconds W., NAD 27 (UTM Zone 16, 588312 easting and 4247035 northing, NAD 83):

Ap—0 to 8 inches; 90 percent dark yellowish brown (10YR 4/4) and 10 percent yellowish brown (10YR 5/6) silt loam, light yellowish brown (10YR 6/4) and very pale brown (10YR 7/4) dry; weak fine and medium subangular blocky structure parting to moderate fine granular; friable; neutral; abrupt smooth boundary.

Bt1—8 to 17 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable; many prominent brown (7.5YR 4/4) clay films on faces of peds; few distinct dark brown (10YR 3/3) organic coatings on faces of peds; few prominent black (10YR 2/1) iron and manganese stains on faces of peds and in pores; 1 percent chert gravel; neutral; clear wavy boundary.

Bt2—17 to 24 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable; many prominent brown (7.5YR 4/4) clay films on faces of peds; few prominent black (10YR 2/1) iron and manganese stains on faces of peds and in pores; 1 percent chert gravel; slightly acid; clear wavy boundary.

2Bt3—24 to 34 inches; strong brown (7.5YR 4/6) silt loam; moderate fine subangular blocky structure; friable; common prominent yellowish red (5YR 4/6) clay films on faces of peds and in pores; common prominent yellowish brown (10YR 5/4) clay films on faces of peds; few prominent black (10YR 2/1) iron and manganese stains on faces of peds; 4 percent angular limestone flagstones and 10 percent angular chert gravel; strongly acid; clear wavy boundary.

2Bt4—34 to 46 inches; yellowish red (5YR 5/6) silty clay loam; moderate fine subangular blocky structure; firm; common prominent red (2.5YR 4/6) and common prominent yellowish brown (10YR 5/4) clay films on faces of peds; few prominent black (10YR 2/1) iron and manganese stains on faces of peds; 4 percent angular chert gravel and 1 percent angular limestone flagstones; very strongly acid; clear wavy boundary.

3Bt5—46 to 56 inches; red (2.5YR 4/6) silty clay; moderate very fine angular blocky structure; firm; common prominent brown (7.5YR 4/4) and many prominent red (2.5YR 4/6) clay films on faces of peds; few prominent black (10YR 2/1) iron and manganese stains on faces of peds; 2 percent angular chert gravel; very strongly acid; clear wavy boundary.

3Bt6—56 to 65 inches; red (2.5YR 4/6) clay; moderate very fine angular blocky structure; firm; common prominent brown (7.5YR 4/4) and many prominent red (2.5YR 4/6) clay films on faces of peds; few prominent black (10YR 2/1) iron and manganese stains on faces of peds; 2 percent angular chert gravel; very strongly acid; clear wavy boundary.

3Bt7—65 to 76 inches; 70 percent yellowish red (5YR 5/6) and 30 percent strong brown (7.5YR 5/6) silty clay; moderate very fine and fine angular blocky structure; firm; many prominent red (2.5YR 4/8) and few prominent strong brown (7.5YR 4/6)

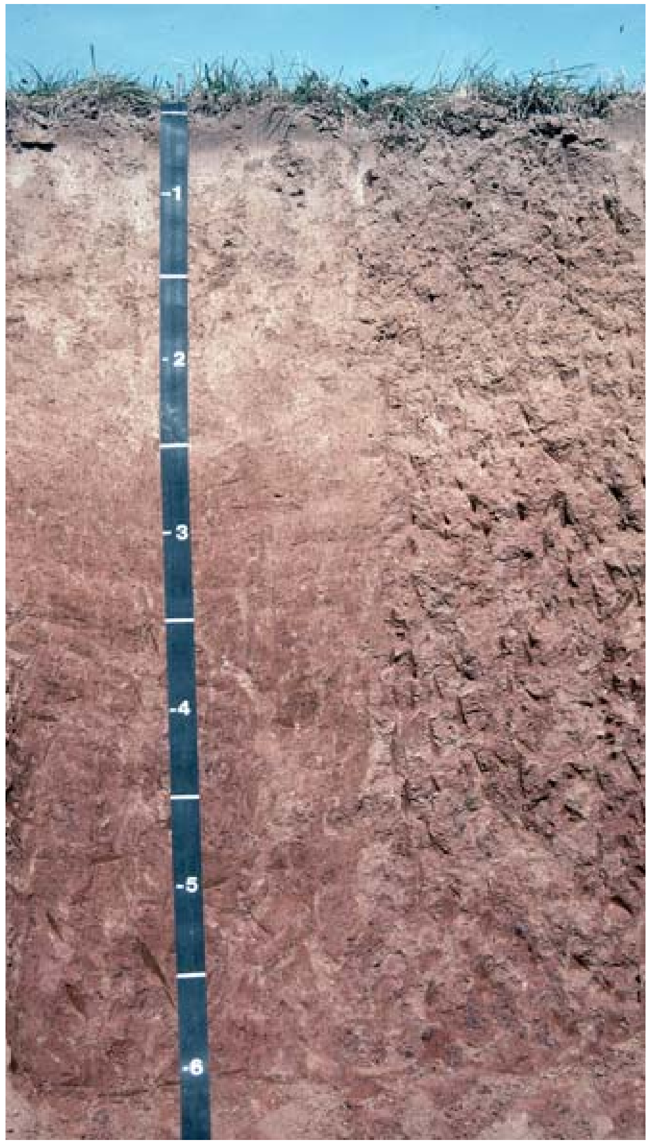

Figure 5.—Profile of a Crider soil.

clay films on faces of peds; few prominent black (10YR 2/1) iron and manganese stains on faces of peds; few fine irregular black (10YR 2/1) iron and manganese concretions throughout; 3 percent chert gravel; strongly acid; clear wavy boundary.

3Bt8—76 to 80 inches; strong brown (7.5YR 5/6) clay; moderate very fine and fine angular blocky structure; firm; many prominent yellowish red (5YR 4/6) and few prominent strong brown (7.5YR 4/6) clay films on faces of peds; common prominent black (10YR 2/1) iron and manganese stains on faces of peds; common fine irregular black (10YR 2/1) iron and manganese concretions throughout; 3 percent chert gravel; strongly acid.

Range in Characteristics

Thickness of the loess: 20 to 45 inches
Depth to the base of the argillic horizon: 60 to more than 80 inches
Depth to bedrock (lithic contact): 60 to more than 100 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—4
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid or strongly acid

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silty clay loam or silt loam
Reaction—commonly very strongly acid or strongly acid; ranges to neutral in the upper part
Content of rock fragments—0 to 2 percent chert gravel

2Bt horizon:
Hue—2.5YR to 7.5YR
Value—3 to 5
Chroma—4 to 8
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 14 percent chert gravel

3Bt horizon:
Hue—2.5YR to 7.5YR
Value—3 to 6
Chroma—4 to 8
Texture—silty clay or clay
Reaction—very strongly acid to moderately acid
Content of rock fragments—0 to 14 percent chert gravel; includes flagstones and stones

Cuba Series

Taxonomic classification: Fine-silty, mixed, active, mesic Fluventic Dystrudepts

Typical Pedon

Cuba silt loam, in a nearly level area in a cultivated field; 210 feet east and 1,710 feet north of the center of sec. 28, T. 1 N., R. 3 W., Dubois County, Indiana; USGS Cuzco, Indiana, topographic quadrangle; lat. 38 degrees 29 minutes 40 seconds N. and long. 86 degrees 44 minutes 44 seconds W., NAD 27 (UTM Zone 16, 522188 easting and 4260713 northing, NAD 83):

Ap—0 to 10 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

Bw1—10 to 21 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure parting to moderate medium granular; friable; few fine roots; few distinct brown (10YR 4/3) organic coatings on faces of peds; very strongly acid; gradual wavy boundary.

Bw2—21 to 47 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure parting to moderate medium granular; friable; very strongly acid; clear wavy boundary.

C—47 to 60 inches; brown (10YR 5/3) silt loam; common medium distinct light brownish gray (10YR 6/2) and yellowish brown (10YR 5/6) mottles; massive; friable; few fine distinct black (10YR 2/1) iron and manganese concretions; very strongly acid.

Range in Characteristics

Depth to the base of the cambic horizon: 30 to 54 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid to neutral
Content of rock fragments—0 to 3 percent gravel

A horizon (if it occurs):
Thickness—1 to 2 inches
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture—silt loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 3 percent gravel

Bw horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 3 percent gravel

C horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam or loam; sandy loam, fine sandy loam, and thin strata of loamy sand included below a depth of 40 inches
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 14 percent gravel

Elkinsville Series

Taxonomic classification: Fine-silty, mixed, active, mesic Ultic Hapludalfs

Typical Pedon

Elkinsville silt loam, on a slope of 3 percent in a cultivated field; 1,690 feet south and 1,370 feet east of the northwest corner of sec. 3, T. 6 N., R. 12 E., Ripley County, Indiana; USGS Cross Plains, Indiana, topographic quadrangle; lat. 38 degrees 59 minutes 46 seconds N. and long. 85 degrees 10 minutes 48 seconds W., NAD 27 (UTM Zone 16, 657615 easting and 4317926 northing, NAD 83):

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak very fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.

Bt1—9 to 15 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; few fine roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; few distinct brown (10YR 4/3) organic coatings on faces of peds; slightly acid; gradual smooth boundary.

Bt2—15 to 24 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; firm; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; very strongly acid; gradual smooth boundary.

2Bt3—24 to 38 inches; strong brown (7.5YR 5/6) clay loam; moderate medium subangular blocky structure; firm; few fine roots; many distinct brown (7.5YR 5/4) clay films on faces of peds; 1 percent gravel; very strongly acid; gradual smooth boundary.

2Bt4—38 to 50 inches; strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; firm; few fine roots; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; very strongly acid; 1 percent gravel; gradual smooth boundary.

2Bt5—50 to 58 inches; strong brown (7.5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable; few fine prominent pale brown (10YR 6/3) mottles; few distinct yellowish brown (10YR 5/4) clay bridges between sand grains; common irregular fine and medium masses of iron accumulation in the matrix; very strongly acid; gradual smooth boundary.

2CB—58 to 68 inches; yellowish brown (10YR 5/6) clay loam; massive; friable; common fine distinct pale brown (10YR 6/3) mottles; common irregular fine and medium masses of iron accumulation in the matrix; 1 percent gravel; strongly acid; clear smooth boundary.

2C—68 to 80 inches; dark yellowish brown (10YR 4/4) loam; massive; friable; 4 percent gravel; moderately acid.

Range in Characteristics

Thickness of the loess: Less than 40 inches
Depth to the base of the argillic horizon: 42 to 72 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid or strongly acid

EB or BE horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture—silt loam

Reaction—very strongly acid or strongly acid; ranges to neutral in the upper part in limed areas

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid; ranges to neutral in the upper part in limed areas

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—loam, clay loam, or sandy clay loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 5 percent gravel

2BC or 2CB horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—loam, sandy loam, fine sandy loam, clay loam, or sandy clay loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 5 percent gravel

2C horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, sandy loam, or fine sandy loam and thin strata of clay loam or sandy clay loam
Reaction—very strongly acid to moderately acid
Content of rock fragments—0 to 14 percent gravel

Gatton Series

Taxonomic classification: Fine-loamy, mixed, active, mesic Oxyaquic Fragiudalfs
Taxadjunct features: The Gatton soils in this survey area have more silt and less sand in the particle-size control section than is defined as the range for the series. This difference, however, does not alter the usefulness or behavior of the soils. These soils are classified as fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs.

Typical Pedon

Gatton silt loam, on a slope of 3 percent in a cultivated field; 1,000 feet east and 1,100 feet north of the southwest corner of sec. 20, T. 1 S., R. 5 E., Floyd County, Indiana; USGS Borden, Indiana, topographic quadrangle; lat. 38 degrees 24 minutes 34 seconds N. and long. 85 degrees 59 minutes 23 seconds W., NAD 27 (UTM Zone 16, 588195 easting and 4251754 northing, NAD 83):

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; slightly acid; abrupt smooth boundary.
Bt1—9 to 16 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; common faint brown (7.5YR 4/4) clay films on faces of peds; moderately acid; gradual wavy boundary.

Bt2—16 to 24 inches; strong brown (7.5YR 4/6) silt loam; moderate medium subangular blocky structure; friable; common distinct brown (7.5YR 5/4) clay films on faces of peds; strongly acid; gradual wavy boundary.

Btx1—24 to 30 inches; yellowish brown (10YR 5/6) silt loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; very firm; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds and in pores; common medium distinct pale brown (10YR 6/3) clay depletions on faces of peds; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; brittle; strongly acid; gradual wavy boundary.

2Btx2—30 to 53 inches; light yellowish brown (10YR 6/4) silt loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; common distinct light brownish gray (10YR 6/2) clay films on faces of peds and in pores; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; common distinct pale brown (10YR 6/3) clay depletions on faces of peds; brittle; strongly acid; gradual wavy boundary.

2Btx3—53 to 66 inches; strong brown (7.5YR 5/6) silty clay loam; moderate coarse prismatic structure parting to moderate medium angular blocky; very firm; many distinct brown (7.5YR 4/4) clay films on faces of peds; common distinct very pale brown (10YR 7/4) and common prominent light gray (10YR 7/1) clay depletions on faces of peds; brittle; strongly acid; gradual wavy boundary.

3Btb—66 to 80 inches; strong brown (7.5YR 5/6) clay loam; moderate medium subangular blocky structure; firm; many distinct brown (7.5YR 4/4) and common prominent red (2.5YR 4/6) clay films on faces of peds; common distinct very pale brown (10YR 7/4) clay depletions on faces of peds; common fine prominent gray (7.5YR 6/1) iron depletions in the matrix; strongly acid.

Range in Characteristics

Thickness of the loess: 20 to 36 inches
Depth to a fragipan: 20 to 36 inches
Depth to the base of the argillic horizon: More than 80 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid to neutral

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6; redoximorphic depletions in some part
Texture—silt loam or silty clay loam
Reaction—commonly very strongly acid or strongly acid; ranges to neutral in the upper part

2Btx horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 5 percent gravel

3Bt horizon:
Hue—7.5YR

Value—4 or 5
Chroma—6 to 8
Texture—clay loam or loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 10 percent gravel

Gilwood Series

Taxonomic classification: Fine-loamy, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Gilwood silt loam, on a convex slope of 22 percent in a forested area; 600 feet south and 130 feet east of the center of sec. 26, T. 7 N., R. 2 E., Jackson County, Indiana; USGS Elkinsville, Indiana, topographic quadrangle; lat. 39 degrees 00 minutes 38 seconds N. and long. 86 degrees 16 minutes 16 seconds W., NAD 27 (UTM Zone 16, 563101 easting and 4318232 northing, NAD 83):

Oi—0 to 1 inch; partially decomposed leaves from mixed deciduous trees.
A—1 to 6 inches; brown (10YR 4/3) silt loam, light yellowish brown (10YR 6/4) dry; weak medium granular structure; friable; many fine and medium roots; 10 percent channers; slightly acid; clear wavy boundary.
BE—6 to 11 inches; yellowish brown (10YR 5/4) channery silt loam; weak fine subangular blocky structure; friable; many medium roots; 15 percent channers; strongly acid; clear wavy boundary.
Bt—11 to 22 inches; yellowish brown (10YR 5/6) channery silt loam; moderate fine and medium subangular blocky structure; friable; common fine and medium roots; many distinct strong brown (7.5YR 5/6) clay films on faces of peds; 20 percent channers; very strongly acid; gradual wavy boundary.
CB—22 to 32 inches; light yellowish brown (2.5Y 6/4) extremely channery silt loam; weak fine subangular blocky structure; friable; 65 percent channers; very strongly acid; clear wavy boundary.
R—32 to 60 inches; fractured, very strongly cemented siltstone bedrock.

Range in Characteristics

Depth to the base of the argillic horizon: 15 to 32 inches
Depth to bedrock (lithic contact): 20 to 40 inches

A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam or channery silt loam
Reaction—very strongly acid to slightly acid
Content of rock fragments—0 to 30 percent channers

E horizon (if it occurs):
Hue—10YR
Value—6
Chroma—4 to 6
Texture—silt loam or channery silt loam
Reaction—very strongly acid to slightly acid
Content of rock fragments—0 to 30 percent channers

BE horizon:
Hue—10YR
Value—5 or 6

Chroma—4 to 6
Texture—silt loam or channery silt loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—5 to 30 percent channers

Bt horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 6
Texture—channery silt loam
Reaction—extremely acid or very strongly acid
Content of rock fragments—15 to 30 percent channers

CB or BC horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—4 to 6
Texture—very channery silt loam or extremely channery silt loam
Reaction—extremely acid or very strongly acid
Content of rock fragments—35 to 65 percent channers

Gnawbone Series

Taxonomic classification: Fine-silty, mixed, semiactive, mesic Typic Hapludults

Typical Pedon

Gnawbone silt loam, on a west-facing, convex slope of 22 percent in a forested area; 600 feet south and 450 feet west of the northeast corner of sec. 28, T. 2 N., R. 6 E., Scott County, Indiana; USGS Henryville, Indiana, topographic quadrangle; lat. 38 degrees 35 minutes 13 seconds N. and long. 85 degrees 51 minutes 01 second W., NAD 27 (UTM Zone 16, 600136 easting and 4271573 northing, NAD 83):

Oi—0 to 1 inch; partially decomposed leaves from mixed deciduous trees.

A—1 to 7 inches; light yellowish brown (10YR 6/4) silt loam, very pale brown (10YR 7/4) dry; weak medium subangular blocky structure parting to moderate medium granular; friable; many very fine to medium and few coarse roots; 3 percent gravel (ironstone); extremely acid; clear wavy boundary.

Bt1—7 to 12 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; many medium, common fine and very fine, and few coarse roots between peds; few distinct strong brown (7.5YR 5/6) clay films on faces of peds; 3 percent gravel (ironstone); 10 percent parachanners; extremely acid; clear wavy boundary.

Bt2—12 to 17 inches; dark yellowish brown (10YR 4/6) parachannery silty clay loam; moderate medium subangular blocky structure; friable; common very fine to medium and few coarse roots between peds; common distinct strong brown (7.5YR 5/6) clay films on faces of peds; 10 percent gravel (ironstone); 15 percent parachanners; very strongly acid; clear wavy boundary.

Bt3—17 to 27 inches; dark yellowish brown (10YR 4/6) parachannery silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium and few coarse roots between peds; many distinct strong brown (7.5YR 5/6) clay films on faces of peds; 3 percent gravel (ironstone); 20 percent parachanners; very strongly acid; clear wavy boundary.

Bt4—27 to 35 inches; yellowish brown (10YR 5/4) very parachannery silt loam; moderate fine subangular blocky structure; friable; common fine and medium roots between peds; few distinct strong brown (7.5YR 5/6) clay films on faces of peds; 3

percent gravel (ironstone); 35 percent parachanners; very strongly acid; gradual wavy boundary.

CB—35 to 39 inches; yellowish brown (10YR 5/4) extremely parachannery silt loam; weak fine subangular blocky structure; friable; 3 percent gravel (ironstone); 60 percent parachanners; very strongly acid; gradual wavy boundary.

Cr—39 to 60 inches; light olive brown (2.5Y 5/4), fractured, moderately cemented siltstone bedrock.

Range in Characteristics

Depth to the base of the argillic horizon: 18 to 36 inches
Depth to bedrock (paralithic contact): 20 to 40 inches

A or Ap horizon (if it occurs):
Hue—10YR
Value—3 to 6
Chroma—2 to 4
Texture—silt loam
Reaction—extremely acid or very strongly acid; ranges to neutral in limed areas
Content of rock fragments—1 to 5 percent gravel (ironstone)

Bt or BE horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—silt loam or silty clay loam or the parachannery and very parachannery analogs of these textures
Reaction—extremely acid or very strongly acid
Content of pararock fragments—0 to 35 percent parachanners
Content of rock fragments—1 to 12 percent gravel and cobbles (ironstone)

CB or BC horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6
Chroma—4 to 8
Texture—the parachannery to extremely parachannery analogs of silt loam or silty clay loam
Reaction—extremely acid or very strongly acid
Content of pararock fragments—30 to 70 percent parachanners
Content of rock fragments—1 to 12 percent gravel and cobbles (ironstone)

Cr horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6

Haggatt Series

Taxonomic classification: Fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Haggatt silt loam (fig. 6), on a slope of 16 percent in a pasture; 400 feet north and 1,500 feet east of the southwest corner of sec. 11, T. 1 S., R. 4 E., Washington County, Indiana; USGS Palmyra, Indiana, topographic quadrangle; lat. 38 degrees 26 minutes 03 seconds N. and long. 86 degrees 02 minutes 44 seconds W., NAD 27 (UTM Zone 16, 583304 easting and 4254426 northing, NAD 83):

Figure 6.—Profile of a Haggatt soil.

Ap—0 to 5 inches; 90 percent brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; very strongly acid; abrupt smooth boundary.

Bt1—5 to 16 inches; strong brown (7.5YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; many fine roots; many fine pores; many distinct brown (7.5YR 4/4) clay films on faces of peds; 12 percent gravel; very strongly acid; clear wavy boundary.

2Bt2—16 to 25 inches; red (2.5YR 4/6) clay; moderate medium angular blocky structure; firm; common fine roots; common fine pores; many distinct reddish brown (2.5YR 4/4) clay films on faces of peds; 3 percent gravel; very strongly acid; clear wavy boundary.

2Bt3—25 to 36 inches; red (2.5YR 4/6) clay; moderate medium angular blocky structure; very firm; few fine roots; few fine pores; many distinct reddish brown (2.5YR 4/4) clay films on faces of peds; very strongly acid; clear wavy boundary.

2Bt4—36 to 44 inches; strong brown (7.5YR 4/6) clay; strong coarse angular blocky structure; very firm; many distinct brown (7.5YR 4/4) clay films on faces of peds; common medium very dark gray (10YR 3/1) iron and manganese concretions; neutral; clear wavy boundary.

2R—44 to 60 inches; light gray (10YR 7/1), fractured, indurated limestone bedrock.

Range in Characteristics

Thickness of the loess: 0 to 20 inches
Depth to bedrock (lithic contact): 40 to 60 inches
Depth to the base of the argillic horizon: 40 to 60 inches

Ap horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 6
Texture—silt loam or silty clay loam
Reaction—very strongly acid to neutral
Content of rock fragments—0 to 10 percent chert gravel

A horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 10 percent chert gravel

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid; ranges to neutral in the upper part in limed areas
Content of rock fragments—0 to 14 percent chert gravel and cobbles

2Bt horizon:
Hue—2.5YR, 5YR, or 7.5YR; hue of 5YR or redder in some part
Value—4 or 5
Chroma—4 to 8
Texture—silty clay or clay; less commonly the gravelly analogs of these textures
Reaction—very strongly acid or strongly acid; ranges to neutral in the lower part
Content of rock fragments—0 to 20 percent chert gravel and cobbles and stones

Hatfield Series

Taxonomic classification: Fine-silty, mixed, active, mesic Aeric Fragic Epiaqualfs

Typical Pedon

Hatfield silt loam, on a slope of 1 percent in a pasture; 800 feet north and 800 feet east of the southwest corner of sec. 20, T. 6 S., R. 3 W., Perry County, Indiana; USGS Tell City, Indiana, topographic quadrangle; lat. 37 degrees 58 minutes 23 seconds N. and long. 86 degrees 46 minutes 10 seconds W., NAD 27 (UTM Zone 16, 520249 easting and 4202856 northing, NAD 83):

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine subangular blocky structure parting to moderate fine granular; friable; many fine and medium roots; 3 percent rounded quartzite and subrounded fine sandstone gravel; neutral; abrupt smooth boundary.

Bt—7 to 14 inches; light yellowish brown (10YR 6/4) silt loam; moderate fine subangular blocky structure; friable; many distinct light gray (10YR 7/1) clay films on faces of peds and in pores; common fine prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; many fine irregular black (10YR 2/1) iron and manganese concretions; common medium distinct light gray (10YR 7/2) iron depletions in the matrix; 5 percent rounded quartzite and subrounded fine sandstone gravel; moderately acid; clear smooth boundary.

Btg1—14 to 20 inches; light gray (10YR 7/2) silt loam; moderate fine subangular blocky structure; friable; many faint light gray (10YR 7/1) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine irregular black (10YR 2/1) iron and manganese concretions; common medium faint light gray (10YR 7/2) iron depletions in the matrix; 3 percent rounded fine quartzite gravel; very strongly acid; gradual smooth boundary.

Btg2—20 to 27 inches; light gray (10YR 7/2) silty clay loam; weak fine prismatic structure parting to moderate medium subangular blocky; firm; common fine roots between peds; many faint light gray (10YR 7/1) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine irregular black (10YR 2/1) iron and manganese concretions; 3 percent rounded fine quartzite gravel; very strongly acid; gradual smooth boundary.

Btg3—27 to 36 inches; 85 percent light brownish gray (10YR 6/2) and 15 percent dark yellowish brown (10YR 4/6) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots between peds; many faint light gray (10YR 7/1) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine irregular black (10YR 2/1) iron and manganese concretions; 1 percent rounded quartzite gravel; very strongly acid; gradual wavy boundary.

Btg/Btx—36 to 44 inches; 60 percent light brownish gray (10YR 6/2) silty clay loam (Btg); moderate medium subangular blocky structure; firm; many faint light gray (10YR 7/1) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine irregular black (10YR 2/1) iron and manganese concretions; 40 percent dark yellowish brown (10YR 4/6) silty clay loam (Btx); weak medium prismatic structure parting to moderate medium subangular blocky; very firm; few distinct light gray (10YR 7/1) clay films of vertical faces of peds; brittle; strongly acid; gradual wavy boundary.

Btx1—44 to 55 inches; dark yellowish brown (10YR 4/6) silty clay loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few distinct light brownish gray (10YR 6/2) clay films on vertical faces of peds; many fine irregular black (10YR 2/1) iron and manganese concretions; common medium prominent light brownish gray (10YR 6/2) clay depletions in the matrix; 65 percent brittle; strongly acid; gradual smooth boundary.

Btx2—55 to 78 inches; dark yellowish brown (10YR 4/6) silty clay loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few distinct light brownish gray (10YR 6/2) clay films on vertical faces of peds; many fine irregular black (10YR 2/1) iron and manganese concretions; common medium prominent light brownish gray (10YR 6/2) clay depletions in the matrix; 65 percent brittle; moderately acid; gradual smooth boundary.

BCt—78 to 83 inches; dark yellowish brown (10YR 4/4) silt loam; moderate very thick platy structure parting to moderate fine subangular blocky; firm; very few distinct yellowish brown (10YR 5/4) clay films on faces of peds; common irregular black (10YR 2/1) iron and manganese concretions; neutral.

Range in Characteristics

Depth to a layer with fragic soil properties: 30 to 45 inches
Depth to the base of the argillic horizon: 60 to more than 80 inches

Ap or A horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or silty clay loam
Reaction—very strongly acid to moderately acid; ranges to neutral in limed areas
Content of rock fragments—0 to 5 percent gravel

Bt horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 6
Texture—silt loam or silty clay loam
Reaction—commonly very strongly acid to moderately acid; ranges to slightly acid in the upper part in limed areas
Content of rock fragments—0 to 5 percent gravel

Btg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 5 percent gravel

Btg/Bt or Btx horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—2 to 6
Texture—commonly silt loam or silty clay loam; less commonly loam
Reaction—very strongly acid to moderately acid in the upper part; ranges to slightly acid in the lower part
Content of rock fragments—0 to 5 percent gravel

BC or BCt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 6
Texture—commonly silt loam or silty clay loam; less commonly loam or clay loam or stratified with these textures
Reaction—strongly acid to neutral
Content of rock fragments—0 to 5 percent gravel

Haymond Series

Taxonomic classification: Coarse-silty, mixed, superactive, mesic Dystric Fluventic Eutrudepts

Typical Pedon

Haymond silt loam, in a nearly level area in a cultivated field; 1,800 feet east and 300 feet north of the southwest corner of sec. 2, T. 1 S., R. 11 W., Knox County, Indiana; USGS Patoka, Indiana, topographic quadrangle; lat. 38 degrees 27 minutes 04 seconds N. and long. 87 degrees 36 minutes 19 seconds W., NAD 27 (UTM Zone 16, 447182 easting and 4256048 northing, NAD 83):

Ap—0 to 10 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.

Bw1—10 to 25 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common fine roots; common distinct brown (10YR 4/3) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bw2—25 to 44 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; few distinct dark yellowish brown (10YR 4/4) organic coatings on faces of peds; neutral; clear smooth boundary.

C—44 to 60 inches; yellowish brown (10YR 5/4) fine sandy loam; massive with weak bedding planes; friable; slightly alkaline.

Range in Characteristics

Depth to the base of the cambic horizon: 30 to 60 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—moderately acid to neutral

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—moderately acid to neutral

C horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam, loam, fine sandy loam, or sandy loam or stratified with these textures
Reaction—slightly acid to slightly alkaline
Content of rock fragments—0 to 5 percent gravel

Huntington Series

Taxonomic classification: Fine-silty, mixed, active, mesic Fluventic Hapludolls

Typical Pedon

Huntington silt loam, in a nearly level area in a cultivated field; 100 feet south and 900 feet west of the northeast corner of sec. 28, T. 3 S., R. 6 E., Floyd County, Indiana; USGS Louisville West, Indiana, topographic quadrangle; lat. 38 degrees 13 minutes 36 seconds N. and long. 85 degrees 51 minutes 06 seconds W., NAD 27 (UTM Zone 16, 600498 easting and 4231619 northing, NAD 83):

A—0 to 12 inches; dark brown (10YR 3/3) (rubbed) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

Bw1—12 to 36 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine prismatic structure parting to moderate medium subangular blocky; friable; common fine roots; many distinct dark brown (10YR 3/3) organic coatings on faces of peds; neutral; clear wavy boundary.

Bw2—36 to 42 inches; brown (10YR 4/3) silt loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; common distinct (10YR 3/3) organic coatings on faces of peds; neutral; clear wavy boundary.

BC—42 to 80 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; neutral.

Range in Characteristics

Thickness of the mollic epipedon: Commonly 10 to 14 inches; ranges to 24 inches
Depth to the base of the cambic horizon: 60 to more than 80 inches

A or Ap horizon:
Hue—10YR
Value—2 or 3
Chroma—2 or 3
Texture—silt loam
Reaction—moderately acid to neutral

Bw horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

BC horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam, silty clay loam, sandy loam, or loam
Reaction—moderately acid to slightly alkaline

Kintner Series

Taxonomic classification: Loamy-skeletal, mixed, active, mesic Oxyaquic Eutrudepts

Typical Pedon

Kintner loam, on a slope of 1 percent in a pasture; 1,800 feet west and 2,000 feet north of the southeast corner of sec. 20, T. 5 S., R. 5 E., Harrison County, Indiana; USGS Kosmosdale, KY-IN, topographic quadrangle; lat. 38 degrees 03 minutes 31 seconds N. and long. 85 degrees 58 minutes 53 seconds W., NAD 27 (UTM Zone 16, 0589355 easting and 4212814 northing, NAD 83):

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; many very fine and fine roots; many fine irregular pores; slightly effervescent; slightly alkaline; clear smooth boundary.

Bw1—5 to 9 inches; brown (10YR 4/3) loam; moderate fine subangular blocky structure; friable; few fine roots; few fine irregular pores; neutral; clear wavy boundary.

Bw2—9 to 16 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots throughout;

few dark yellowish brown (10YR 4/4) organic stains on faces of peds; 2 percent gravel (chert); neutral; clear smooth boundary.

Bw3—16 to 23 inches; 95 percent dark yellowish brown (10YR 4/4) and 5 percent yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; common very fine and fine roots throughout; few brown (10YR 4/3) organic stains on faces of peds; 3 percent gravel (chert); slightly effervescent; slightly alkaline; abrupt wavy boundary.

2Bw4—23 to 48 inches; yellowish brown (10YR 5/6) extremely gravelly sandy loam; weak medium subangular blocky structure; very friable; few very fine roots throughout; 61 percent gravel (chert) and 5 percent cobbles (chert); slightly effervescent; slightly alkaline; abrupt wavy boundary.

2R—48 to 60 inches; light gray (10YR 7/1), fractured, indurated limestone bedrock.

Range in Characteristics

Thickness of medium-textured alluvial material: 10 to 30 inches
Depth to the base of the cambic horizon: 12 to 59 inches
Depth to lithic contact: 40 to 60 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—loam or silt loam
Content of rock fragments—0 to 10 percent gravel and 0 to 2 percent cobbles
Reaction—moderately acid to slightly alkaline

A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 to 4
Texture—loam or silt loam
Content of rock fragments—0 to 10 percent gravel and 0 to 2 percent cobbles
Reaction—moderately acid to slightly alkaline

BA or Bw horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—loam or silt loam
Content of rock fragments—0 to 14 percent gravel and 0 to 3 percent cobbles
Reaction—moderately acid to slightly alkaline

2Bw or 2BC horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—4 to 8
Texture—commonly the very gravelly or extremely gravelly analogs of loam or sandy loam; less commonly the very gravelly or extremely gravelly analogs of clay loam or sandy clay loam
Content of rock fragments—35 to 75 percent gravel, 0 to 10 percent cobbles, and 0 to 5 percent stones
Reaction—moderately acid to slightly alkaline

Knobcreek Series

Taxonomic classification: Fine-silty over clayey, mixed, active, mesic Typic Paleudalfs

Typical Pedon

Knobcreek silt loam, on a slope of 13 percent in a pasture; 2,050 feet west and 100 feet south of the northeast corner of sec. 36, T. 1 S., R. 4 E., Floyd County, Indiana; USGS Palmyra, Indiana, topographic quadrangle; lat. 38 degrees 23 minutes 19 seconds N. and long. 86 degrees 01 minute 17 seconds W., NAD 27 (UTM Zone 16, 585467 easting and 4249393 northing, NAD 83):

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine subangular blocky structure parting to moderate fine and medium granular; very friable; strongly acid; abrupt smooth boundary.

Bt1—7 to 11 inches; strong brown (7.5YR 5/6) silty clay loam; moderate very fine and fine subangular blocky structure; friable; many distinct strong brown (7.5YR 4/6) clay films on faces of peds; 1 percent subangular gravel (chert); strongly acid; clear smooth boundary.

Bt2—11 to 16 inches; strong brown (7.5YR 5/6) silty clay loam; moderate very fine and fine subangular blocky structure; friable; many distinct strong brown (7.5YR 4/6) clay films on faces of peds; 1 percent subangular gravel (chert); very strongly acid; clear wavy boundary.

2Bt3—16 to 31 inches; 60 percent yellowish red (5YR 4/6) and 40 percent strong brown (7.5YR 5/6) clay; moderate very fine and fine angular blocky structure; firm; many prominent red (2.5YR 4/6) and common prominent dark yellowish brown (10YR 4/6) clay films on faces of peds; 1 percent subangular gravel (chert); very strongly acid; gradual wavy boundary.

2Bt4—31 to 43 inches; strong brown (7.5YR 5/6) clay; moderate very fine and fine angular blocky structure; firm; common prominent red (2.5YR 4/6), few distinct strong brown (7.5YR 4/6), and few distinct pale brown (10YR 6/3) clay films on faces of peds; 1 percent subangular gravel (chert); very strongly acid; clear wavy boundary.

2Bt5—43 to 51 inches; strong brown (7.5YR 5/6) clay; moderate very fine and fine angular blocky structure; firm; common prominent red (2.5YR 4/6), many faint strong brown (7.5YR 5/6), and very few prominent light gray (10YR 7/2) clay films on faces of peds; 1 percent subangular gravel (chert); very strongly acid; clear wavy boundary.

2Bt6—51 to 63 inches; yellowish brown (10YR 5/6) clay; moderate very fine and fine angular blocky structure; firm; many prominent dark yellowish brown (10YR 4/6), few prominent red (2.5YR 4/6), and few prominent light gray (10YR 7/2) clay films on faces of peds; 4 percent subangular gravel (chert) and 1 percent subrounded cobbles (chert); moderately acid; clear wavy boundary.

2Bt7—63 to 89 inches; yellowish brown (10YR 5/6) clay; moderate very fine and fine angular blocky structure; firm; common prominent dark yellowish brown (10YR 4/6) and few prominent light gray (10YR 7/2) clay films on faces of peds; few prominent black (10YR 2/1) iron and manganese stains on faces of peds; 2 percent subangular gravel (chert); neutral.

Range in Characteristics

Thickness of the loess: 8 to 20 inches

Depth to the base of the argillic horizon and depth to bedrock (lithic contact): 60 to more than 100 inches

Ap horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam
Reaction—very strongly acid to neutral
Content of rock fragments—0 to 14 percent gravel (chert)

A horizon (if it occurs):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 14 percent gravel (chert)

E or BE horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid or strongly acid; ranges to neutral in the upper part in limed areas
Content of rock fragments—0 to 14 percent gravel (chert)

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—6 to 8
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid; ranges to neutral in the upper part in limed areas
Content of rock fragments—0 to 14 percent gravel (chert)

2Bt horizon:
Hue—2.5YR to 7.5YR; ranges to 10YR in the lower part
Value—4 or 5
Chroma—6 to 8
Texture—commonly silty clay or clay or the gravelly analogs of these textures
Reaction—very strongly acid or strongly acid in the upper part; ranges to neutral in the lower part
Content of rock fragments—0 to 20 percent gravel (chert); 0 to 10 percent cobbles, stones, and boulders

Kurtz Series

Taxonomic classification: Fine-silty, mixed, semiactive, mesic Ultic Hapludalfs

Typical Pedon

Kurtz silt loam, on a convex slope of 37 percent in a forested area; 500 feet east and 2,000 feet south of the northwest corner of sec. 19, T. 5 N., R. 5 E., Jackson County, Indiana; USGS Vallonia, Indiana, topographic quadrangle; lat. 38 degrees 51 minutes 42 seconds N. and long. 86 degrees 01 minute 02 seconds W., NAD 27 (UTM Zone 16, 585269 easting and 4301890 northing, NAD 83):

Oi—0 to 1 inch; roots and partially decomposed leaves.

A—1 to 3 inches; grayish brown (10YR 5/2) silt loam, pale brown (10YR 6/3) dry; moderate medium and fine granular structure; friable; many fine and medium roots; 5 percent gravel (ironstone); extremely acid; abrupt smooth boundary.

E—3 to 7 inches; light yellowish brown (2.5Y 6/4) silt loam; moderate medium and fine granular structure; friable; many fine and medium roots; 4 percent gravel (ironstone); extremely acid; clear smooth boundary.

BE—7 to 13 inches; brownish yellow (10YR 6/6) silt loam; moderate medium and fine subangular blocky structure; friable; common medium and coarse roots; 2 percent gravel (ironstone); very strongly acid; clear wavy boundary.

Bt1—13 to 21 inches; yellowish brown (10YR 5/6) silt loam; common fine faint strong brown (7.5YR 5/6) mottles; moderate medium subangular blocky structure; friable; common medium and coarse roots; many distinct light yellowish brown (10YR 6/4) silt coatings over clay films on faces of peds; 2 percent gravel (ironstone); very strongly acid; clear wavy boundary.

Bt2—21 to 37 inches; strong brown (7.5YR 5/6) and light yellowish brown (2.5Y 6/4) silty clay loam; common fine prominent greenish gray (5GY 6/1) and distinct yellowish red (5YR 4/6) mottles; moderate fine and medium subangular blocky structure; firm; common medium and coarse roots; many prominent light yellowish brown (2.5Y 6/4) clay films on faces of peds; 2 percent gravel and cobbles (ironstone); 10 percent parachanners; very strongly acid; gradual wavy boundary.

CB—37 to 47 inches; light olive brown (2.5Y 5/4) extremely parachannery silty clay loam; many medium prominent gray (5Y 6/1) and greenish gray (5GY 6/1) and common fine distinct strong brown (7.5YR 5/6) mottles; weak medium and fine subangular blocky structure and thick platy rock structure; firm; few medium and coarse roots; 5 percent gravel and cobbles (ironstone); 60 percent parachanners; very strongly acid; gradual wavy boundary.

Cr—47 to 60 inches; olive (5Y 4/3), interbedded moderately cemented siltstone and shale bedrock; light olive gray (5Y 6/2) coatings between fragments; 5 percent gravel and cobbles (ironstone); strongly acid.

Range in Characteristics

Depth to the base of the argillic horizon: 32 to 48 inches
Depth to bedrock (paralithic contact): 40 to 60 inches
Kind of pararock fragments: Weakly or moderately cemented siltstone or shale
Kind of rock fragments: Indurated ironstone gravel and cobbles

A horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam
Reaction—extremely acid or very strongly acid
Content of rock fragments—1 to 5 percent gravel

E horizon:
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 or 4
Texture—silt loam
Reaction—extremely acid or very strongly acid
Content of rock fragments—1 to 5 percent gravel

BE or Bt horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 or 6

Chroma—4 to 6
Texture—silt loam or silty clay loam or the parachannery analogs of these textures
Reaction—extremely acid or very strongly acid
Content of rock fragments—1 to 5 percent gravel and cobbles
Content of pararock fragments—0 to 30 percent parachanners

CB or BC horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—3 to 6
Texture—the very parachannery or extremely parachannery analogs of silt loam or silty clay loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—1 to 5 percent gravel and cobbles
Content of pararock fragments—35 to 70 percent parachanners

Cr horizon:
Hue—2.5Y or 5Y
Value—4 to 6
Chroma—3 or 4

Lindside Series

Taxonomic classification: Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts

Typical Pedon

Lindside silt loam, in a nearly level area in a cultivated field; 990 feet north and 924 feet west of the southeast corner of sec. 21, T. 3 S., R. 6 E., Floyd County, Indiana; USGS Louisville West, Kentucky, topographic quadrangle; lat. 38 degrees 13 minutes 58 seconds N. and long. 85 degrees 50 minutes 58 seconds W., NAD 27 (UTM Zone 16, 600691 easting and 4232169 northing, NAD 83):

Ap—0 to 12 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium granular structure; friable; neutral; clear smooth boundary.
Bw1—12 to 22 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; neutral; gradual smooth boundary.
Bw2—22 to 37 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; moderately acid; clear smooth boundary.
Bw3—37 to 42 inches; brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; friable; common medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix and common medium faint dark grayish brown (10YR 4/2) depleted pore linings; moderately acid; clear smooth boundary.
BC—42 to 80 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; common distinct very dark gray (10YR 3/1) iron and manganese stains on faces of peds; common medium distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly acid in the upper part and neutral in the lower part.

Range in Characteristics

Depth to the base of the cambic horizon: 60 to more than 80 inches

Ap or A horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3

Texture—silt loam
Reaction—moderately acid to neutral

Bw or BC horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6 above a depth of 20 inches; 1 to 4 below this depth
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

Markland Series

Taxonomic classification: Fine, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Markland silt loam, on a slope of 46 percent in a forested area; 1,200 feet east and 1,650 feet south of the northwest corner of sec. 22, T. 5 S., R. 1 W., Perry County, Indiana; USGS Derby, Indiana, topographic quadrangle; lat. 38 degrees 04 minutes 08 seconds N. and long. 86 degrees 30 minutes 35 seconds W., NAD 27 (UTM Zone 16, 543007 easting and 4213578 northing, NAD 83):

A—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; moderate fine and medium subangular blocky structure; friable; many fine and medium roots; slightly acid; clear wavy boundary.

2Bt1—4 to 15 inches; yellowish brown (10YR 5/6) silty clay; strong medium angular blocky structure; firm; common fine and medium roots between peds; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; strongly acid; clear wavy boundary.

2Bt2—15 to 28 inches; yellowish brown (10YR 5/6) silty clay; strong medium angular blocky structure; firm; common fine and medium roots between peds; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; neutral; clear smooth boundary.

2Btk1—28 to 38 inches; yellowish brown (10YR 5/6) silty clay; strong fine subangular blocky structure; firm; few fine roots between peds; common distinct brown (10YR 5/3) clay films on faces of peds; few fine carbonate nodules; strongly effervescent; moderately alkaline; clear wavy boundary.

2Btk2—38 to 48 inches; yellowish brown (10YR 5/6) silty clay loam; strong fine subangular blocky structure; firm; few fine roots between peds; common distinct brown (10YR 5/3) clay films on faces of peds; many fine and medium carbonate nodules; strongly effervescent; moderately alkaline; clear wavy boundary.

2Btk3—48 to 59 inches; yellowish brown (10YR 5/6) silty clay loam; strong fine subangular blocky structure; firm; few fine roots between peds; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; many fine and medium carbonate nodules; strongly effervescent; moderately alkaline; clear wavy boundary.

2BCtk—59 to 80 inches; 90 percent yellowish brown (10YR 5/6) silty clay loam and 10 percent yellowish brown (10YR 5/6) silty clay; weak fine subangular blocky structure; friable; few fine roots between peds; few distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; many fine carbonate nodules; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 3 to 18 inches

Depth to carbonates: 20 to 40 inches; ranges to less than 20 inches in severely eroded areas
Depth to the base of the argillic horizon: 30 to 70 inches

A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 to 3
Texture—silt loam or silty clay loam
Reaction—strongly acid to neutral

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam or silty clay loam
Reaction—strongly acid to neutral

Bt horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam
Reaction—very strongly acid to moderately acid

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silty clay
Reaction—very strongly acid to slightly alkaline

2Btk horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silty clay
Reaction—slightly alkaline or moderately alkaline

2BCtk horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—commonly silty clay loam or silty clay and strata of silt loam or silt
Reaction—slightly alkaline or moderately alkaline

McGary Series

Taxonomic classification: Fine, mixed, active, mesic Aeric Epiaqualfs

Typical Pedon

McGary silt loam, in a nearly level area in a cultivated field; 2,050 feet east and 700 feet north of the southwest corner of sec. 24, T. 6 N., R. 7 W., Greene County, Indiana; USGS Sandborn, Indiana, topographic quadrangle; lat. 38 degrees 56 minutes 21 seconds N. and long. 87 degrees 08 minutes 30 seconds W., NAD 27 (UTM Zone 16, 487722 easting and 4310041 northing, NAD 83):

Ap—0 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; weak coarse subangular blocky structure parting to moderate fine and medium granular; friable; neutral; abrupt smooth boundary.

2Bt—11 to 15 inches; brown (10YR 5/3) silty clay; moderate medium subangular blocky structure; firm; many faint grayish brown (10YR 5/2) clay films on faces of peds; common fine distinct gray (10YR 6/1) iron depletions in the matrix; moderately acid; clear smooth boundary.

2Btg1—15 to 22 inches; grayish brown (10YR 5/2) silty clay; weak fine and medium prismatic structure parting to moderate medium angular blocky; firm; many distinct gray (10YR 5/1) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine black (10YR 2/1) iron and manganese concretions; neutral; clear smooth boundary.

2Btg2—22 to 27 inches; grayish brown (10YR 5/2) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; many distinct gray (10YR 5/1) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly effervescent in places; slightly alkaline; gradual irregular boundary.

2Btg3—27 to 42 inches; gray (10YR 5/1) silty clay; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common distinct gray (10YR 6/1) clay films on faces of peds; common fine distinct light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; few fine and medium weakly cemented carbonate nodules; slightly effervescent; slightly alkaline; clear irregular boundary.

2BCtkg—42 to 50 inches; gray (10YR 6/1) silty clay; weak coarse angular blocky structure; firm; few faint gray (10YR 5/1) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium weakly cemented carbonate nodules; strongly effervescent; moderately alkaline; gradual wavy boundary.

2Cg—50 to 60 inches; gray (10YR 6/1), stratified silty clay loam and silty clay; massive; firm; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common fine and medium weakly cemented carbonate nodules; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 0 to 20 inches
Depth to the base of the argillic horizon: 24 to 50 inches
Depth to carbonates: 22 to 56 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 4
Texture—silt loam
Reaction—moderately acid to neutral

A horizon (if it occurs):
Thickness—1 to 3 inches
Hue—10YR
Value—3 or 4
Chroma—1 to 3

2Bt, 2Btg, Bt, or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay or silty clay loam

Reaction—very strongly acid to neutral in the upper part and neutral or slightly alkaline in the lower part

2BCtkg, 2BCg, or 2BC horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay or silty clay loam
Reaction—neutral to moderately alkaline

2C or 2Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—stratified silty clay or silty clay loam and thin strata of silt loam
Reaction—slightly alkaline or moderately alkaline

Nabb Series

Taxonomic classification: Fine-silty, mixed, active, mesic Aquic Fragiudalfs

Typical Pedon

Nabb silt loam, on a slope of 3 percent in a cultivated field; 1,190 feet west and 830 feet south of the center of sec. 21, T. 4 N., R. 7 E., Scott County, Indiana; USGS Crothersville, Indiana, topographic quadrangle; lat. 38 degrees 46 minutes 12 seconds N. and long. 85 degrees 45 minutes 11 seconds W., NAD 27 (UTM Zone 16, 608328 easting and 4291998 northing, NAD 83):

Ap—0 to 7 inches; 75 percent dark yellowish brown (10YR 4/4) and 25 percent brownish yellow (10YR 6/6) silt loam, very pale brown (10YR 7/3) dry; moderate fine granular structure; friable; common very fine roots; few fine rounded black (10YR 2/1) iron and manganese concretions; strongly acid; abrupt smooth boundary.

BE—7 to 13 inches; brownish yellow (10YR 6/6) silt loam; weak medium subangular blocky structure; friable; common very fine roots; few distinct very pale brown (10YR 7/3) silt coatings on faces of peds; common fine rounded black (10YR 2/1) iron and manganese concretions; very strongly acid; clear wavy boundary.

Bt—13 to 20 inches; brownish yellow (10YR 6/6) silt loam; weak medium subangular blocky structure; friable; few very fine roots; few faint yellowish brown (10YR 5/6) clay films on faces of peds; common distinct light yellowish brown (10YR 6/4) silt coatings on faces of peds; common fine rounded black (10YR 2/1) iron and manganese concretions; few fine prominent light gray (10YR 7/2) iron depletions in the matrix; very strongly acid; clear wavy boundary.

Bt/BE—20 to 33 inches; 65 percent yellowish brown (10YR 5/4) silty clay loam (Bt); moderate medium prismatic structure parting to moderate coarse subangular blocky; firm; few very fine roots; many distinct light brownish gray (10YR 6/2) and brown (10YR 5/3) clay films on faces of peds; many distinct pale brown (10YR 6/3) clay depletions on faces of peds; common fine rounded black (10YR 2/1) iron and manganese concretions; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 35 percent light yellowish brown (10YR 6/4) silt loam (BE) krotovinas and fillings of former root channels; weak fine subangular blocky structure; friable; few very fine roots; very strongly acid; gradual wavy boundary.

2Btx/Bt—33 to 53 inches; 65 percent yellowish brown (10YR 5/8) silt loam (Btx); moderate very coarse prismatic structure parting to weak very thick platy; very firm; common prominent gray (10YR 6/1) clay films on faces of vertical peds;

brittle; 35 percent yellowish brown (10YR 5/6) silt loam (Bt); weak medium subangular blocky structure; friable; common fine prominent light gray (10YR 7/2) iron depletions in the matrix; few fine rounded black (10YR 2/1) iron and manganese concretions in both parts of the horizon; 1 percent fine and medium gravel; very strongly acid; gradual wavy boundary.

2Btx—53 to 71 inches; yellowish brown (10YR 5/8) silt loam; moderate very coarse prismatic structure; firm; few prominent gray (10YR 6/1) clay films on faces of peds; few fine rounded black (10YR 2/1) iron and manganese concretions; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 1 percent fine and medium gravel; 75 percent brittle; very strongly acid; diffuse wavy boundary.

3Btb—71 to 80 inches; strong brown (7.5YR 5/8) clay loam; moderate coarse subangular blocky structure; firm; common prominent gray (10YR 5/1) clay films on faces of peds; common medium irregular black (10YR 2/1) iron and manganese concretions; common medium prominent gray (10YR 6/1) iron depletions in the matrix; 8 percent gravel; moderately acid.

Range in Characteristics

Thickness of the loess: 60 to 90 inches; the upper 20 to 40 inches is “silty” loess of Wisconsinan age, and the lower part is an older deposit of “gritty” loess
Depth to a fragipan: 24 to 40 inches
Depth to the base of the argillic horizon: More than 80 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid or strongly acid

BE or EB horizon:
Hue—10YR
Value—5 or 6
Chroma—3 to 6
Texture—silt loam
Reaction—very strongly acid or strongly acid; ranges to neutral in limed areas

Bt or Bt/BE horizon:
Hue—10YR
Value—5 or 6
Chroma—4 to 6
Texture—silt loam or silty clay loam in the Bt part; silt loam in the BE part
Reaction—extremely acid to strongly acid

2Btx/Bt or 2Btx horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—4 to 8
Texture—silt loam or silty clay loam

Reaction—extremely acid to strongly acid
Content of rock fragments—1 or 2 percent fine or medium gravel

3Btb horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—6 to 8; chroma of 2 in some pedons with hue of 10YR and value of 6
Texture—commonly clay loam; less commonly loam
Reaction—strongly acid to neutral
Content of rock fragments—4 to 10 percent gravel

Navilleton Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Paleudalfs

Typical Pedon

Navilleton silt loam (fig. 7), on a slope of 7 percent in a pasture; 2,100 feet west and 540 feet south of the northeast corner of sec. 36, T. 1 S., R. 4 E., Floyd County, Indiana; USGS Palmyra, Indiana, topographic quadrangle; lat. 38 degrees 23 minutes 16 seconds N. and long. 86 degrees 01 minute 18 seconds W., NAD 27 (UTM Zone 16, 585444 easting and 4249300 northing, NAD 83):

Ap1—0 to 5 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium subangular blocky structure parting to moderate medium granular; very friable; strongly acid; clear smooth boundary.

Ap2—5 to 8 inches; 70 percent dark yellowish brown (10YR 4/4) and 30 percent strong brown (7.5YR 5/6) silt loam; moderate fine and medium subangular blocky structure parting to weak fine and medium granular; very friable; common fine rounded black (10YR 2/1) iron and manganese concretions throughout; moderately acid; clear smooth boundary.

Bt1—8 to 12 inches; strong brown (7.5YR 5/6) silt loam; moderate fine subangular blocky structure; friable; common distinct strong brown (7.5YR 4/6) clay films on faces of peds; few prominent dark yellowish brown (10YR 4/4) organic coatings on faces of peds and in pores; common fine rounded black (10YR 2/1) iron and manganese concretions throughout; moderately acid; clear smooth boundary.

Bt2—12 to 25 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate fine and medium subangular blocky structure; friable; many distinct strong brown (7.5YR 4/6) clay films on faces of peds; common fine rounded black (10YR 2/1) iron and manganese concretions throughout; moderately acid; clear smooth boundary.

Bt3—25 to 35 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate fine subangular blocky structure; friable; many distinct light yellowish brown (10YR 6/4) silt coatings on faces of peds; common distinct strong brown (7.5YR 4/6) clay films on faces of peds; common fine rounded black (10YR 2/1) iron and manganese concretions throughout; moderately acid; clear wavy boundary.

2Bt4—35 to 43 inches; strong brown (7.5YR 4/6) silty clay; moderate fine subangular blocky structure; friable; common prominent pale brown (10YR 6/3) and brown (7.5YR 4/4) clay films on faces of peds; common fine rounded black (10YR 2/1) iron and manganese concretions throughout; 3 percent subrounded chert gravel; strongly acid; clear wavy boundary.

2Bt5—43 to 54 inches; yellowish red (5YR 5/6) clay; moderate very fine and fine angular blocky structure; firm; many prominent yellowish red (5YR 4/6) and few prominent brown (10YR 5/3) clay films on faces of peds; common fine and medium rounded black (10YR 2/1) iron and manganese concretions throughout; 3 percent angular chert gravel; neutral; clear wavy boundary.

Figure 7.—Profile of a Navilleton soil.

2Bt6—54 to 61 inches; yellowish red (5YR 4/6) clay; moderate very fine angular blocky structure; firm; many distinct yellowish red (5YR 4/6) clay films on faces of peds; common fine and medium rounded black (10YR 2/1) iron and manganese concretions throughout; 3 percent angular chert gravel; neutral; clear wavy boundary.

2Bt7—61 to 72 inches; strong brown (7.5YR 4/6) silty clay; moderate fine angular blocky structure; firm; many prominent dark yellowish brown (10YR 4/4) and few prominent very dark grayish brown (10YR 3/2) and strong brown (7.5YR 5/6) clay films on faces of peds; 3 percent angular chert gravel and 3 percent limestone

flagstones; slightly alkaline; slightly effervescent from 71 to 72 inches; abrupt wavy boundary.
2R—72 to 80 inches; indurated limestone bedrock.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Depth to the base of the argillic horizon and depth to bedrock (lithic contact): 60 to more than 100 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Thickness—2 to 4 inches
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam
Reaction—very strongly acid or strongly acid

BE horizon (if it occurs):
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid or strongly acid; ranges to neutral in the upper part in limed areas

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid; ranges to neutral in the upper part in limed areas

2Bt horizon:
Hue—2.5YR to 7.5YR
Value—4 or 5
Chroma—4 to 8
Texture—silty clay or clay
Reaction—very strongly acid or strongly acid in the upper part; ranges to slightly alkaline in the lower part
Content of rock fragments—0 to 14 percent chert gravel and cobbles; a few flagstones, stones, or boulders

Newark Series

Taxonomic classification: Fine-silty, mixed, active, nonacid, mesic Fluventic Endoaquepts

Typical Pedon

Newark silt loam, in a nearly level area in a cultivated field; 1,000 feet south of the railroad and 400 feet west of Willett Road; Daviess County, Kentucky; USGS Owensboro West, Kentucky, topographic quadrangle; lat. 37 degrees 48 minutes 18.6 seconds N. and long. 87 degrees 11 minutes 18.1 seconds W., NAD 27 (UTM Zone 16, 483758 easting and 4184394 northing, NAD 83):

Ap—0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; very friable; many fine roots; slightly acid; abrupt smooth boundary.

Bw—9 to 15 inches; brown (10YR 5/3) silt loam; weak fine granular structure; very friable; few fine roots; many fine and medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; few small flakes of mica; slightly acid; gradual smooth boundary.

Bg—15 to 32 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium subangular blocky structure; very friable; many medium distinct brown (10YR 4/3) masses of iron accumulation in the matrix; few small flakes of mica; slightly acid; gradual smooth boundary.

Cg—32 to 52 inches; light brownish gray (2.5Y 6/2) silt loam; massive; very friable; common coarse distinct yellowish brown (10YR 5/4) and common medium faint brown (10YR 5/3) masses of iron accumulation in the matrix; few weakly cemented, irregularly shaped black (N 2.5/) and dark brown (7.5YR 3/3) iron and manganese nodules; common medium faint light gray (10YR 7/2) iron depletions in the matrix; few small flakes of mica; slightly acid; gradual smooth boundary.

C—52 to 60 inches; brown (10YR 4/3) silt loam with thin strata of loam and silty clay loam; massive; very friable; few weakly cemented, irregularly shaped black (N 2.5/) and dark brown (7.5YR 3/3) iron and manganese nodules; many medium and coarse distinct gray (10YR 6/1) iron depletions in the matrix; few small flakes of mica; slightly acid.

Range in Characteristics

Depth to the base of the cambic horizon: 40 to more than 80 inches

Ap horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—moderately acid to neutral

Bw horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—3 or 4
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

Bg or BCg horizon:
Hue—10YR, 2.5Y, or N
Value—4 to 7
Chroma—0 to 2
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

Cg horizon:
Hue—10YR, 2.5Y, or N

Value—4 to 7
Chroma—0 to 2
Texture—silt loam or silty clay loam; thin strata of loam or fine sandy loam included below a depth of 40 inches
Reaction—moderately acid to slightly alkaline

C horizon (if it occurs):
Hue—10YR, 2.5Y, or N
Value—4 to 7
Chroma—0 to 4
Texture—silt loam or silty clay loam; thin strata of loam or fine sandy loam included below a depth of 40 inches
Reaction—moderately acid to slightly alkaline

Pekin Series

Taxonomic classification: Fine-silty, mixed, active, mesic Aquic Fragiudults
Taxadjunct features: The Pekin soils in this survey area do not have a subhorizon with a fragipan that has vertical streaks with a mean horizontal dimension of 4 inches or more. This difference, however, does not alter the usefulness or behavior of the soils. These soils are classified as fine-silty, mixed, active, mesic Fragiaquic Hapludults.

Typical Pedon

Pekin silt loam, on a slope of 3 percent in a cultivated field; 2,300 feet east and 2,100 feet south of the northwest corner of sec. 23, T. 2 S., R. 5 E., Floyd County, Indiana; USGS Georgetown, Indiana, topographic quadrangle; lat. 38 degrees 19 minutes 30 seconds N. and long. 85 degrees 55 minutes 48 seconds W., NAD 27 (UTM Zone 16, 593530 easting and 4242423 northing, NAD 83):

Ap—0 to 10 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary.
Bt1—10 to 16 inches; yellowish brown (10YR 5/4) silt loam; moderate fine subangular blocky structure; friable; few faint yellowish brown (10YR 5/4) clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—16 to 24 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and fine subangular blocky structure; friable; common distinct yellowish brown (10YR 5/6) clay films on faces of peds; common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; strongly acid; clear smooth boundary.
Btx1—24 to 29 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine vesicular pores; many distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; many medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 35 percent brittle; strongly acid; gradual wavy boundary.
Btx2—29 to 45 inches; yellowish brown (10YR 5/6) silt loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; few fine vesicular pores; many prominent grayish brown (10YR 5/2) and common distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; many medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; 45 percent brittle; extremely acid; gradual wavy boundary.
C—45 to 60 inches; yellowish brown (10YR 5/6) silt loam; massive; firm; many medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; very strongly acid.

Range in Characteristics

Thickness of the loess: 0 to 40 inches
Depth to a layer with fragic soil properties: 20 to 38 inches; 10 to 20 inches in pedons in severely eroded areas
Depth to the base of the argillic horizon: 40 to 70 inches

Ap horizon:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid or strongly acid

Bt horizon:
Hue—10YR
Value—5 or 6
Chroma—3 to 6
Texture—silt loam or silty clay loam
Reaction—commonly very strongly acid or strongly acid; ranges to neutral in the upper part

Btx or Btxg horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—2 to 8
Texture—silt loam or silty clay loam
Reaction—extremely acid to strongly acid
Content of rock fragments—0 to 7 percent gravel

C or Cg horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—2 to 6
Texture—commonly silt loam, silty clay loam, or loam; less commonly sandy loam or fine sandy loam
Reaction—very strongly acid to neutral
Content of rock fragments—0 to 14 percent gravel

Peoga Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fragic Epiaqualfs

Typical Pedon

Peoga silt loam, on a slope of 0.5 percent in a cultivated field; 1,810 feet east and 645 feet north of the center of sec. 18, T. 4 N., R. 7 E., Scott County, Indiana; USGS Crothersville, Indiana, topographic quadrangle; lat. 38 degrees 47 minutes 18 seconds N. and long. 85 degrees 46 minutes 45 seconds W., NAD 27 (UTM Zone 16, 606032 easting and 423788 northing, NAD 83):

Ap—0 to 8 inches; light brownish gray (10YR 6/2) silt loam, light gray (10YR 7/1) dry; weak coarse subangular blocky structure parting to moderate medium granular; friable; few very fine roots; many fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; common prominent yellowish red (5YR 5/6) pore linings; common prominent black (N 2.5/) iron and manganese stains; krotovinas filled with brown (10YR 5/3) material; moderately acid; abrupt smooth boundary.

BEg—8 to 19 inches; light gray (10YR 7/2) silt loam; weak medium subangular blocky structure; friable; few very fine roots; common fine prominent reddish yellow (7.5YR 6/8) and common medium prominent brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; common prominent black (N 2.5/) iron and manganese stains in pores and root channels; krotovinas filled with brown (10YR 5/3) material; very strongly acid; gradual wavy boundary.

Btg1—19 to 27 inches; light gray (10YR 7/2) silt loam; weak coarse prismatic structure parting to weak medium subangular blocky; friable; few very fine roots; common distinct light brownish gray (10YR 6/2) clay films on vertical faces of peds; common fine prominent reddish yellow (7.5YR 6/8) and common medium prominent brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; common prominent black (N 2.5/) iron and manganese stains on vertical faces of peds; krotovinas filled with brown (10YR 5/3) material; very strongly acid; gradual wavy boundary.

Btg2—27 to 36 inches; light gray (10YR 7/2) silt loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; friable; few very fine roots between peds; many distinct light brownish gray (10YR 6/2) clay films on vertical faces of peds; common fine prominent reddish yellow (7.5YR 6/8) and common medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; common prominent black (N 2.5/) iron and manganese stains on vertical faces of peds; krotovinas filled with brown (10YR 5/3) material; very strongly acid; gradual irregular boundary.

Btgx1—36 to 58 inches; 65 percent light gray (10YR 7/2) and 35 percent strong brown (7.5YR 5/6) silt loam; moderate coarse prismatic structure; firm; many distinct light brownish gray (10YR 6/2) clay films on vertical faces of peds; common medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; common prominent black (N 2.5/) iron and manganese stains on vertical faces of peds; 35 percent brittle; very strongly acid; gradual wavy boundary.

Btgx2—58 to 76 inches; 65 percent light gray (10YR 7/2) and 35 percent yellowish brown (10YR 5/6) silt loam; moderate coarse prismatic structure; firm; common prominent light brownish gray (10YR 6/2) clay films on vertical faces of peds; 35 percent brittle; strongly acid; diffuse wavy boundary.

2Btb—76 to 80 inches; strong brown (7.5YR 5/6) silty clay loam; moderate coarse subangular blocky structure; firm; common distinct light brownish gray (10YR 6/2) clay films on vertical and horizontal faces of peds; few fine faint yellowish red (5YR 5/6) masses of iron accumulation in the matrix; common coarse irregular iron and manganese concretions; many medium prominent light gray (10YR 7/2) iron depletions in the matrix; strongly acid.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Depth to a layer with fragic soil properties: 30 to 45 inches
Depth to the base of the argillic horizon: 55 to more than 80 inches

Ap horizon:
Hue—10YR
Value—4 to 6
Chroma—1 to 3

Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam
Reaction—very strongly acid or strongly acid

Eg, EBg, or BEg horizon:
Hue—10YR or 2.5Y
Value—5 to 7
Chroma—1 or 2
Texture—silt loam
Reaction—extremely acid to strongly acid

Btg, Bt, Btxg, or Btx horizon:
Hue—7.5YR to 5Y
Value—5 to 7
Chroma—1 to 6
Texture—silt loam or silty clay loam; loam or clay loam in the lower part
Reaction—extremely acid to strongly acid; ranges to moderately acid in the lower part
Content of rock fragments—0 to 2 percent gravel

2Btb or 2Btg horizon:
Hue—7.5YR or 10YR
Value—5
Chroma—1 to 6
Texture—silt loam, silty clay loam, clay loam, or loam
Reaction—strongly acid to neutral
Content of rock fragments—0 to 2 percent gravel

Rarden Series

Taxonomic classification: Fine, mixed, active, mesic Aquultic Hapludalfs

Typical Pedon

Rarden silty clay loam, on a slope of 7 percent in a cultivated field; 1,040 feet east and 560 feet north of the southwest corner of sec. 9, T. 2 N., R. 7 E., Scott County, Indiana; USGS Scottsburg, Indiana, topographic quadrangle; lat. 38 degrees 37 minutes 19 seconds N. and long. 85 degrees 45 minutes 10 seconds W., NAD 27 (UTM Zone 16, 608575 easting and 4275568 northing, NAD 83):

Ap—0 to 6 inches; 80 percent dark yellowish brown (10YR 4/4) and 20 percent yellowish red (5YR 4/6) silty clay loam, pale brown (10YR 6/3) and yellowish red (5YR 5/6) dry; weak fine and medium subangular blocky structure; firm; common very fine and fine and few medium roots; slightly acid; clear wavy boundary.

2Bt1—6 to 14 inches; yellowish red (5YR 4/6) silty clay; moderate fine subangular blocky structure; firm; common very fine and fine roots between peds; many distinct strong brown (7.5YR 5/6) clay films on faces of peds; very strongly acid; clear wavy boundary.

2Bt2—14 to 21 inches; strong brown (7.5YR 5/6) silty clay; moderate fine and medium angular blocky structure; firm; few very fine and fine roots between peds; many prominent light olive gray (5Y 6/2) and common distinct yellowish red (5YR 5/6) clay films on faces of peds; common fine prominent light olive gray (5Y 6/2) iron depletions in the matrix; extremely acid; clear wavy boundary.

2Bt3—21 to 28 inches; strong brown (7.5YR 5/6) silty clay; weak fine and medium angular blocky structure; firm; few very fine and fine roots between peds; many prominent light olive gray (5Y 6/2) clay films on faces of peds; many fine prominent light olive gray (5Y 6/2) iron depletions in the matrix; extremely acid; gradual wavy boundary.

2BC—28 to 37 inches; light olive brown (2.5Y 5/4) extremely parachannery silty clay; moderate thin and medium platy structure; firm; few very fine and fine roots between peds; few prominent white (10YR 8/1) barite coatings on faces of peds; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; many fine and medium prominent gray (5Y 6/1) iron depletions in the matrix; common fine and medium platy barite masses; 60 percent weakly cemented parachanners; extremely acid; gradual wavy boundary.

2Cr1—37 to 51 inches; 80 percent olive (5Y 5/3) and 20 percent olive brown (2.5Y 4/4), weakly cemented, fractured shale bedrock; very firm; few very fine roots between shale fragments; common medium distinct light olive gray (5Y 6/2) pore linings between shale fragments; very strongly acid; gradual wavy boundary.

2Cr2—51 to 60 inches; olive (5Y 4/3), moderately cemented, fractured shale bedrock; very firm; common medium faint light olive gray (5Y 6/2) pore linings between shale fragments; slightly acid.

Range in Characteristics

Thickness of the loess: Less than 14 inches
Depth to the base of the argillic horizon: 20 to 40 inches
Depth to bedrock (paralithic contact): 20 to 40 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam
Reaction—extremely acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam
Reaction—extremely acid or very strongly acid

Bt horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—6 to 8
Texture—silty clay loam
Reaction—extremely acid to strongly acid

2Bt horizon:
Hue—2.5YR to 10YR
Value—4 or 5
Chroma—4 to 8
Texture—commonly silty clay; less commonly clay or silty clay loam
Reaction—extremely acid to strongly acid
Content of rock fragments—0 to 5 percent gravel (ironstone)
Content of pararock fragments—0 to 14 percent parachanners

2BC or 2CB horizon:
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—4 to 6
Texture—the parachannery to extremely parachannery analogs of silty clay or silty clay loam
Reaction—extremely acid to strongly acid
Content of rock fragments—0 to 5 percent gravel (ironstone)
Content of pararock fragments—30 to 70 percent parachanners

2Cr horizon:
Hue—2.5Y or 5Y
Value—4 to 6
Chroma—3 or 4

Sciotoville Series

Taxonomic classification: Fine-silty, mixed, active, mesic Aquic Fragiudalfs
Taxadjunct features: The Sciotoville soils in this survey area do not have a subhorizon with a fragipan that has vertical streaks with a mean horizontal dimension of 4 inches or more. This difference, however, does not alter the usefulness or behavior of the soils. These soils are classified as fine-silty, mixed, active, mesic Fragiaquic Hapludalfs.

Typical Pedon

Sciotoville silt loam, on a slope of 1 percent in a cultivated field; 2,150 feet west and 1,200 feet south of the northeast corner of sec. 29, T. 7 S., R. 2 W., Perry County, Indiana; USGS Cloverport, Indiana, topographic quadrangle; lat. 38 degrees 52 minutes 28 seconds N. and long. 85 degrees 38 minutes 54 seconds W., NAD 27 (UTM Zone 16, 530911 easting and 4191978 northing, NAD 83):

Ap—0 to 9 inches; dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; moderate medium granular structure; friable; many fine roots; 1 percent rounded quartzite gravel; strongly acid; abrupt smooth boundary.
Bt1—9 to 15 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; common fine roots between peds; common faint strong brown (7.5YR 5/6) clay films on faces of peds; 1 percent rounded quartzite gravel; strongly acid; clear wavy boundary.
Bt2—15 to 23 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; common fine roots between peds; common faint strong brown (7.5YR 5/6) clay films on faces of peds; common fine and medium prominent light gray (10YR 7/2) iron depletions in the matrix; 1 percent rounded quartzite gravel; very strongly acid; clear wavy boundary.
Bt/Eg—23 to 27 inches; 60 percent strong brown (7.5YR 4/6) silt loam (Bt); weak medium prismatic structure parting to strong medium subangular blocky; firm; common distinct brown (7.5YR 4/4) clay films on faces of peds; 40 percent light brownish gray (10YR 6/2) silt loam (Eg); common fine faint pale brown (10YR 6/3) mottles; weak fine subangular blocky structure; friable; 1 percent rounded quartzite gravel; very strongly acid; clear wavy boundary.
Btx1—27 to 32 inches; strong brown (7.5YR 4/6) silty clay loam; moderate medium and coarse prismatic structure; very firm; many distinct brown (7.5YR 4/4) clay films on faces of peds; many prominent light gray (10YR 7/2) clay depletions on faces of peds; 1 percent rounded quartzite gravel; 75 percent brittle; very strongly acid; clear wavy boundary.

Btx2—32 to 41 inches; strong brown (7.5YR 4/6) clay loam; moderate medium and coarse prismatic structure; very firm; many distinct brown (7.5YR 4/4) clay films on faces of peds; many prominent light gray (10YR 7/2) clay depletions on faces of peds; 1 percent rounded quartzite gravel; 75 percent brittle; very strongly acid; clear wavy boundary.

Btx3—41 to 50 inches; strong brown (7.5YR 4/6) loam; moderate medium and coarse prismatic structure; very firm; many distinct brown (7.5YR 4/4) clay films on faces of peds; many prominent light gray (10YR 7/2) clay depletions on faces of peds; 1 percent rounded quartzite gravel; brittle; very strongly acid; clear wavy boundary.

B´t—50 to 80 inches; strong brown (7.5YR 4/6) loam; moderate medium subangular blocky structure; friable; many distinct brown (7.5YR 4/4) clay films on faces of peds; 2 percent rounded quartzite gravel; strongly acid.

Range in Characteristics

Depth to a layer with fragic soil properties: 20 to 38 inches
Depth to the base of the argillic horizon: 60 to more than 80 inches

Ap horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—strongly acid to neutral
Content of rock fragments—0 to 2 percent gravel

A horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—strongly acid or moderately acid
Content of rock fragments—0 to 2 percent gravel

Bt or Bt/Eg horizon:
Hue—7.5YR or 10YR (Bt); 10YR (E)
Value—4 or 5 (Bt); 5 to 7 (E)
Chroma—3 to 6 with redoximorphic depletions (Bt); 1 or 2 (E)
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 5 percent gravel

Btx horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6 with redoximorphic depletions
Texture—silt loam, silty clay loam, loam, or clay loam
Reaction—very strongly acid or strongly acid
Content of rock fragments—0 to 5 percent gravel

B´t or BC horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6 with redoximorphic depletions
Texture—commonly silt loam, silty clay loam, or loam; less commonly clay loam or sandy loam
Reaction—very strongly acid to slightly acid
Content of rock fragments—0 to 14 percent gravel

Scottsburg Series

Taxonomic classification: Fine-silty, mixed, semiactive, mesic Aquic Hapludults

Typical Pedon

Scottsburg silt loam, on a slope of 3 percent in a cultivated field; 570 feet east and 570 feet north of the southwest corner of sec. 28, T. 4 N., R. 7 E., Scott County, Indiana; USGS Crothersville, Indiana, topographic quadrangle; lat. 38 degrees 45 minutes 08 seconds N. and long. 85 degrees 45 minutes 22 seconds W., NAD 27 (UTM Zone 16, 608089 easting and 4290021 northing, NAD 83):

Ap—0 to 8 inches; 80 percent brown (10YR 4/3) and 20 percent yellowish brown (10YR 5/6) silt loam, pale brown (10YR 6/3) and very pale brown (10YR 7/4) dry; weak medium subangular blocky structure parting to moderate medium granular; friable; common very fine roots; strongly acid; abrupt smooth boundary.

Bt1—8 to 19 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct strong brown (7.5YR 4/6) clay films on faces of peds; common distinct brown (10YR 4/3) organic coatings in root channels and pores; strongly acid; gradual wavy boundary.

Bt2—19 to 27 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt3—27 to 31 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; few very fine roots; common distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; common fine distinct brown (10YR 5/3) iron depletions in the matrix; very strongly acid; clear wavy boundary.

2Btx1—31 to 43 inches; brown (10YR 5/3) silty clay loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots between peds; common distinct grayish brown (10YR 5/2) clay films on vertical faces of peds; common fine prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 4 percent gravel; 45 percent brittle; extremely acid; gradual wavy boundary.

2Btx2—43 to 53 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; many distinct gray (10YR 5/1) clay films on vertical faces of peds; common fine iron and manganese concretions; few fine prominent grayish brown (10YR 5/2) iron depletions in the matrix; 3 percent gravel; 45 percent brittle; extremely acid; clear wavy boundary.

3BCg—53 to 61 inches; grayish brown (10YR 5/2) parachannery silty clay; weak thin platy structure; firm; common medium prominent yellowish brown (10YR 5/6) and many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 20 percent parachanners (shale); extremely acid; clear wavy boundary.

3Cr—61 to 67 inches; very dark grayish brown (10YR 3/2) and dark brown (7.5YR 4/4), fractured, weakly cemented and moderately cemented shale; extremely acid; clear wavy boundary.

3R—67 to 80 inches; very dark gray (5YR 3/1), very strongly cemented, fissile black shale.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Depth to a layer with fragic soil properties: 24 to 36 inches
Depth to the base of the argillic horizon: 48 to 60 inches

Depth to bedrock (paralithic contact): 60 to 72 inches
Depth to bedrock (lithic contact): 64 to 80 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—4
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid or strongly acid

Bt horizon:
Hue—10YR
Value—5 or 6
Chroma—4 to 6
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid; ranges to slightly acid in the upper part in limed areas

2Btx horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 8
Texture—silt loam or silty clay loam
Reaction—extremely acid or very strongly acid

3BC or 3BCg horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 8
Texture—parachannery silty clay loam or parachannery silty clay
Reaction—extremely acid or very strongly acid
Content of pararock fragments—15 to 34 percent parachanners

3Cr horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—1 to 4

Shircliff Series

Taxonomic classification: Fine, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon

Shircliff silt loam, on a slope of 3 percent in a cultivated field; 400 feet east and 750 feet north of the southwest corner of sec. 13, T. 5 S., R. 1 W., Perry County, Indiana; USGS Alton, Indiana, topographic quadrangle; lat. 38 degrees 04 minutes 28 seconds N. and long. 86 degrees 28 minutes 05 seconds W., NAD 27 (UTM Zone 16, 546658 easting and 4214214 northing, NAD 83):

Ap—0 to 8 inches; 90 percent brown (10YR 5/3) and 10 percent yellowish brown (10YR 5/6) silt loam, very pale brown (10YR 7/3 and 7/4) dry; weak fine subangular blocky structure; friable; many fine roots; strongly acid; abrupt smooth boundary.

Bt1—8 to 19 inches; yellowish brown (10YR 5/6) silty clay loam; strong fine subangular blocky structure; friable; common fine roots; common distinct dark yellowish brown (10YR 4/6) clay films on faces of peds; many distinct light yellowish brown (10YR 6/4) silt coatings on faces of peds; very strongly acid; clear wavy boundary.

2Bt2—19 to 28 inches; strong brown (7.5YR 5/6) silty clay; moderate medium subangular blocky structure; firm; common fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; few distinct light yellowish brown (10YR 6/4) silt coatings on faces of peds; common medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix; very strongly acid; clear wavy boundary.

2Bt3—28 to 43 inches; dark yellowish brown (10YR 4/4) silty clay; strong coarse angular blocky structure; very firm; few fine roots; many prominent light brownish gray (10YR 6/2) clay films on faces of peds; many medium distinct gray (10YR 6/1) iron depletions in the matrix; moderately acid; clear wavy boundary.

2Btk1—43 to 53 inches; dark yellowish brown (10YR 4/4) silty clay; strong coarse angular blocky structure; very firm; few fine roots; common distinct brown (10YR 5/3) and few distinct light brownish gray (10YR 6/2) clay films on faces of peds; many medium distinct gray (10YR 6/1) iron depletions in the matrix; few medium irregular calcium carbonate nodules; slightly effervescent; moderately alkaline; clear wavy boundary.

2Btk2—53 to 59 inches; brown (10YR 5/3) silty clay loam; moderate coarse subangular blocky structure; very firm; few fine roots; common faint brown (10YR 5/3) and few prominent light brownish gray (10YR 6/2) clay films on faces of peds; many coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine faint light brownish gray (10YR 6/2) iron depletions in the matrix; few medium irregular calcium carbonate nodules; strongly effervescent; moderately alkaline; clear wavy boundary.

2Btk3—59 to 80 inches; dark yellowish brown (10YR 4/4) silty clay; strong coarse subangular blocky structure; very firm; common distinct brown (10YR 5/3) and few prominent gray (10YR 6/1) clay films on faces of peds; common fine distinct gray (10YR 6/1) iron depletions in the matrix; few medium irregular calcium carbonate nodules; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 6 to 20 inches
Depth to carbonates: 30 to 60 inches
Depth to the base of the argillic horizon: 40 to more than 80 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam
Reaction—strongly acid to neutral

A horizon (if it occurs):
Thickness—less than 5 inches
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam
Reaction—strongly acid or moderately acid

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam
Reaction—very strongly acid to moderately acid

2Bt horizon:
Hue—7.5YR to 2.5Y
Value—4 or 5
Chroma—4 to 6 with redoximorphic depletions
Texture—silty clay loam or silty clay
Reaction—very strongly acid to slightly alkaline

2Btk, 2BCk, 2Btkg, or 2BCkg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—commonly silty clay or silty clay loam; less commonly silt loam
Reaction—slightly alkaline or moderately alkaline

Spickert Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Fragiudults

Typical Pedon

Spickert silt loam (fig. 8), on a slope of 9 percent in a forested area; 1,190 feet east and 1,320 feet south of the center of sec. 28, T. 7 N., R. 2 E., Jackson County, Indiana; USGS Elkinsville, Indiana, topographic quadrangle; lat. 39 degrees 00 minutes 34 seconds N. and long. 86 degrees 18 minutes 17 seconds W., NAD 27 (UTM Zone 16, 560197 easting and 4318060 northing, NAD 83):

Oi—0 to 2 inches; partially decomposed leaves from mixed deciduous trees.

Ap—2 to 7 inches; dark yellowish brown (10YR 4/4) silt loam, light yellowish brown (10YR 6/4) dry; moderate medium granular structure; friable; many fine and medium and few coarse roots; very strongly acid; clear smooth boundary.

Bt1—7 to 21 inches; strong brown (7.5YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; common fine and medium roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; common fine black (10YR 2/1) iron and manganese concretions; very strongly acid; clear wavy boundary.

Bt2—21 to 28 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common distinct strong brown (7.5YR 5/6) clay films on faces of peds; few prominent pale yellow (2.5Y 7/4) silt coatings on faces of peds; common fine black (10YR 2/1) iron and manganese concretions; very strongly acid; clear wavy boundary.

Bt3—28 to 31 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; common fine and medium roots; common distinct strong brown (7.5YR 5/6) clay films on faces of peds; common fine black (10YR 2/1) iron and manganese concretions; many distinct light gray (10YR 7/1) clay depletions on faces of peds; very strongly acid; clear wavy boundary.

2Btx1—31 to 49 inches; yellowish brown (10YR 5/6) silt loam; moderate very coarse prismatic structure; very firm; few fine roots between peds; common fine vesicular pores; many prominent gray (10YR 6/1) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese concretions; few prominent light gray (10YR 7/1)

Figure 8.—Profile of a Spickert soil (terrace phase).

clay depletions on faces of peds; 2 percent channers; brittle; very strongly acid; gradual wavy boundary.

2Btx2—49 to 58 inches; brownish yellow (10YR 6/6) silt loam; weak medium and coarse subangular blocky structure; firm; few distinct yellowish brown (10YR 5/4) clay films on faces of peds; few prominent light gray (2.5Y 7/2) iron depletions in the matrix; 5 percent channers; brittle; very strongly acid; gradual wavy boundary.

2BC—58 to 64 inches; brownish yellow (10YR 6/6) channery silt loam; massive; friable; common medium prominent light gray (2.5Y 7/2) iron depletions in the matrix; 20 percent channers; extremely acid; clear wavy boundary.

2R—64 to 80 inches; fractured, very strongly cemented siltstone.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Depth to a fragipan: 20 to 36 inches
Depth to the base of the argillic horizon: 40 to 80 inches
Depth to bedrock (lithic contact): 50 to 90 inches

Ap horizon:
Hue—10YR
Value—4 to 6
Chroma—3 to 6
Texture—silt loam
Reaction—extremely acid to neutral

A horizon (if it occurs):
Thickness—2 to 4 inches
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam
Reaction—extremely acid or very strongly acid

E or EB horizon (if it occurs):
Hue—10YR
Value—5 or 6
Chroma—4 to 6
Texture—silt loam
Reaction—extremely acid or very strongly acid

BE horizon (if it occurs):
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam
Reaction—extremely acid or very strongly acid; ranges to slightly acid in limed areas

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—4 to 8
Texture—silt loam or silty clay loam
Reaction—extremely acid or very strongly acid; ranges to slightly acid in the upper part in limed areas

2Btx horizon:
Hue—10YR
Value—4 to 6
Chroma—4 to 6
Texture—silt loam or silty clay loam
Reaction—extremely acid or very strongly acid
Content of rock fragments—1 to 14 percent channers

2BC or 2CB horizon or 2Bt horizon (if it occurs):
Hue—10YR or 2.5Y
Value—5 or 6
Chroma—3 to 6
Texture—silt loam or silty clay loam or the channery or very channery analogs of these textures
Reaction—extremely acid or very strongly acid
Content of rock fragments—10 to 50 percent channers

Steff Series

Taxonomic classification: Fine-silty, mixed, active, mesic Fluvaquentic Dystrudepts

Typical Pedon

Steff silt loam, on a slope of 1 percent in a cultivated field; 595 feet west and 65 feet north of the center of sec. 32, T. 3 N., R. 7 E., Scott County, Indiana; USGS Scottsburg, Indiana, topographic quadrangle; lat. 38 degrees 39 minutes 23 seconds N. and long. 85 degrees 46 minutes 04 seconds W., NAD 27 (UTM Zone 16, 607218 easting and 4279373 northing, NAD 83):

Ap—0 to 11 inches; yellowish brown (10YR 5/4) silt loam, very pale brown (10YR 7/4) dry; weak coarse subangular blocky structure parting to moderate medium granular; friable; common very fine and fine and few medium roots; moderately acid; abrupt smooth boundary.

Bw1—11 to 23 inches; yellowish brown (10YR 5/6) silt loam; weak very coarse prismatic structure; friable; common very fine and fine roots; common distinct yellowish brown (10YR 5/4) organic coatings on faces of peds; few prominent strong brown (7.5YR 5/8) iron stains on faces of peds; common fine rounded iron and manganese concretions; common fine distinct pale brown (10YR 6/3) and few fine prominent light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; clear wavy boundary.

Bw2—23 to 41 inches; yellowish brown (10YR 5/6) silt loam; weak very coarse prismatic structure; friable; few very fine roots; few distinct yellowish brown (10YR 5/4) organic coatings on faces of peds; common distinct strong brown (7.5YR 5/8) iron stains on faces of peds; many medium prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; very strongly acid; gradual wavy boundary.

C—41 to 60 inches; yellowish brown (10YR 5/6) silt loam; massive; friable; common faint strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common faint strong brown (7.5YR 4/6) iron stains lining pores; many medium prominent light brownish gray (2.5Y 6/2) iron depletions in the matrix; strongly acid.

Range in Characteristics

Depth to the base of the cambic horizon: 24 to 50 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid or strongly acid

B or Bg horizon:
Hue—7.5YR or 10YR
Value—5 or 6
Chroma—2 to 6
Texture—commonly silt loam; less commonly silty clay loam
Reaction—commonly very strongly acid or strongly acid; less commonly ranges to slightly acid in the upper part

C or Cg horizon:
Hue—10YR
Value—5 or 6
Chroma—2 to 6
Texture—silt loam; strata of sandy loam or loam included below a depth of 40 inches
Reaction—very strongly acid or strongly acid

Stendal Series

Taxonomic classification: Fine-silty, mixed, active, acid, mesic Fluventic Endoaquepts

Typical Pedon

Stendal silt loam, on a slope of 0.5 percent in a cultivated field; 1,400 feet north and 395 feet west of the southeast corner of sec. 29, T. 3 N., R. 7 E., Scott County, Indiana; USGS Scottsburg, Indiana, topographic quadrangle; lat. 38 degrees 40 minutes 03 seconds N. and long. 85 degrees 45 minutes 27 seconds W., NAD 27 (UTM Zone 16, 608096 easting and 4280618 northing, NAD 83):

Ap—0 to 8 inches; yellowish brown (10YR 5/4) silt loam, very pale brown (10YR 7/4) dry; weak medium subangular blocky structure parting to moderate medium granular; friable; common very fine roots; slightly acid; abrupt smooth boundary.

Bw—8 to 17 inches; light yellowish brown (10YR 6/4) silt loam; weak coarse prismatic structure; friable; common very fine roots; common distinct yellowish brown (10YR 5/4) organic coatings on faces of peds; common fine prominent brownish yellow (10YR 6/8) masses of iron accumulation in the matrix; few fine rounded black (10YR 2/1) iron and manganese concretions; many medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; very strongly acid; gradual wavy boundary.

Bg—17 to 40 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; few distinct yellowish brown (10YR 5/4) organic coatings on vertical faces of peds; many medium distinct light yellowish brown (10YR 6/4) and common prominent yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common fine rounded and few medium irregular iron and manganese concretions; very strongly acid; gradual smooth boundary.

Cg—40 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; firm; many medium prominent strong brown (7.5YR 5/8) and common medium distinct light yellowish brown (10YR 6/4) masses of iron accumulation in the matrix; common medium irregular and few medium irregular iron and manganese concretions; very strongly acid.

Range in Characteristics

Depth to the base of the cambic horizon: 24 to 48 inches

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—very strongly acid to neutral

A horizon (if it occurs):
Thickness—1 to 3 inches
Hue—10YR
Value—3 or 4

Chroma—1 or 2
Texture—silt loam
Reaction—very strongly acid or strongly acid

Bw or Bg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—commonly silt loam; less commonly silty clay loam
Reaction—very strongly acid or strongly acid

Cg or C horizon:
Hue—10YR or 2.5Y
Value—4 to 7
Chroma—1 to 6
Texture—silt loam or silty clay loam; strata of sandy loam, loam, or fine sandy loam included below a depth of 40 inches
Reaction—very strongly acid or strongly acid

Wakeland Series

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents

Typical Pedon

Wakeland silt loam, in a nearly level area in a cultivated field; 2,000 feet southwest of the east corner and then 1,000 feet northwest of the southeast boundary of donation 187, T. 4 N., R. 9 W., Knox County, Indiana; USGS Oaktown, Indiana, topographic quadrangle; lat. 38 degrees 46 minutes 48 seconds N. and long. 87 degrees 24 minutes 21 seconds W., NAD 27 (UTM Zone 16, 464751 easting and 4292227 northing, NAD 83):

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, pale brown (10YR 6/3) dry; weak medium granular structure; friable; many fine roots; neutral; abrupt smooth boundary.
Cg1—7 to 23 inches; grayish brown (10YR 5/2) silt loam; weak medium granular structure; friable; common fine roots; many fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; neutral; clear wavy boundary.
Cg2—23 to 29 inches; grayish brown (10YR 5/2) silt loam; weak fine granular structure; friable; common fine roots; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; few fine faint gray (10YR 5/1) iron depletions in the matrix; neutral; gradual wavy boundary.
Cg3—29 to 60 inches; grayish brown (10YR 5/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly acid.

Range in Characteristics

Ap horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam
Reaction—moderately acid to neutral

A horizon (if it occurs):
Thickness—1 to 3 inches

Hue—10YR
Value—3 or 4
Chroma—1
Texture—silt loam
Reaction—moderately acid to neutral

C or Cg horizon:
Hue—commonly 10YR; less commonly 7.5YR or 2.5Y
Value—4 to 7
Chroma—1 to 6
Texture—silt loam; strata of loam, fine sandy loam, or sandy loam included in the lower part
Reaction—moderately acid to neutral

Wellrock Series

Taxonomic classification: Fine-silty, mixed, active, mesic Ultic Hapludalfs

Typical Pedon

Wellrock silt loam, on a slope of 12 percent in a forested area; 875 feet east and 75 feet north of the center of sec. 6, T. 8 N., R. 3 E., Brown County, Indiana; USGS Nashville, Indiana, topographic quadrangle; lat. 39 degrees 09 minutes 31 seconds N. and long. 86 degrees 14 minutes 05 seconds W., NAD 27 (UTM Zone 16, 566118 easting and 4334663 northing, NAD 83):

Oi—0 to 1 inch; roots and partially decomposed leaves from mixed deciduous trees.
A—1 to 4 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.
EB—4 to 8 inches; yellowish brown (10YR 5/4) silt loam; moderate medium granular structure; friable; many fine and medium roots; extremely acid; clear wavy boundary.
Bt1—8 to 20 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; firm; common fine and medium roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; very strongly acid; clear smooth boundary.
Bt2—20 to 28 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; common fine and medium roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; very strongly acid; clear smooth boundary.
2Bt3—28 to 36 inches; yellowish brown (10YR 5/6) silty clay loam; moderate coarse prismatic structure parting to moderate medium angular blocky; firm; few fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; common pale brown (10YR 6/3) silt coatings on faces of peds; 3 percent parachanners; extremely acid; clear wavy boundary.
2Bt4—36 to 52 inches; yellowish brown (10YR 5/4) extremely parachannery silt loam; common medium distinct light brownish gray (2.5Y 6/2) mottles; weak fine subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; 60 percent parachanners; very strongly acid; clear smooth boundary.
2Cr—52 to 60 inches; yellowish brown (10YR 5/4), fractured, moderately cemented siltstone interbedded with thin layers of weakly cemented shale and very strongly cemented siltstone.

Range in Characteristics

Thickness of the loess: 22 to 38 inches
Depth to the base of the argillic horizon: 38 to 58 inches
Depth to bedrock (paralithic contact): 40 to 60 inches

A horizon:
Thickness—1 to 5 inches
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam
Reaction—very strongly acid or strongly acid

Ap horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid to neutral

EB, BE, or E/A horizon:
Hue—10YR
Value—5 or 6
Chroma—4 to 6
Texture—silt loam
Reaction—extremely acid or very strongly acid; ranges to slightly acid in limed areas

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silt loam or silty clay loam
Reaction—extremely acid or very strongly acid

2Bt or 2BC horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 6
Texture—silt loam or silty clay loam or the parachannery to extremely parachannery analogs of these textures
Reaction—extremely acid or very strongly acid
Content of pararock fragments—10 to 65 percent parachanners

2Cr horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—3 to 6

Wilbur Series

Taxonomic classification: Coarse-silty, mixed, superactive, mesic Fluvaquentic Eutrudepts

Typical Pedon

Wilbur silt loam, in a nearly level area in a cultivated field; 2,245 feet north and 1,450 feet east of the southwest corner of donation 99, T. 1 S., R. 10 W., Gibson County, Indiana; USGS Patoka, Indiana, topographic quadrangle; lat. 38 degrees 24 minutes 46 seconds N. and long. 87 degrees 34 minutes 10 seconds W., NAD 27 (UTM Zone 16, 450283 easting and 4251774 northing, NAD 83):

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; neutral; clear smooth boundary.

Bw1—7 to 17 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine subangular blocky structure; friable; few fine roots; few fine faint brown (10YR 5/3) iron depletions in the matrix; neutral; gradual smooth boundary.

Bw2—17 to 32 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear smooth boundary.

Cg—32 to 60 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; many fine distinct brown (7.5YR 4/4) and common fine distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; neutral.

Range in Characteristics

Depth to the base of the cambic horizon: 24 to 42 inches

Ap or A horizon:
Hue—10YR
Value—4
Chroma—2 to 4
Texture—silt loam
Reaction—moderately acid to neutral

Bw horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam
Reaction—moderately acid to neutral

C or Cg horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam; loam and thin strata of fine sandy loam or sandy loam included in the lower part
Reaction—moderately acid to neutral

Wilhite Series

Taxonomic classification: Fine, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon

Wilhite silty clay loam, on a slope of 0.5 percent in a cultivated field; 1,380 feet south and 1,400 feet east of the northwest corner of sec. 19, T. 1 N., R. 8 W., Pike County, Indiana; USGS Monroe City, Indiana, topographic quadrangle; lat. 38 degrees 30 minutes 20 seconds N. and long. 87 degrees 20 minutes 48 seconds W., NAD 27 (UTM Zone 16, 469771 easting and 4261972 northing, NAD 83):

Ap—0 to 9 inches; dark gray (10YR 4/1) silty clay loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; firm; common fine roots; neutral; abrupt smooth boundary.

BAg—9 to 17 inches; dark gray (10YR 4/1) silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; few fine distinct brown (10YR 4/3) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Bg1—17 to 26 inches; gray (10YR 5/1) silty clay; weak medium prismatic structure parting to moderate coarse angular blocky; very firm; few fine roots; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; dark gray (10YR 4/1) silty clay loam krotovinas about 1.0 to 1.5 feet apart; strongly acid; clear smooth boundary.

Bg2—26 to 38 inches; gray (10YR 5/1) silty clay; weak medium prismatic structure parting to moderate coarse angular blocky; very firm; few fine roots; few faint dark gray (10YR 4/1) organic coatings on faces of peds; many medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation in the matrix; dark gray (10YR 4/1) silty clay loam krotovinas about 1.0 to 1.5 feet apart; strongly acid; clear smooth boundary.

BCg—38 to 47 inches; dark gray (10YR 4/1) silty clay; weak coarse subangular blocky structure; very firm; common distinct gray (N 5/) organic coatings on faces of peds; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; dark gray (10YR 4/1) silty clay loam krotovinas about 1.0 to 1.5 feet apart; strongly acid; gradual smooth boundary.

Cg—47 to 60 inches; gray (10YR 6/1) and grayish brown (2.5Y 5/2) silty clay; massive; very firm; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many fine and medium black (10YR 2/1) iron and manganese concentrations; dark gray (10YR 4/1) silty clay loam krotovinas about 1.0 to 1.5 feet apart; moderately acid.

Range in Characteristics

Depth to the base of the cambic horizon: 30 to 50 inches

Ap or A horizon:
Hue—10YR to 5Y
Value—4 or 5
Chroma—1 to 3
Texture—silty clay loam
Reaction—strongly acid or moderately acid; ranges to neutral in limed areas

Bg, BAg, or BCg horizon:
Hue—10YR to 5Y or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay
Reaction—strongly acid to neutral

Cg horizon:
Hue—10YR to 5Y or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or silty clay
Reaction—strongly acid to neutral

Wrays Series

Taxonomic classification: Fine-silty, mixed, active, mesic Typic Hapludults

Typical Pedon

Wrays silt loam, on a northwest-facing slope of 13 percent in a forested area; 850 feet east and 1,900 feet north of the southwest corner of sec. 35, T. 2 N., R. 6 E., Scott County, Indiana; USGS Henryville, Indiana, topographic quadrangle; lat. 38 degrees 33 minutes 59 seconds N. and long. 85 degrees 49 minutes 28 seconds W., NAD 27 (UTM Zone 16, 602415 easting and 4269321 northing, NAD 83):

Oi—0 to 1 inch; partially decomposed leaves from mixed deciduous trees.

E/A—1 to 6 inches; 85 percent light yellowish brown (10YR 6/4) (E) and 15 percent dark grayish brown (10YR 4/2) (A) silt loam, very pale brown (10YR 8/4) and light brownish gray (10YR 6/2) dry; weak fine and medium subangular blocky structure parting to moderate medium granular; friable; many very fine and fine, common medium and coarse, and few very coarse roots; very strongly acid; gradual wavy boundary.

Bt1—6 to 12 inches; strong brown (7.5YR 5/6) silt loam; weak fine and medium subangular blocky structure; friable; common very fine and fine, common medium and coarse, and few very coarse roots throughout; few distinct strong brown (7.5YR 5/6) clay films on faces of peds; very strongly acid; clear wavy boundary.

Bt2—12 to 25 inches; strong brown (7.5YR 5/6) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine and fine and common medium and coarse roots between peds and few very coarse roots throughout; many distinct strong brown (7.5YR 4/6) clay films on faces of peds; very strongly acid; gradual wavy boundary.

2Bt3—25 to 34 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; few very fine and fine and common medium roots between peds; many prominent strong brown (7.5YR 5/6) and common distinct pale brown (10YR 6/3) clay films on faces of peds; 10 percent channers; very strongly acid; clear wavy boundary.

2CB—34 to 44 inches; light yellowish brown (2.5Y 6/4) extremely channery silt loam; moderate very thick platy structure; firm; few very fine and fine roots between peds; common distinct light brownish gray (2.5Y 6/2) clay films on rock fragments; common prominent strong brown (7.5YR 4/6) iron stains on faces of peds; 65 percent channers; very strongly acid; clear wavy boundary.

2R—44 to 60 inches; fractured, very strongly cemented siltstone.

Range in Characteristics

Thickness of the loess: 22 to 36 inches
Depth to the base of the argillic horizon: 30 to 50 inches
Depth to bedrock (lithic contact): 40 to 60 inches

A part of E/A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam
Reaction—very strongly acid or strongly acid

E part of E/A horizon:
Hue—10YR
Value—5 or 6

Chroma—4 to 6
Texture—silt loam
Reaction—very strongly acid or strongly acid

Ap horizon (if it occurs):
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—very strongly acid to neutral

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silt loam or silty clay loam
Reaction—very strongly acid or strongly acid; ranges to slightly acid in the upper part in limed areas

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—4 to 8
Texture—silt loam, silty clay loam, channery silt loam, or channery silty clay loam
Reaction—extremely acid or very strongly acid
Content of rock fragments—2 to 25 percent channers

2CB or 2BC horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6
Chroma—4 to 8
Texture—the channery to extremely channery analogs of silt loam or silty clay loam
Reaction—extremely acid or very strongly acid
Content of rock fragments—20 to 65 percent channers

Formation of the Soils

This section relates the major factors of soil formation to the soils in Floyd County. The processes of soil formation also are described.

Factors of Soil Formation

Soils form through processes acting upon deposits of plants and geologic materials. The characteristics of a soil at any given point are determined by five major factors: (1) time—the period during which the soil-forming factors have acted upon the parent material; (2) parent material—the physical and mineralogical composition of the plant and geologic materials; (3) topography—the general configuration of the land's surface; (4) climate—the temperature and moisture conditions under which the soils formed; and (5) organisms—the plant and animal life on and in the soil (Jenny, 1941).

Parent material greatly affects the development of the soil. Climate and organisms are active factors of soil formation. They act upon the parent material through the weathering process and slowly change it into a natural body with genetically related horizons. The effects of climate and organisms are conditioned by the topography of the area. Finally, time is needed for the transformation of the parent material into a soil exhibiting horizonation.

The factors of soil formation are so closely interrelated in their effects on the soil and on each other that few generalizations can be made regarding the effects of any one factor unless conditions are specified for the others.

Time

Generally, a long time is needed for the development of distinct soil horizons. The length of time that parent material has been in place commonly reflects the degree of profile development.

The soils in Floyd County range from immature to mature. Cincinnati, Nabb, and other soils that formed in loess and till and Crider, Spickert, and Wellston soils that formed in loess over material weathered from bedrock have been exposed to the soil-forming factors long enough for the development of distinct horizons. Wakeland, Haymond, Steff, and other soils that formed in recent alluvium, however, have not been in place long enough for this kind of development. Some steep soils, such as Brownstown soils, have been exposed to the soil-forming factors for a long time but do not have distinct horizons. Most of the precipitation that has fallen on these soils has run off the surface and thus has not moved through the profile; consequently, very little weathering of minerals or translocation of soil material has occurred.

Parent Material and Geology

Dr. Stanley M. Totten, professor of geology, Hanover College, helped prepare this section.

The soils in Floyd County formed in a variety of parent materials associated with many landforms. Generally, the soils formed in unconsolidated gravel, sand, silt, and clay deposited by glaciers, streams, and wind, or they formed in material weathered from shale, siltstone, and limestone bedrock. The unconsolidated surficial materials range from 0 to more than 30 feet in thickness. Thus, bedrock is sufficiently close to the surface to exert influence on soil formation over extensive areas of the county. In many soils the upper part of the profile has formed in a different kind of material than the lower part, and many soils have formed in two or three kinds of parent material.

The bedrock exposed in Floyd County belongs to the Devonian and Mississippian Systems of the Paleozoic Era and ranges in age from about 350 to 400 million years. These rocks consist of shale, siltstone, and limestone, which originated as fine grained sediments in warm, shallow marine waters that covered much of the North American continent. All bedrock units dip gently westward away from the Cincinnati Arch and toward the Illinois Basin at 20 to 25 feet per mile. As a result, rock units become successively younger in a westward direction in Floyd County. The relatively old New Albany shale of Devonian age occurs mainly in the extreme eastern parts of the county, whereas the relatively young St. Louis and Salem Formations occur mainly in the western parts of the county. Differential erosion of the dipping rocks has resulted in the development of three physiographic provinces. In the Scottsburg Lowland in the eastern part of the county, the soils developed in the more easily eroded shales of the New Albany and New Providence Formations. The Norman Upland province, which consists of higher elevations and steeper slopes in the central part of the county, is characterized by soils that formed in the more resistant and massive siltstones of the Spickert Knob Formation. Separating the Norman Upland from the Scottsburg Lowland is the Knobstone Escarpment, the most prominent topographic feature in Indiana, which has an average height of about 375 feet in the county. The Mitchell Plain covers the extreme western part of the county. Elevations in Floyd County range from a low of about 382 feet at the Ohio River to a high of about 1,006 feet above the knobs northwest of New Albany.

The oldest rocks in Floyd County, the New Albany shale of the Devonian System, consist of brownish black, hard, brittle shale that contains much carbonaceous material. Soils that formed in residuum from these shales are rare and relatively insignificant in Floyd County.

The New Providence Formation of Mississippian age consists of greenish gray shale, which occurs at the base of the Knobstone Escarpment in the southwestern part of Floyd County. The soft shales of this unit and of the overlying units that crop out in the escarpment are frequently referred to as “soapstone” because of the slippery or slick feel that comes from mica and the high clay content. Rarden soils formed in this shale residuum. The lower part of the solum in many of the Coolville soils formed in residuum from this shale.

The prominent Knobstone Escarpment, about 375 feet high, is a highly dissected, one-sided ridge facing east. It marks the boundary between the Scottsburg Lowland on the east-northeast and the Norman Upland on the west-southwest. This escarpment in southwestern Floyd County is composed of a chain of steep, highly eroded hillslopes and ravines in which gray to drab siltstone of the Spickert Knob Formation occasionally crops out. On the lower part of the escarpment, the Spickert Knob Formation is composed of gray to drab shaly siltstone formerly known as the Locust Point Formation. Kurtz and Gnawbone soils formed in residuum derived from the shaly siltstone. The lower part of the solum in some of the Coolville and Rarden soils also formed in this material. The upper part of the escarpment, at elevations generally exceeding 800 feet, is composed of massive gray siltstone of the upper part of the Spickert Knob Formation, formerly known as the Carwood Formation. Brownstown and Gilwood soils formed in the silty residuum of this unit.

In western Floyd County is an area underlain with limestone of the Harrodsburg, Salem, and St. Louis Formations of Mississippian age. This limestone is the youngest bedrock in the county. Bedford, Caneyville, Crider, Knobcreek, and Navilleton soils formed in thin or very thin loess and a red, clayey residuum generally known as “terra rossa" (Ruhe and Olson, 1980). This residuum is primarily made up of clay, iron oxide, and chert and other materials. Limestone bedrock crops out at the surface or is at a depth ranging to more than 15 feet. In the northwestern and southwestern parts of the county, the landscape is pitted with numerous sinkholes. This type of landscape is known as karst topography (fig. 9). Some of the Caneyville, Knobcreek, and Navilleton soils are mapped as "karst" phases.

In the extreme northwest part of the county are a few small ridges that are generally at slightly higher elevations than the soils that formed in residuum from limestone and shale. The origin of these ridges is not exactly known, but the nature of the underlying sand indicates a type of marine beach or channel fill sediment. Gatton soils formed in materials consisting of, from the surface downward, silty loess and unconsolidated material derived from sandstone (Wayne, 1960).

A period of broad uplift, erosion, and weathering lasting about 340 million years followed the deposition of the shale, siltstone, and limestone bedrock.

Floyd County was covered by continental ice sheets at least twice and probably several times during the Illinoian and pre-Illinoian glacial stages. These glaciers, although thin and near the southernmost limit of their advances, managed to flow over and above the Knobstone Escarpment to cover the entire county with ice. These large ice sheets modified the pre-glacial topography of Floyd County only slightly; but the deposits left behind, in the form of till, outwash, lacustrine material, and loess, greatly influenced subsequent soil formation.

From about 150,000 to 130,000 years ago, Indiana was invaded by the Illinoian continental ice sheet, which covered much of the eastern part of Floyd County. The ice sheet deposited a thin layer of till. The thickness of the till was only a few feet in most places but ranged to as much as 30 feet. The till is discontinuous and is absent on the steeper hillslopes where post-glacial sheetwash and gully erosion have removed the weak unconsolidated materials.

Figure 9.—A typical karst landscape in Floyd County. Pictured are Caneyville, Haggatt, and Knobcreek soils.

During and immediately after the retreat phase of Illinoian ice, “gritty” loess, a silty sediment picked up by the wind from meltwater flood plains, was deposited in the survey area.

Blocher, Cincinnati, and Nabb soils formed in materials consisting of, from the surface downward, silty loess, “gritty” loess, and Illinoian till.

The period from 125,000 to 70,000 years before present was an interglacial period characterized by weathering, erosion, and soil formation. Ice sheets formed about 70,000 years before present in Canada but did not reach Indiana until about 24,000 years ago. This Wisconsinan ice advance halted about 50 miles north of Floyd County, but deposition of Wisconsinan outwash in the Ohio River valley formed temporary lakes.

Melting of the ice sheet caused the discharge of large quantities of meltwater into streams and deposited sand and gravel in their valleys. Outwash sand and gravel deposited in the Ohio River valley dammed the tributaries to the Ohio River and formed short-lived lakes in the lower Silver Creek and Knob Creek. The lake level rose to an elevation of at least 470 feet as evidenced by lake sediments at this elevation and below. Sediments consisting of silty clay and clayey silt as much as 30 feet thick were deposited in the lake. Markland, McGary, and Shircliff soils formed in lacustrine (lake) sediments and the overlying 1.5 feet or less of silty loess. These lacustrine sediments are dominantly clayey in the upper part and are dominantly silty and clayey in the lower part.

Melting of Wisconsinan ice between about 20,000 and 15,000 years ago in central Indiana resulted in the deposition of 2 to 3 feet of silty loess in Floyd County. As with the older “gritty” loess of probable Illinoian age, much of the silty loess later was reworked or removed by slope processes, lake water, and streams. Weathering, sheetwash, gullying, and stream action have continued to modify parts of the Floyd County landscape up to the present.

Several cycles of stream erosion involving lateral planation of valleys are evident in Floyd County. Modification of all pre-glacial valleys in the county occurred during and after each glacial stage, and some valleys were partially filled with till, alluvium, or lake sediment. Stream terraces, the flat remnants of former flood plains, occur in places along the margins of most valleys at elevations ranging from 6 to 20 feet above the modern flood plain.

The stream terraces along Indian Creek, Little Indian Creek, and Silver Creek typically are 6 to 20 feet above their modern flood plains. These terraces are underlain by silty, loamy, acid alluvium and are capped by 2 to 3 feet of silty loess of late Wisconsinan age. Bartle and Pekin soils formed in these loess-capped alluvial materials. In the Indian Creek and Little Indian Creek valleys at the slightly higher elevations, Spickert soils formed on terraces composed of thin loess and silty alluvium and are underlain with siltstone bedrock within a depth of 6.0 to 7.5 feet.

The stream terraces along the Ohio River typically are 10 to 30 feet above their modern flood plains. These silty terraces, which formed in sediments from the Wisconsinan ice advance, are underlain by loamy and sandy alluvium. Sciotoville and Elkinsville soils formed in these alluvial materials.

Alluvium was deposited on the flood plains during, between, and after the periods of glaciation. The composition of the alluvium on the modern flood plains in Floyd County varies, depending on the source of the alluvium, time of deposition, proximity in the valley, and overflow velocity of the water carrying the alluvial sediment. Most of the alluvial sediment deposited on the flood plains in the county is silty and ranges from neutral to very strongly acid. Birds, Haymond, Huntington, Lindside, Steff, Stendal, and Wilbur soils formed in this type of sediment. Beanblossom soils, in narrow tributaries, formed in loamy sediment over very channery sediment washed from hillslopes in the siltstone bedrock of the Norman Upland.

Topography

Topography, or relief, has markedly influenced the soils in Floyd County through its effect on natural drainage, erosion, runoff, plant cover, and soil temperature. Some soils formed in the same kind of parent material but differ mainly in drainage characteristics because of relief.

Runoff is most rapid on the steepest slopes. Many low, depressional areas are temporarily ponded. The greater the runoff rate, the greater the hazard of erosion.

Through its effect on aeration in the soil, drainage determines the major color of a soil. Water and air move freely through most well drained soils and slowly through very poorly drained soils. In Crider, Elkinsville, and other soils that are well aerated, the iron and aluminum compounds that give most soils their color are reddish or brownish and are oxidized. Birds and other poorly aerated soils that are saturated for long periods commonly are dominantly gray and have reddish and brownish masses of iron accumulation. The soils are gray because the iron compounds are in a reduced state or have been removed from the profile.

Soils on west- and south-facing slopes generally are warmer than soils on north- and east-facing slopes.

Climate

Climate largely determines the kind of plant and animal life on and in the soil. It also determines the amount of water available for the weathering of minerals and the translocation of soil material. Temperature determines the rate of chemical reactions in the soil. These effects tend to be uniform in relatively small areas, such as those the size of a county.

The climate in Floyd County is generally cool and moist in winter and hot and humid in summer. It is presumably similar to the one that prevailed when the soils formed. The climate is nearly uniform throughout the county, and thus differences among the soils in the county are not the result of varied climatic conditions.

Organisms

Plants have been the principal organisms influencing the soils in Floyd County, but bacteria, fungi, earthworms, and human activities also have been important. The chief contribution of plant and animal life is the addition of organic matter and nitrogen to the soil. The kind of organic material in and on the soil depends on the kind of native plants that grew on the soil. The remains of these plants accumulated in the surface layer, decayed, and eventually became humus. The roots of the plants provided channels for the downward movement of water and air through the soil, and they added organic matter as they decayed. Bacteria in the soil help to break down the organic material into plant nutrients.

The native vegetation in Floyd County was mainly deciduous, mixed hardwoods. Differences in natural soil drainage and minor variations in the parent material affected the composition of the forest species. Common trees on well drained soils, such as Gilwood and Brownstown soils, were yellow-poplar, white oak, red oak, hickory, elm, and sugar maple. Wet soils, such as Peoga soils, supported primarily sweetgum, pin oak, beech, and soft maple.

Processes of Soil Formation

Several processes have been involved in the formation of the soils in Floyd County. These processes are the accumulation of organic matter; the dissolution, transfer, and removal of calcium carbonates and bases; the liberation and translocation of silicate clay minerals; and the reduction and transfer of iron. In most of the soils, more than one of these processes have helped to differentiate soil horizons.

Some organic matter has accumulated in the surface layer of all of the soils in the county. The organic matter content of most of the soils is low or moderately low.

Carbonates and bases have been leached from the upper horizons of most of the soils in the county. Leaching probably preceded the translocation of silicate clay minerals. Almost all of the carbonates and some of the bases have been leached from the A and B horizons of the well drained soils. Even in the wettest soils, some leaching is indicated by the absence of carbonates and by an acid soil reaction. Leaching of wet soils is slow because of a seasonal high water table or the slow movement of water through the profile.

Clay accumulates in pores and other voids and forms films on the surfaces along which water moves. The leaching of bases and the translocation of silicate clays are among the more important processes affecting horizon differentiation in the soils. Spickert soils are examples of soils in which translocated silicate clays have accumulated in the Bt horizon in the form of clay films. Gleying, or the reduction and transfer of iron, has occurred in all of the very poorly drained to somewhat poorly drained soils in the county. In these naturally wet soils, this process has had a significant effect on horizon differentiation. A gray subsoil indicates the reduction of iron oxides. This reduction is commonly accompanied by some transfer of the iron from the upper horizons to the lower ones or completely out of the profile. The redoximorphic concentrations in some horizons indicate the segregation of iron. Wilhite soils are examples of soils in which this process has occurred.

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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).

Ablation till. Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

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.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp. A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding plane. A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A saucer-, cup-, or trough-shaped depression formed by wind erosion on a preexisting dune or other sand deposit, especially in an area of shifting sand or loose soil or where protective vegetation is disturbed or destroyed; the adjoining accumulation of sand derived from the depression, where recognizable, is commonly included. Blowouts are commonly small.

Bottom land. An informal term loosely applied to various portions of a flood plain.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

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.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Catena. A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. See Terracettes.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. 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. See Redoximorphic features.

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.

Coprogenous earth (sedimentary peat). A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

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.

Delta. A body of alluvium having a surface that is fan shaped and nearly flat; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression. Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming to the dip of the underlying bedrock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained,* and *very poorly drained*. These classes are defined in the "Soil Survey Manual."

Drainage, surface. Runoff, or surface flow of water, from an area.

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.

Drift. A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Earthy fill. See Mine spoil.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit. Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

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.

Esker. A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Fan terrace. A relict alluvial fan, no longer a site of active deposition, incised by younger and lower alluvial surfaces.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

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.

Geomorphology. The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

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.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Herbaceous peat. An accumulation of organic material, decomposed to some degree, that is predominantly the remains of sedges, reeds, cattails, and other herbaceous plants.

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:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Ice-walled lake plain. A relict surface marking the floor of an extinct lake basin that was formed on solid ground and surrounded by stagnant ice in a stable or unstable superglacial environment on stagnation moraines. As the ice melted, the lake plain became perched above the adjacent landscape. The lake plain is well sorted, generally fine textured, stratified deposits.

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.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. 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.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake bed. The bottom of a lake; a lake basin.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lamella. A thin (commonly less than 1 cm thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

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. (See Slippage.)

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

Meander scar. A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.

Meander scroll. One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mine spoil. An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Mollic epipedon. A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.

Moraine. In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.

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).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mucky peat. Unconsolidated soil material consisting primarily of organic material that is in an intermediate stage of decomposition such that a significant part of the material can be recognized and a significant part of the material cannot be recognized.

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.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleosol. A soil that formed on a landscape in the past with distinct morphological features resulting from a soil-forming environment that no longer exists at the site. The former pedogenic process was either altered because of external environmental change or interrupted by burial. A paleosol (or component horizon) may be classed as relict if it persisted in a land-surface position without major alteration of morphology by processes of the pedogenic environment. An exhumed paleosol is one that formerly was buried and has been re-exposed by erosion of the covering mantle. Most paleosols have been affected by subsequent modification of diagnostic horizon morphologies and profile truncation.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Pararock fragments. Fragments of paralithic materials, having a diameter of 2 millimeters or more; for example, parachanners and paraflagstones.

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.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

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 from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Shrub-coppice dune. A small, streamlined dune that forms around brush and clump vegetation.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slippage. A mass movement of soil that happens when the vegetation is removed and soil water is at or near saturation or when the slope is undercut.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 3 percent
Very gently sloping	1 to 3 percent
Gently sloping	2 to 6 percent
Moderately sloping	6 to 12 percent
Strongly sloping	12 to 18 percent
Moderately steep	18 to 25 percent
Steep	25 to 35 percent
Very steep	35 percent and higher

Classes for complex slopes are as follows:

Level	0 to 1 percent
Nearly level	0 to 3 percent
Gently undulating	1 to 4 percent
Undulating	1 to 8 percent
Gently rolling	4 to 10 percent
Rolling	4 to 16 percent
Hilly	10 to 30 percent
Steep	20 to 60 percent
Very steep	45 percent and higher

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

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.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single 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.

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.

Swale. A slight depression in the midst of generally level land. A shallow depression in an undulating ground moraine caused by uneven glacial deposition.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

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.

Woody peat. An accumulation of organic material that is predominantly composed of trees, shrubs, and other woody plants.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1961-90 at Salem, Indiana)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	39.0	20.7	29.9	65	-14	41	2.95	1.38	4.29	5	6.1
February---	43.7	23.1	33.4	70	-10	58	2.96	1.26	4.41	6	6.0
March------	55.6	33.5	44.5	80	7	217	4.86	2.59	6.85	8	3.4
April------	66.9	42.7	54.8	85	22	450	4.33	2.40	6.04	8	.3
May--------	75.7	51.3	63.5	90	31	729	4.71	2.66	6.53	8	.0
June-------	84.3	60.3	72.3	95	42	969	3.68	1.93	5.22	6	.0
July-------	86.9	64.2	75.6	98	48	1,103	5.04	3.07	6.81	7	.0
August-----	85.7	62.0	73.8	97	46	1,049	3.34	1.92	4.61	5	.0
September--	80.1	55.8	67.9	93	35	838	2.83	1.55	3.96	5	.0
October----	68.8	43.9	56.4	86	22	510	3.01	1.42	4.37	5	.1
November---	55.5	35.6	45.6	77	13	219	3.88	2.29	5.31	7	1.1
December---	43.7	26.2	34.9	68	-3	78	3.69	2.17	5.04	7	2.8
Yearly:											
Average---	65.5	43.3	54.4	---	---	---	---	---	---	---	---
Extreme---	103	-25	---	99	-15	---	---	---	---	---	---
Total-----	---	---	---	---	---	6,260	45.29	37.63	50.31	77	19.7

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (40 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Salem, Indiana)

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. 28	May 12
2 years in 10 later than--	Apr. 6	Apr. 23	May 6
5 years in 10 later than--	Mar. 28	Apr. 13	Apr. 25
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 20	Oct. 8	Sept. 30
2 years in 10 earlier than--	Oct. 24	Oct. 13	Oct. 4
5 years in 10 earlier than--	Nov. 2	Oct. 24	Oct. 11

Table 3.--Growing Season

(Recorded in the period 1961-90 at Salem, Indiana)

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	198	175	148
8 years in 10	205	181	155
5 years in 10	218	193	168
2 years in 10	231	204	181
1 year in 10	238	210	188

Table 4.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
BbhA	Bartle silt loam, 0 to 2 percent slopes	401	0.4
BcrAQ	Beanblossom silt loam, 1 to 3 percent slopes, rarely flooded	80	*
BcrAW	Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded, very brief duration	3,996	4.2
BgeAZ	Birds silt loam, undrained, 0 to 1 percent slopes, frequently flooded, very brief duration	143	0.1
BlvAW	Kintner loam, 1 to 3 percent slopes, occasionally flooded, very brief duration	684	0.7
BuoA	Bromer silt loam, 0 to 2 percent slopes	77	*
CcaG	Caneyville-Rock outcrop complex, 25 to 60 percent slopes	259	0.3
CkkB2	Cincinnati silt loam, 2 to 6 percent slopes, eroded	464	0.5
CldC2	Cincinnati-Blocher silt loams, 6 to 12 percent slopes, eroded	337	0.4
ConC3	Coolville-Rarden complex, 6 to 12 percent slopes, severely eroded	208	0.2
CtwB	Crider-Bedford-Navilleton silt loams, 2 to 6 percent slopes	9,412	9.8
CwaAQ	Cuba silt loam, 0 to 2 percent slopes, rarely flooded	588	0.6
EepB	Elkinsville silt loam, 2 to 6 percent slopes	234	0.2
EepGQ	Elkinsville silt loam, 25 to 60 percent slopes, rarely flooded	84	*
GgbG	Gilwood-Brownstown silt loams, 25 to 75 percent slopes	8,803	9.2
GgfE2	Gilwood-Wrays silt loams, 12 to 25 percent slopes, eroded	6,758	7.1
GmaG	Gnawbone-Kurtz silt loams, 20 to 60 percent slopes	8,323	8.7
HcbAQ	Hatfield silty clay loam, 0 to 2 percent slopes, rarely flooded	296	0.3
HcgAH	Haymond silt loam, 0 to 2 percent slopes, frequently flooded, brief duration	525	0.5
HcgAV	Haymond silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration	631	0.7
HcgAW	Haymond silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration	375	0.4
HufAK	Huntington silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	600	0.6
KxkC2	Knobcreek-Navilleton silt loams, 6 to 12 percent slopes, eroded	10,820	11.3
KxlC3	Knobcreek-Haggatt-Caneyville complex, 6 to 12 percent slopes, severely eroded	3,102	3.2
KxlE3	Knobcreek-Haggatt-Caneyville complex, 12 to 25 percent slopes, severely eroded	2,633	2.7
KxmE2	Knobcreek-Haggatt-Caneyville silt loams, 12 to 25 percent slopes, eroded	3,005	3.1
KxoC2	Knobcreek-Navilleton-Haggatt silt loams, karst, rolling, eroded	2,223	2.3
KxpD2	Knobcreek-Haggatt-Caneyville silt loams, karst, hilly, eroded	2,069	2.2
LpoAK	Lindside silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	402	0.4
McnGQ	Markland silt loam, 18 to 50 percent slopes, rarely flooded	120	0.1
McpC3	Markland silty clay loam, 6 to 12 percent slopes, severely eroded	181	0.2
McuDQ	Markland silty clay loam, 12 to 25 percent slopes, severely eroded, rarely flooded	82	*
MhuA	McGary silt loam, 0 to 2 percent slopes	15	*
MhyB2	Gatton silt loam, 2 to 6 percent slopes, eroded	524	0.5
NaaA	Nabb silt loam, 0 to 2 percent slopes	69	*
NaaB2	Nabb silt loam, 2 to 6 percent slopes, eroded	138	0.1
NbhAK	Newark silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration	93	*
PcrA	Pekin silt loam, 0 to 2 percent slopes	284	0.3
PcrB2	Pekin silt loam, 2 to 6 percent slopes, eroded	999	1.0
PhaA	Peoga silt loam, 0 to 1 percent slopes	40	*
Pml	Pits, quarry	93	*
Ppu	Pits, sand and gravel	110	0.1
RctD3	Rarden-Coolville complex, 12 to 22 percent slopes, severely eroded	480	0.5
ScbA	Sciotoville silt loam, 0 to 2 percent slopes	99	0.1
ScbB2	Sciotoville silt loam, 2 to 6 percent slopes, eroded	84	*
SceB2	Scottsburg silt loam, 2 to 4 percent slopes, eroded	84	*
SfyB	Shircliff silt loam, 2 to 6 percent slopes	507	0.5
SoaB	Spickert silt loam, 2 to 6 percent slopes	467	0.5
SodB	Spickert silt loam, terrace, 1 to 4 percent slopes	1,036	1.1
SolC2	Spickert-Wrays silt loams, 6 to 12 percent slopes, eroded	2,578	2.7
StaAQ	Steff silt loam, 0 to 2 percent slopes, rarely flooded	481	0.5
StdAQ	Stendal silt loam, 0 to 2 percent slopes, rarely flooded	393	0.4
Uaa	Udorthents, cut and filled	1,620	1.7
UaoAK	Udifluvents, cut and filled-Urban land complex, 0 to 2 percent slopes, occasionally flooded, brief duration	429	0.4
UedA	Urban land-Aquents, clayey substratum, complex, lake plain, 0 to 3 percent slopes	1,264	1.3
UndAY	Urban land-Udifluvents complex, leveed, 0 to 2 percent slopes	186	0.2
UneC	Urban land-Udarents, clayey substratum, complex, hills, 2 to 12 percent slopes	3,833	4.0
UngB	Urban land-Udarents, fragipan substratum, complex, till plain, 0 to 12 percent slopes	3,639	3.8

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
UnkB	Urban land-Udarents, silty substratum, complex, terrace, 0 to 6 percent slopes----------	1,624	1.7
UnlC	Urban land-Udarents, hard bedrock substratum, complex, hills, 2 to 15 percent slopes----	1,610	1.7
UnpA	Urban land-Udarents, loamy substratum, complex, terrace, 0 to 3 percent slopes----------	1,278	1.3
UnrD	Urban land-Udarents, soft bedrock substratum, complex, hills, 6 to 20 percent slopes----	1,229	1.3
W	Water--	699	0.7
WaaAV	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration------	140	0.1
WaaAW	Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration----	219	0.2
WhdD2	Wellrock-Gnawbone-Spickert, soft bedrock substratum, silt loams, 6 to 18 percent slopes, eroded---	1,174	1.2
WokAV	Wilbur silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration--------	165	0.2
WokAW	Wilbur silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration------	75	*
WomAK	Wilhite silty clay loam, 0 to 1 percent slopes, occasionally flooded, brief duration----	91	*
	Total--	95,764	100.0

* Less than 0.1 percent.

Table 5.--Main Limitations and Hazards Affecting Cropland and Pasture

(See text for a description of the limitations and hazards listed in this table. Absence of an entry indicates that the map unit or component of the map unit is generally not used as cropland or pasture)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
BbhA:		
Bartle	Wetness, low pH, crusting, moderate available water capacity, restricted permeability.	Trafficability, low pH.
BcrAQ:		
Beanblossom	Low pH, crusting, moderate available water capacity.	Low pH.
BcrAW:		
Beanblossom	Flooding, low pH, crusting, moderate available water capacity.	Flooding, low pH.
BgeAZ:		
Birds	Flooding, ponding, wetness, low pH, crusting.	Flooding, ponding, wetness, trafficability, low pH.
BlvAW:		
Kintner	Flooding, high pH, crusting, moderate available water capacity.	Flooding, high pH.
BuoA:		
Bromer	Wetness, low pH, crusting, restricted permeability.	Trafficability, low pH.
CcaG:		
Caneyville	Equipment limitation (slope), low pH, water erosion, low available water capacity, areas of rock outcrop.	Equipment limitation (slope), low pH, water erosion, low available water capacity. areas of rock outcrop.
Rock outcrop.		
CkkB2:		
Cincinnati	Limited rooting depth (fragipan), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH, water erosion.
CldC2:		
Cincinnati	Limited rooting depth (fragipan), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH, water erosion.
Blocher	Low pH, crusting, water erosion, restricted permeability.	Low pH, water erosion.

Table 5.--Main Limitations and Hazards Affecting Cropland and Pasture--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
ConC3:		
Coolville	Wetness, low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Low pH, water erosion.
Rarden	Wetness, low pH, crusting, water erosion, low available water capacity, restricted permeability.	Low pH, water erosion, low available water capacity.
CtwB:		
Crider	Low pH, crusting, water erosion.	Low pH, water erosion.
Bedford	Limited rooting depth (fragipan), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH, water erosion.
Navilleton	Low pH, crusting, water erosion, restricted permeability.	Low pH, water erosion.
CwaAQ:		
Cuba	Low pH, crusting	Low pH.
EepB:		
Elkinsville	Low pH, crusting, water erosion.	Low pH, water erosion.
EepGQ:		
Elkinsville	Equipment limitation (slope), low pH, water erosion.	Equipment limitation (slope), low pH, water erosion.
GgbG:		
Gilwood	Equipment limitation (slope), low pH, water erosion, low available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion, low available water capacity.
Brownstown	Equipment limitation (slope), low pH, water erosion, low available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion, low available water capacity.
GgfE2:		
Gilwood	Equipment limitation (slope), low pH, crusting, water erosion, low available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion, low available water capacity.
Wrays	Equipment limitation (slope), low pH, crusting, water erosion, moderate available water capacity.	Equipment limitation (slope), low pH, water erosion.

Table 5.--Main Limitations and Hazards Affecting Cropland and Pasture--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
GmaG:		
Gnawbone	Equipment limitation (slope), low pH, water erosion, moderate available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion.
Kurtz	Equipment limitation (slope), low pH, water erosion, moderate available water capacity.	Equipment limitation (slope), low pH, water erosion.
HcbAQ:		
Hatfield	Wetness, low pH, crusting, moderate available water capacity, restricted permeability.	Trafficability, low pH.
HcgAH:		
Haymond	Flooding, low pH, crusting	Flooding, low pH.
HcgAV:		
Haymond	Flooding, low pH, crusting	Flooding, low pH.
HcgAW:		
Haymond	Flooding, low pH, crusting	Flooding, low pH.
HufAK:		
Huntington	Flooding, low pH	Flooding, low pH.
KxkC2:		
Knobcreek	Low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Low pH, water erosion.
Navilleton	Low pH, crusting, water erosion, restricted permeability.	Low pH, water erosion.
KxlC3:		
Knobcreek	Low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Low pH, water erosion.
Haggatt	Low pH, crusting, water erosion, low available water capacity.	Low pH, water erosion, low available water capacity.
Caneyville	Low pH, crusting, water erosion, low available water capacity.	Low pH, water erosion, low available water capacity.
KxlE3:		
Knobcreek	Equipment limitation (slope), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion.

Table 5.--Main Limitations and Hazards Affecting Cropland and Pasture--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
KxlE3:		
Haggatt	Equipment limitation (slope), low pH, crusting, water erosion, low available water capacity.	Equipment limitation (slope), low pH, water erosion, low available water capacity.
Caneyville	Equipment limitation (slope), low pH, crusting, water erosion, low available water capacity.	Equipment limitation (slope), low pH, water erosion, low available water capacity.
KxmE2:		
Knobcreek	Equipment limitation (slope), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion.
Haggatt	Equipment limitation (slope), low pH, crusting, water erosion, moderate available water capacity.	Equipment limitation (slope), low pH, water erosion.
Caneyville	Equipment limitation (slope), low pH, crusting, water erosion, low available water capacity.	Equipment limitation (slope), low pH, water erosion, low available water capacity.
KxoC2:		
Knobcreek	Low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Low pH, water erosion.
Navilleton	Low pH, crusting, water erosion, restricted permeability.	Low pH, water erosion.
Haggatt	Low pH, crusting, water erosion, moderate available water capacity.	Low pH, water erosion.
KxpD2:		
Knobcreek	Equipment limitation (slope), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion.
Haggatt	Equipment limitation (slope), low pH, crusting, water erosion, moderate available water capacity.	Equipment limitation (slope), low pH, water erosion.
Caneyville	Equipment limitation (slope), low pH, crusting, water erosion, low available water capacity.	Equipment limitation (slope), low pH, water erosion, low available water capacity.
LpoAK:		
Lindside	Flooding, low pH, crusting	Flooding, low pH.

Table 5.--Main Limitations and Hazards Affecting Cropland and Pasture--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
McnGQ:		
Markland	Equipment limitation (slope), low pH, water erosion.	Equipment limitation (slope), low pH, water erosion.
McpC3:		
Markland	Low pH, crusting, water erosion.	Low pH, water erosion.
McuDQ:		
Markland	Equipment limitation (slope), low pH, crusting, water erosion.	Equipment limitation (slope), low pH, water erosion.
MhuA:		
McGary	Wetness, low pH, crusting	Trafficability, low pH.
MhyB2:		
Gatton	Limited rooting depth (fragipan), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH, water erosion.
NaaA:		
Nabb	Limited rooting depth (fragipan), low pH, crusting, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH.
NaaB2:		
Nabb	Limited rooting depth (fragipan), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH, water erosion.
NbhAK:		
Newark	Flooding, wetness, low pH, crusting.	Flooding, trafficability, low pH.
PcrA:		
Pekin	Low pH, crusting, moderate available water capacity, restricted permeability.	Low pH.
PcrB2:		
Pekin	Low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Low pH, water erosion.
PHaA:		
Peoga	Ponding, wetness, low pH, crusting, restricted permeability.	Ponding, wetness, trafficability, low pH.
Pml.		
Pits, quarry		
Ppu.		
Pits, sand and gravel		

Table 5.--Main Limitations and Hazards Affecting Cropland and Pasture--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
RctD3:		
Rarden	Equipment limitation (slope), wetness, low pH, crusting, water erosion, low available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion, low available water capacity.
Coolville	Equipment limitation (slope), wetness, low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion.
ScbA:		
Sciotoville	Low pH, crusting, moderate available water capacity, restricted permeability.	Low pH.
ScbB2:		
Sciotoville	Low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Low pH, water erosion.
SceB2:		
Scottsburg	Low pH, crusting, water erosion, restricted permeability.	Low pH, water erosion.
SfyB:		
Shircliff	Low pH, crusting, water erosion.	Low pH, water erosion.
SoaB:		
Spickert	Limited rooting depth (fragipan), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH, water erosion.
SodB:		
Spickert	Limited rooting depth (fragipan). low pH, crusting, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH.
SolC2:		
Spickert	Limited rooting depth (fragipan), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH, water erosion.
Wrays	Low pH, crusting, water erosion, moderate available water capacity.	Low pH, water erosion.
StaAQ:		
Steff	Low pH, crusting	Low pH.

Table 5.--Main Limitations and Hazards Affecting Cropland and Pasture--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
StdAQ:		
Stendal	Wetness, low pH, crusting	Trafficability, low pH.
Uaa.		
Udorthents, cut and filled		
UaoAK:		
Udifluvents, cut and filled	Flooding, restricted permeability.	Flooding, very low available water capacity.
Urban land.		
UedA:		
Urban land.		
Aquents	Restricted permeability	Very low available water capacity.
UndAY:		
Urban land.		
Udifluvents	Restricted permeability	Very low available water capacity.
UneC:		
Urban land.		
Udarents	Restricted permeability	Very low available water capacity.
UngB:		
Urban land.		
Udarents	Limited rooting depth (fragipan), restricted permeability.	Limited rooting depth (fragipan), very low available water capacity.
UnkB:		
Urban land.		
Udarents	Restricted permeability	Very low available water capacity.
UnlC:		
Urban land.		
Udarents	Equipment limitation (slope), restricted permeability.	Equipment limitation (slope), very low available water capacity.
UnpA:		
Urban land.		
Udarents	Restricted permeability	Very low available water capacity.

Table 5.--Main Limitations and Hazards Affecting Cropland and Pasture--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pasture
UnrD:		
Urban land.		
Udarents	Equipment limitation (slope), restricted permeability.	Equipment limitation (slope), very low available water capacity.
W.		
Water		
WaaAV:		
Wakeland	Flooding, wetness, low pH, crusting.	Flooding, trafficability, low pH.
WaaAW:		
Wakeland	Flooding, wetness, low pH, crusting.	Flooding, trafficability, low pH.
WhdD2:		
Wellrock	Equipment limitation (slope), low pH, crusting, water erosion, moderate available water capacity.	Equipment limitation (slope), low pH, water erosion.
Gnawbone	Equipment limitation (slope), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Equipment limitation (slope), low pH, water erosion.
Spickert	Limited rooting depth (fragipan), low pH, crusting, water erosion, moderate available water capacity, restricted permeability.	Limited rooting depth (fragipan), low pH, water erosion.
WokAV:		
Wilbur	Flooding, low pH, crusting	Flooding, low pH.
WokAW:		
Wilbur	Flooding, low pH, crusting	Flooding, low pH.
WomAK:		
Wilhite	Flooding, ponding, wetness, low pH, cloddiness, moderate available water capacity, restricted permeability.	Flooding, ponding, wetness, trafficability, low pH.

Table 6.--Land Capability 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	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
BbhA----------------- Bartle	2w	115	40	46	3.8	7.6
BcrAQ---------------- Beanblossom	2s	92	33	37	3.0	6.0
BcrAW---------------- Beanblossom	2w	87	30	30	2.9	5.8
BgeAZ---------------- Birds	5w	---	---	---	---	---
BlvAW---------------- Kintner	2w	85	30	30	2.8	5.6
BuoA----------------- Bromer	2w	119	42	48	3.9	7.8
CcaG----------------- Caneyville-Rock outcrop	7e	---	---	---	---	---
CkkB2---------------- Cincinnati	2e	90	32	41	3.0	6.0
CldC2---------------- Cincinnati-Blocher	3e	88	31	37	2.9	5.8
ConC3---------------- Coolville-Rarden	4e	49	17	22	1.6	3.2
CtwB----------------- Crider-Bedford-Navilleton	2e	110	38	46	3.6	7.2
CwaAQ---------------- Cuba	1	120	42	48	4.0	8.0
EepB----------------- Elkinsville	2e	112	39	45	3.7	7.4
EepGQ---------------- Elkinsville	7e	---	---	---	---	---
GgbG----------------- Gilwood-Brownstown	7e	---	---	---	---	---
GgfE2---------------- Gilwood-Wrays	6e	45	16	18	1.5	3.0
GmaG----------------- Gnawbone-Kurtz	7e	---	---	---	---	---
HcbAQ---------------- Hatfield	2w	117	41	48	3.9	7.8

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
HcgAH---------------- Haymond	2w	118	41	---	---	---
HcgAV---------------- Haymond	2w	118	41	---	4.0	8.0
HcgAW---------------- Haymond	2w	122	43	42	4.0	8.0
HufAK---------------- Huntington	2w	124	44	44	4.1	8.2
KxkC2---------------- Knobcreek- Navilleton	3e	83	29	35	2.8	5.6
KxlC3---------------- Knobcreek-Haggatt- Caneyville	4e	62	22	27	2.0	4.0
KxlE3---------------- Knobcreek-Haggatt- Caneyville	6e	49	17	21	1.6	3.2
KxmE2---------------- Knobcreek-Haggatt- Caneyville	4e	57	20	25	1.9	3.8
KxoC2---------------- Knobcreek- Navilleton-Haggatt	3e	80	28	34	2.6	5.2
KxpD2---------------- Knobcreek-Haggatt- Caneyville	4e	50	18	21	1.7	3.4
LpoAK---------------- Lindside	2w	121	43	43	4.1	8.2
McnGQ---------------- Markland	7e	---	---	---	---	---
McpC3---------------- Markland	6e	69	24	30	2.3	4.6
McuDQ---------------- Markland	7e	43	15	20	1.4	2.8
MhuA----------------- McGary	3w	99	35	40	3.3	6.6
MhyB2---------------- Gatton	2e	86	30	38	2.8	5.6
NaaA----------------- Nabb	2w	98	34	43	3.2	6.4
NaaB2---------------- Nabb	2e	93	33	41	3.1	6.2

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
NbhAK---------------- Newark	2w	127	45	45	4.2	8.4
PcrA----------------- Pekin	2w	101	35	45	3.3	6.6
PcrB2---------------- Pekin	2e	98	34	43	3.2	6.4
PhaA----------------- Peoga	3w	108	38	43	3.6	7.2
Pml. Pits, quarry						
Ppu. Pits, sand and gravel						
RctD3---------------- Rarden-Coolville	7e	30	11	13	1.0	2.0
ScbA----------------- Sciotoville	2w	100	35	44	3.3	6.6
ScbB2---------------- Sciotoville	2e	91	32	41	3.0	6.0
SceB2---------------- Scottsburg	2e	99	35	40	3.3	6.6
SfyB----------------- Shircliff	3e	93	33	41	3.1	6.2
SoaB----------------- Spickert	2e	91	32	41	3.0	6.0
SodB----------------- Spickert	2e	93	33	42	3.1	6.2
SolC2---------------- Spickert-Wrays	3e	77	27	33	2.5	5.0
StaAQ---------------- Steff	1	120	42	48	4.0	8.0
StdAQ---------------- Stendal	2w	120	42	48	4.0	8.0
Uaa. Udorthents, cut and filled						
UaoAK. Udifluvents, cut and filled-Urban land						

See footnote at end of table.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Grass-legume hay	Pasture
		Bu	Bu	Bu	Tons	AUM*
UedA. Urban land-Aquents, clayey substratum						
UndAY. Urban land-Udifluvents						
UneC. Urban land-Udarents, clayey substratum						
UngB. Urban land-Udarents, fragipan substratum						
UnkB. Urban land-Udarents, silty substratum						
UnlC. Urban land-Udarents, hard bedrock substratum						
UnpA. Urban land-Udarents, loamy substratum						
UnrD. Urban land-Udarents, soft bedrock substratum						
W. Water						
WaaAV----------------Wakeland	2w	121	43	---	4.0	8.0
WaaAW----------------Wakeland	2w	125	44	43	4.1	8.2
WhdD2----------------Wellrock-Gnawbone-Spickert	4e	64	25	30	2.1	4.2
WokAV----------------Wilbur	2w	120	42	---	4.0	8.0
WokAW----------------Wilbur	2w	125	44	43	4.1	8.2
WomAK----------------Wilhite	3w	96	34	36	3.2	6.4

* Animal unit month: The amount of forage or feed required to feed one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Table 7.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the map unit name)

Map symbol	Map unit name
BbhA	Bartle silt loam, 0 to 2 percent slopes (where drained)
BcrAQ	Beanblossom silt loam, 1 to 3 percent slopes, rarely flooded
BcrAW	Beanblossom silt loam, 1 to 3 percent slopes, occasionally flooded, very brief duration
BlvAW	Kintner loam, 1 to 3 percent slopes, occasionally flooded, very brief duration
BuoA	Bromer silt loam, 0 to 2 percent slopes (where drained)
CkkB2	Cincinnati silt loam, 2 to 6 percent slopes, eroded
CtwB	Crider-Bedford-Navilleton silt loams, 2 to 6 percent slopes
CwaAQ	Cuba silt loam, 0 to 2 percent slopes, rarely flooded
EepB	Elkinsville silt loam, 2 to 6 percent slopes
HcbAQ	Hatfield silty clay loam, 0 to 2 percent slopes, rarely flooded (where drained)
HcgAH	Haymond silt loam, 0 to 2 percent slopes, frequently flooded, brief duration (where protected from flooding or not frequently flooded during the growing season)
HcgAV	Haymond silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration (where protected from flooding or not frequently flooded during the growing season)
HcgAW	Haymond silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration
HufAK	Huntington silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
LpoAK	Lindside silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration
MhuA	McGary silt loam, 0 to 2 percent slopes (where drained)
MhyB2	Gatton silt loam, 2 to 6 percent slopes, eroded
NaaA	Nabb silt loam, 0 to 2 percent slopes
NaaB2	Nabb silt loam, 2 to 6 percent slopes, eroded
NbhAK	Newark silt loam, 0 to 2 percent slopes, occasionally flooded, brief duration (where drained)
PcrA	Pekin silt loam, 0 to 2 percent slopes
PcrB2	Pekin silt loam, 2 to 6 percent slopes, eroded
PhaA	Peoga silt loam, 0 to 1 percent slopes (where drained)
ScbA	Sciotoville silt loam, 0 to 2 percent slopes
ScbB2	Sciotoville silt loam, 2 to 6 percent slopes, eroded
SceB2	Scottsburg silt loam, 2 to 4 percent slopes, eroded
SfyB	Shircliff silt loam, 2 to 6 percent slopes
SoaB	Spickert silt loam, 2 to 6 percent slopes
SodB	Spickert silt loam, terrace, 1 to 4 percent slopes
StaAQ	Steff silt loam, 0 to 2 percent slopes, rarely flooded
StdAQ	Stendal silt loam, 0 to 2 percent slopes, rarely flooded (where drained)
WaaAV	Wakeland silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration (where drained and either protected from flooding or not frequently flooded during the growing season)
WaaAW	Wakeland silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration (where drained)
WokAV	Wilbur silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration (where protected from flooding or not frequently flooded during the growing season)
WokAW	Wilbur silt loam, 0 to 2 percent slopes, occasionally flooded, very brief duration
WomAK	Wilhite silty clay loam, 0 to 1 percent slopes, occasionally flooded, brief duration (where drained)

Table 8.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
BbhA:					
Bartle	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, cockspur hawthorn, nannyberry, prairie crabapple, roughleaf dogwood.	American plum, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, shingle oak, Shumard's oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
BcrAQ:					
Beanblossom	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
BcrAW:					
Beanblossom	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, chinkapin oak, common hackberry, Norway spruce, shingle oak, swamp white oak.	Baldcypress, eastern cottonwood, red maple.
BgeAZ:					
Birds	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, redosier dogwood, silky dogwood, spicebush.	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood.	Downy hawthorn, hackberry, northern white-cedar, overcup oak.	Baldcypress, blackgum, bur oak, pin oak, swamp white oak, sweetgum.	Eastern cottonwood, imperial Carolina poplar, red maple, river birch, silver maple.
BlvAW:					
Kintner	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, chinkapin oak, common hackberry, Norway spruce, shingle oak, swamp white oak.	Baldcypress, eastern cottonwood, red maple.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
BuoA:					
Bromer	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, cockspur hawthorn, nannyberry, prairie crabapple, roughleaf dogwood.	American plum, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, shingle oak, Shumard's oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
CcaG:					
Caneyville	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood.	American plum, chestnut oak, common persimmon, eastern redcedar, scarlet oak, shagbark hickory, shingle oak, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, white oak.	Baldcypress, eastern cottonwood, eastern white pine.
Rock outcrop.					
CkkB2:					
Cincinnati	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
CldC2:					
Cincinnati	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
Blocher	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
ConC3:					
Coolville	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, cockspur hawthorn, nannyberry, prairie crabapple, roughleaf dogwood.	American plum, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, shingle oak, Shumard's oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
Rarden	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, cockspur hawthorn, nannyberry, prairie crabapple, roughleaf dogwood.	American plum, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, shingle oak, Shumard's oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
CtwB:					
Crider	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.
Bedford	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
Navilleton	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
CwaAQ:					
Cuba	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
EepB:					
Elkinsville	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
EepGQ:					
Elkinsville	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
GgbG:					
Gilwood	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
Brownstown	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
GgfE2:					
Gilwood	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
Wrays	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
GmaG:					
Gnawbone	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
Kurtz	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
HcbAQ:					
Hatfield	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, cockspur hawthorn, nannyberry, prairie crabapple, roughleaf dogwood.	American plum, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, shingle oak, Shumard's oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
HcgAH:					
Haymond-----------	Black chokeberry, gray dogwood, redosier dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, common pawpaw, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac, wild sweet crab.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
HcgAV:					
Haymond-----------	Black chokeberry, gray dogwood, redosier dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, common pawpaw, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac, wild sweet crab.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
HcgAW:					
Haymond-----------	Black chokeberry, gray dogwood, redosier dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, common pawpaw, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac, wild sweet crab.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
HufAK:					
Huntington--------	Black chokeberry, gray dogwood, redosier dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, common pawpaw, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac, wild sweet crab.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
KxkC2:					
Knobcreek	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
Navilleton	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.
KxlC3:					
Knobcreek	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
Haggatt	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood.	American plum, chestnut oak, common persimmon, eastern redcedar, scarlet oak, shagbark hickory, shingle oak, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, white oak.	Baldcypress, eastern cottonwood, eastern white pine.
Caneyville	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood.	American plum, chestnut oak, common persimmon, eastern redcedar, scarlet oak, shagbark hickory, shingle oak, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, white oak.	Baldcypress, eastern cottonwood, eastern white pine.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
KxlE3:					
Knobcreek	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
Haggatt	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood.	American plum, chestnut oak, common persimmon, eastern redcedar, scarlet oak, shagbark hickory, shingle oak, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, white oak.	Baldcypress, eastern cottonwood, eastern white pine.
Caneyville	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood.	American plum, chestnut oak, common persimmon, eastern redcedar, scarlet oak, shagbark hickory, shingle oak, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, white oak.	Baldcypress, eastern cottonwood, eastern white pine.
KxmE2:					
Knobcreek	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
Haggatt	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
KxmE2:					
Caneyville	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood.	American plum, chestnut oak, common persimmon, eastern redcedar, scarlet oak, shagbark hickory, shingle oak, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, white oak.	Baldcypress, eastern cottonwood, eastern white pine.
KxoC2:					
Knobcreek	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
Navilleton	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.
Haggatt	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.
KxpD2:					
Knobcreek	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
KxpD2:					
Haggatt	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.
Caneyville	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood.	American plum, chestnut oak, common persimmon, eastern redcedar, scarlet oak, shagbark hickory, shingle oak, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, white oak.	Baldcypress, eastern cottonwood, eastern white pine.
LpoAK:					
Lindside	Black chokeberry, gray dogwood, redosier dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, common pawpaw, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac, wild sweet crab.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
McnGQ:					
Markland	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.
McpC3:					
Markland	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
McuDQ: Markland	Black chokeberry, gray dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, Washington hawthorn.	Black cherry, black oak, black walnut, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, pecan, shingle oak, swamp white oak, white oak.	Baldcypress, black cherry, cherrybark oak, eastern white pine, pin oak, swamp chestnut oak, sweetgum, tuliptree.
MhuA: McGary	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, redosier dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, blackhaw, cockspur hawthorn, nannyberry, pawpaw, prairie crabapple, roughleaf dogwood, speckled alder.	American plum, common persimmon, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Cherrybark oak, eastern cottonwood, red maple, river birch, silver maple, sweetgum.
MhyB2: Gatton	American elder, black chokeberry, common juniper, coralberry, gray dogwood, highbush cranberry, ninebark, redosier dogwood, silky dogwood, spicebush.	Arrowwood, blackhaw, hazelnut, nannyberry, prairie crabapple, roughleaf dogwood, shining sumac, smooth sumac, staghorn sumac, witchhazel.	American plum, eastern redcedar, hackberry, northern white-cedar, serviceberry, Washington hawthorn.	Baldcypress, black oak, blackgum, bur oak, chinkapin oak, northern red oak, Norway spruce, tuliptree, Virginia pine, white oak, white, spruce.	Eastern cottonwood, imperial Carolina poplar, red maple, river birch, silver maple.
NaaA: Nabb	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
NaaB2: Nabb	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
NbhAK:					
Newark	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, cockspur hawthorn, nannyberry, roughleaf dogwood.	American plum, arrowwood, common persimmon, eastern redcedar, prairie crabapple, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
PcrA:					
Pekin	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
PcrB2:					
Pekin	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
PhaA:					
Peoga	Black chokeberry, common buttonbush, gray dogwood, ninebark, northern spicebush, silky dogwood.	Cockspur hawthorn, highbush blueberry.	Eastern redcedar, northern white-cedar, shellbark hickory.	Blackgum, pecan, shingle oak, swamp chestnut oak, swamp white oak.	American sycamore, baldcypress, eastern cottonwood pin oak, red maple, river birch, silver maple, sweetgum.
Pml.					
Pits, quarry					
Ppu.					
Pits, sand and gravel					
RctD3:					
Rarden	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, cockspur hawthorn, nannyberry, prairie crabapple, roughleaf dogwood.	American plum, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, shingle oak, Shumard's oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
RctD3: Coolville	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, cockspur hawthorn, nannyberry, prairie crabapple, roughleaf dogwood.	American plum, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, shingle oak, Shumard's oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
ScbA: Sciotoville	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
ScbB2: Sciotoville	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
SceB2: Scottsburg	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
SfyB: Shircliff	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
SoaB:					
Spickert	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
SodB:					
Spickert	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
SolC2:					
Spickert	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
Wrays	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
StaAQ:					
Steff	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
StdAQ:					
Stendal	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, arrowwood, cockspur hawthorn, nannyberry, prairie crabapple, roughleaf dogwood.	American plum, eastern redcedar, northern white-cedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, Norway spruce, shingle oak, Shumard's oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
Uaa. Udorthents, cut and filled					
UaoAK: Udifluvents, cut and filled.					
Urban land.					
UedA: Urban land.					
Aquents, clayey substratum.					
UndAY: Urban land.					
Udifluvents.					
UneC: Urban land.					
Udarents, clayey substratum.					
UngB: Urban land.					
Udarents, fragipan substratum.					
UnkB: Urban land.					
Udarents, silty substratum.					
UnlC: Urban land.					
Udarents, hard bedrock substratum.					
UnpA: Urban land.					
Udarents, loamy substratum.					

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
UnrD:					
Urban land.					
Udarents, soft bedrock substratum.					
W.					
Water					
WaaAV:					
Wakeland----------	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, cockspur hawthorn, nannyberry, roughleaf dogwood.	American plum, arrowwood, common persimmon, eastern redcedar, prairie crabapple, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
WaaAW:					
Wakeland----------	American elder, black chokeberry, common buttonbush, highbush cranberry, ninebark, redosier dogwood, spicebush.	American hazelnut, American witchhazel, cockspur hawthorn, nannyberry, roughleaf dogwood.	American plum, arrowwood, common persimmon, eastern redcedar, prairie crabapple, Washington hawthorn.	Blackgum, bur oak, common hackberry, eastern white pine, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
WhdD2:					
Wellrock----------	Black chokeberry, gray dogwood, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, highbush blueberry.	American plum, common persimmon, eastern redcedar, shagbark hickory, sugar maple, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, northern red oak, Norway spruce, shingle oak, swamp chestnut oak, swamp white oak, white oak.	Baldcypress, cherrybark oak, eastern white pine, pin oak, sweetgum, tuliptree.
Gnawbone----------	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.

Table 8.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
WhdD2:					
Spickert, soft bedrock substratum	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, prairie crabapple, roughleaf dogwood, smooth sumac.	American plum, chestnut oak, common persimmon, eastern redcedar, shagbark hickory, Virginia pine, Washington hawthorn.	Black oak, blackgum, bur oak, common hackberry, Norway spruce, shingle oak, white oak.	Baldcypress, eastern cottonwood, eastern white pine, red maple.
WokAV:					
Wilbur	Black chokeberry, gray dogwood, redosier dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, common pawpaw, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac, wild sweet crab.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
WokAW:					
Wilbur	Black chokeberry, gray dogwood, redosier dogwood, silky dogwood, spicebush.	American hazelnut, American witchhazel, blackhaw, cockspur hawthorn, common pawpaw, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac, wild sweet crab.	American plum, common persimmon, eastern redcedar, Washington hawthorn.	Blackgum, bur oak, common hackberry, pecan, shingle oak, swamp chestnut oak, swamp white oak.	Baldcypress, cherrybark oak, eastern cottonwood, pin oak, red maple, river birch, silver maple, sweetgum.
WomAK:					
Wilhite	American elder, black chokeberry, gray dogwood, highbush cranberry, ninebark, redosier dogwood, silky dogwood, spicebush.	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood.	Downy hawthorn, hackberry, northern white-cedar, overcup oak.	Baldcypress, blackgum, bur oak, pin oak, swamp white oak, sweetgum.	Eastern cottonwood, imperial Carolina poplar, red maple, river birch, silver maple.

Table 9.--Forestland Productivity

(An asterisk following a species name indicates that the species is not recommended for planting in low-lying areas of the soil listed. Absence of an entry indicates that information was not available)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
BbhA:				
Bartle	White oak	75	57	American beech, American sycamore, baldcypress, bitternut hickory, blackgum, bur oak, cherrybark oak, eastern cottonwood, eastern white pine, northern red oak, Norway spruce, pin oak, shingle oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, white oak.
	Sweetgum	80	86	
	Tuliptree	85	86	
BcrAQ:				
Beanblossom	---	---	---	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
BcrAW:				
Beanblossom	---	---	---	Baldcypress, bitternut hickory, blackgum, bur oak, eastern cottonwood, eastern redcedar, pin oak, red maple, river birch, shingle oak, swamp white oak.
BgeAZ:				
Birds	Pin oak	90	72	Baldcypress, blackgum, bur oak, overcup oak, pin oak, red maple, shellbark hickory, silver maple, swamp white oak, sweetgum.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
BlvAW:				
Kintner	---	---	---	Baldcypress, bitternut hickory, blackgum, bur oak, eastern cottonwood, eastern redcedar, pin oak, red maple, river birch, shingle oak, swamp white oak.
BuoA:				
Bromer	Sweetgum	80	86	American beech, American sycamore, baldcypress, bitternut hickory, blackgum, bur oak, cherrybark oak, eastern cottonwood, eastern white pine*, northern red oak*, Norway spruce, pin oak, shingle oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, white oak*.
	Tuliptree	85	86	
	White oak	75	57	
CcaG:				
Caneyville	Black oak	71	57	Black cherry, black oak, blackgum, bur oak, chestnut oak, chinkapin oak, eastern white pine, northern red oak, pignut hickory, scarlet oak, shagbark hickory, shingle oak, sugar maple, tuliptree, white oak.
	Tuliptree	90	86	
	White oak	64	43	
Rock outcrop.				

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
CkkB2:				
Cincinnati	Northern red oak	80	57	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
CldC2:				
Cincinnati	Northern red oak	80	57	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
Blocher	Northern red oak	76	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	90	86	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
ConC3:				
Coolville	Northern red oak	66	43	American beech, American sycamore, baldcypress, bitternut hickory, blackgum, bur oak, cherrybark oak, eastern cottonwood, eastern white pine, northern red oak, Norway spruce, pin oak, shingle oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, white oak.
Rarden	Black oak	71	57	American beech, American sycamore, baldcypress, bitternut hickory, blackgum, bur oak, cherrybark oak, eastern cottonwood, eastern white pine, northern red oak, Norway spruce, pin oak, shingle oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, white oak.
CtwB:				
Crider	Tuliptree	98	100	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
	White oak	90	72	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
CtwB:				
Bedford	Northern red oak	75	57	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
	Sugar maple	75	43	
	Tuliptree	90	86	
	White oak	70	57	
Navilleton	---	---	---	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
CwaAQ:				
Cuba	Tuliptree	100	114	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
EepB:				
Elkinsville	White oak	90	72	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	118	143	
EepGQ:				
Elkinsville	White oak	90	72	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	118	143	
GgbG:				
Gilwood	---	---	---	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
GgbG:				
Brownstown	Black oak	50	29	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
GgfE2:				
Gilwood	---	---	---	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
Wrays	Tuliptree	90	86	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	White oak	70	57	
GmaG:				
Gnawbone	---	---	---	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
GmaG:				
Kurtz	Northern red oak	60	43	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
HcbAQ:				
Hatfield	Sweetgum	88	100	American beech, American sycamore, baldcypress, bitternut hickory, blackgum, bur oak, cherrybark oak, eastern cottonwood, eastern white pine, northern red oak, Norway spruce, pin oak, shingle oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, white oak.
	Tuliptree	85	86	
	White oak	75	57	
HcgAH:				
Haymond	---	---	---	Baldcypress, bitternut hickory, black walnut, bur oak, cherrybark oak, Kentucky coffeetree, overcup oak, pecan, pin oak, shellbark hickory, shingle oak, Shumard's oak, swamp chestnut oak, swamp white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
HcgAV:				
Haymond	---	---	---	Baldcypress, bitternut hickory, black walnut, bur oak, cherrybark oak, Kentucky coffeetree, overcup oak, pecan, pin oak, shellbark hickory, shingle oak, Shumard's oak, swamp chestnut oak, swamp white oak.
HcgAW:				
Haymond	Black walnut	70	0	Baldcypress, bitternut hickory, black walnut, bur oak, cherrybark oak, Kentucky coffeetree, overcup oak, pecan, pin oak, shellbark hickory, shingle oak, Shumard's oak, swamp chestnut oak, swamp white oak.
HufAK:				
Huntington	---	---	---	Baldcypress, bitternut hickory, black walnut, bur oak, cherrybark oak, Kentucky coffeetree, overcup oak, pecan, pin oak, shellbark hickory, shingle oak, Shumard's oak, swamp chestnut oak, swamp white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
KxkC2:				
Knobcreek	Northern red oak	76	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	86	86	
Navilleton	---	---	---	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
KxlC3:				
Knobcreek	Northern red oak	76	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	86	86	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
KxlC3:				
Haggatt	Tuliptree	86	86	Black cherry, black oak, blackgum, bur oak, chestnut oak, chinkapin oak, eastern white pine, northern red oak, pignut hickory, scarlet oak, shagbark hickory, shingle oak, sugar maple, tuliptree, white oak.
	White oak	68	57	
Caneyville	Black oak	65	43	Black cherry, black oak, blackgum, bur oak, chestnut oak, chinkapin oak, eastern white pine, northern red oak, pignut hickory, scarlet oak, shagbark hickory, shingle oak, sugar maple, tuliptree, white oak.
	Chinkapin oak	51	29	
	Scarlet oak	53	43	
KxlE3:				
Knobcreek	Northern red oak	76	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	86	86	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
KxlE3:				
Haggatt	Tuliptree	86	86	Black cherry, black oak, blackgum, bur oak, chestnut oak, chinkapin oak, eastern white pine, northern red oak, pignut hickory, scarlet oak, shagbark hickory, shingle oak, sugar maple, tuliptree, white oak.
	White oak	68	57	
Caneyville	Black oak	65	43	Black cherry, black oak, blackgum, bur oak, chestnut oak, chinkapin oak, eastern white pine, northern red oak, pignut hickory, scarlet oak, shagbark hickory, shingle oak, sugar maple, tuliptree, white oak.
	Chinkapin oak	51	29	
	Eastern redcedar	36	43	
	Scarlet oak	53	43	
KxmE2:				
Knobcreek	Northern red oak	76	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	86	86	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
KxmE2:				
Haggatt	Tuliptree	86	86	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
	White oak	68	57	
Caneyville	Black oak	71	57	Black cherry, black oak, blackgum, bur oak, chestnut oak, chinkapin oak, eastern white pine, northern red oak, pignut hickory, scarlet oak, shagbark hickory, shingle oak, sugar maple, tuliptree, white oak.
	Tuliptree	90	86	
	White oak	64	43	
KxoC2:				
Knobcreek	Northern red oak	76	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	86	86	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
KxoC2:				
Navilleton	---	---	---	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
Haggatt	Tuliptree	86	86	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
	White oak	68	57	
KxpD2:				
Knobcreek	Northern red oak	76	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	86	86	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
KxpD2:				
Haggatt	Tuliptree	86	86	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
	White oak	68	57	
Caneyville	Black oak	71	57	Black cherry, black oak, blackgum, bur oak, chestnut oak, chinkapin oak, eastern white pine, northern red oak, pignut hickory, scarlet oak, shagbark hickory, shingle oak, sugar maple, tuliptree, white oak.
	White oak	64	43	
LpoAK:				
Lindside	---	---	---	Baldcypress, bitternut hickory, black walnut, bur oak, cherrybark oak, Kentucky coffeetree, overcup oak, pecan, pin oak, shellbark hickory, shingle oak, Shumard's oak, swamp chestnut oak, swamp white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
McnGQ:				
Markland	Tuliptree	95	100	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
McpC3:				
Markland	Tuliptree	95	100	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.
McuDQ:				
Markland	Tuliptree	95	100	American beech, black cherry, black oak, black walnut, bur oak, chinkapin oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pignut hickory, shagbark hickory, Shumard's oak, sugar maple, tuliptree, white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
MhuA:				
McGary	Sweetgum	80	86	American beech, baldcypress, bitternut hickory, bur oak, cherrybark oak, eastern white pine, Kentucky coffeetree, northern red oak, Norway spruce, pecan, pin oak, shingle oak, Shumard's oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, tuliptree, white oak.
	White oak	70	57	
	Tuliptree	85	86	
MhyB2:				
Gatton	White oak	90	72	Black oak, blackgum, bur oak, chinkapin oak, eastern white pine, northern red oak, shagbark hickory, shingle oak, sugar maple, tuliptree, white oak.
	Tuliptree	98	100	
NaaA:				
Nabb	Northern red oak	80	57	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
	White oak	80	57	
NaaB2:				
Nabb	Northern red oak	80	57	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
	White oak	80	57	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
NbhAK:				
Newark	Pin oak	96	72	American sycamore, baldcypress, blackgum, bur oak, overcup oak, pecan, pin oak, red maple, river birch, shellbark hickory, shingle oak, Shumard's oak, silver maple, swamp chestnut oak, swamp white oak, sweetgum.
	Sweetgum	85	86	
PcrA:				
Pekin	Sugar maple	75	43	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	85	86	
	White oak	70	57	
PcrB2:				
Pekin	Sugar maple	75	43	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree	85	86	
	White oak	70	57	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
PhaA:				
Peoga	Pin oak	100	86	American sycamore, baldcypress, blackgum, bur oak, eastern cottonwood, overcup oak, pin oak, red maple, Shumard's oak, silver maple, swamp white oak, sweetgum.
	Sweetgum	90	100	
Pml. Pits, quarry				
Ppu. Pits, sand and gravel				
RctD3:				
Rarden	Black oak	71	57	American beech, American sycamore, baldcypress, bitternut hickory, blackgum, bur oak, cherrybark oak, eastern cottonwood, eastern white pine, northern red oak, Norway spruce, pin oak, shingle oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, white oak.
Coolville	Northern red oak	66	43	American beech, American sycamore, baldcypress, bitternut hickory, blackgum, bur oak, cherrybark oak, eastern cottonwood, eastern white pine, northern red oak, Norway spruce, pin oak, shingle oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
ScbA:				
Sciotoville------------	Northern red oak----	80	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Eastern white pine--	90	172	
	Tuliptree----------	90	86	
	Sugar maple---------	80	57	
ScbB2:				
Sciotoville------------	Northern red oak----	80	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Eastern white pine--	90	172	
	Tuliptree----------	90	86	
	Sugar maple---------	80	57	
SceB2:				
Scottsburg-------------	Northern red oak----	70	57	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	Tuliptree----------	85	86	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
SfyB:				
Shircliff	Tuliptree	105	114	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
SoaB:				
Spickert	White oak	60	43	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
	Tuliptree	100	114	
	Black oak	90	72	
SodB:				
Spickert	Black oak	90	72	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
	Tuliptree	100	114	
	White oak	60	43	
SolC2:				
Spickert	White oak	60	43	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
	Tuliptree	100	114	
	Black oak	90	72	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
SolC2:				
Wrays	Tuliptree	90	86	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	White oak	70	57	
StaAQ:				
Steff	Tuliptree	107	114	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
StdAQ:				
Stendal	Sweetgum	85	86	American beech, American sycamore, baldcypress, bitternut hickory, blackgum, bur oak, cherrybark oak, eastern cottonwood, eastern white pine*, northern red oak*, Norway spruce, pin oak, shingle oak, silver maple, sugar maple, swamp chestnut oak, swamp white oak, sweetgum, white oak*.
	Tuliptree	90	86	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
Uaa.				
Udorthents, cut and filled				
UaoAK:				
Udifluvents, cut and filled.				
Urban land.				
UedA:				
Urban land.				
Aquents, clayey substratum.				
UndAY:				
Urban land.				
Udifluvents.				
UneC:				
Urban land.				
Udarents, clayey substratum.				
UngB:				
Urban land.				
Udarents, fragipan substratum.				
UnkB:				
Urban land.				
Udarents, silty substratum.				
UnlC:				
Urban land.				
Udarents, hard bedrock substratum.				
UnpA:				
Urban land.				
Udarents, loamy substratum.				
UnrD:				
Urban land.				
Udarents, soft bedrock substratum.				
W.				
Water				

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Potential productivity: Site index	Potential productivity: Volume of wood fiber	Trees to plant
			cu ft/ac	
WaaAV:				
Wakeland	Pin oak	90	72	American sycamore, baldcypress, blackgum, bur oak, overcup oak, pecan, pin oak, red maple, river birch, shellbark hickory, shingle oak, Shumard's oak, silver maple, swamp chestnut oak, swamp white oak, sweetgum.
	Sweetgum	88	100	
WaaAW:				
Wakeland	Pin oak	90	72	American sycamore, baldcypress, blackgum, bur oak, overcup oak, pecan, pin oak, red maple, river birch, shellbark hickory, shingle oak, Shumard's oak, silver maple, swamp chestnut oak, swamp white oak, sweetgum.
	Sweetgum	88	100	
WhdD2:				
Wellrock	Tuliptree	90	86	American beech, black oak, blackgum, bur oak, cherrybark oak, chestnut oak, common persimmon, eastern white pine, northern red oak, Norway spruce, scarlet oak, shagbark hickory, shingle oak, southern red oak, sugar maple, swamp chestnut oak, tuliptree, white oak.
	White oak	70	57	

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
WhdD2:				
Gnawbone	---	---	---	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
Spickert, soft bedrock substratum	White oak	60	43	Baldcypress, black oak, blackgum, bur oak, chestnut oak, common persimmon, eastern white pine, scarlet oak, shingle oak, southern red oak, Virginia pine, white oak.
	Tuliptree	100	114	
WokAV:				
Wilbur	---	---	---	Baldcypress, bitternut hickory, black walnut, bur oak, cherrybark oak, Kentucky coffeetree, overcup oak, pecan, pin oak, shellbark hickory, shingle oak, Shumard's oak, swamp chestnut oak, swamp white oak.
WokAW:				
Wilbur	---	---	---	Baldcypress, bitternut hickory, black walnut, bur oak, cherrybark oak, Kentucky coffeetree, overcup oak, pecan, pin oak, shellbark hickory, shingle oak, Shumard's oak, swamp chestnut oak, swamp white oak.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to plant
			cu ft/ac	
WomAK:				
Wilhite	Pin oak	86	72	Baldcypress, blackgum, bur oak, overcup oak, pin oak, red maple, shellbark hickory, silver maple, swamp white oak, sweetgum.
	Sweetgum	90	100	

Table 10a.--Forestland 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	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
BbhA:							
Bartle--------------	83	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
BcrAQ:							
Beanblossom---------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
BcrAW:							
Beanblossom---------	89	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
BgeAZ:							
Birds---------------	95	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Wetness	1.00	Flooding	1.00	Wetness	0.50
		Low strength	0.50	Wetness	1.00		
				Low strength	0.50		
BlvAW:							
Kintner-------------	95	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
BuoA:							
Bromer--------------	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50				
CcaG:							
Caneyville----------	53	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Low strength	0.50	Landslides	0.50		
Rock outcrop--------	15	Not rated		Not rated		Not rated	
CkkB2:							
Cincinnati----------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
CldC2:							
Cincinnati----------	42	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Landslides	0.10	Low strength	0.50		
				Landslides	0.10		
Blocher-------------	34	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Landslides	0.10	Low strength	0.50		
				Landslides	0.10		

Table 10a.--Forestland Management--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
ConC3:							
Coolville-----------	45	Moderate		Moderately suited		Severe	
		Landslides	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
				Landslides	0.50		
				Wetness	0.50		
Rarden-------------	45	Moderate		Moderately suited		Severe	
		Landslides	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
				Landslides	0.50		
				Wetness	0.50		
CtwB:							
Crider-------------	39	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50				
Bedford------------	29	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Wetness	0.50		
Navilleton---------	28	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50				
CwaAQ:							
Cuba---------------	92	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
EepB:							
Elkinsville--------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
EepGQ:							
Elkinsville--------	85	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Low strength	0.50	Landslides	0.50		
GgbG:							
Gilwood------------	45	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Low strength	0.50	Landslides	0.50		
Brownstown---------	35	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
				Landslides	0.50		
GgfE2:							
Gilwood------------	42	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Slope	0.50	Landslides	0.50		

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GgfE2:							
Wrays---------------	36	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
		Restrictive layer	0.50	Landslides	0.50		
GmaG:							
Gnawbone------------	48	Severe		Poorly suited		Severe	
		Landslides	1.00	Slope	1.00	Low strength	1.00
		Slope	1.00	Landslides	1.00		
		Low strength	0.50	Low strength	0.50		
Kurtz---------------	32	Severe		Poorly suited		Severe	
		Landslides	1.00	Slope	1.00	Low strength	1.00
		Slope	1.00	Landslides	1.00		
		Low strength	0.50	Low strength	0.50		
HcbAQ:							
Hatfield------------	80	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
HcgAH:							
Haymond-------------	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
HcgAV:							
Haymond-------------	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
HcgAW:							
Haymond-------------	82	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
HufAK:							
Huntington----------	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
KxkC2:							
Knobcreek-----------	37	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Stickiness/slope	0.50	Low strength	0.50		
		Landslides	0.10	Landslides	0.10		
Navilleton----------	35	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Stickiness/slope	0.50	Low strength	0.50		
		Landslides	0.10	Landslides	0.10		
KxlC3:							
Knobcreek-----------	33	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Stickiness/slope	0.50	Low strength	0.50		
		Landslides	0.10	Landslides	0.10		

Table 10a.--Forestland Management--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
KxlC3:							
Haggatt------------	26	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Landslides	0.10	Low strength	0.50		
				Landslides	0.10		
Caneyville----------	24	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Restrictive layer	0.50	Low strength	0.50		
		Landslides	0.10	Landslides	0.10		
KxlE3:							
Knobcreek-----------	35	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
		Stickiness/slope	0.50	Landslides	0.50		
Haggatt------------	22	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
		Restrictive layer	0.50	Landslides	0.50		
Caneyville----------	21	Severe		Poorly suited		Severe	
		Restrictive layer	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Slope	0.50	Landslides	0.50		
KxmE2:							
Knobcreek-----------	33	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
		Stickiness/slope	0.50	Landslides	0.50		
Haggatt------------	22	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
		Restrictive layer	0.50	Landslides	0.50		
Caneyville----------	20	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Slope	0.50	Landslides	0.50		
KxoC2:							
Knobcreek-----------	29	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Slope	0.50		
		Landslides	0.10	Landslides	0.10		
Navilleton----------	28	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Stickiness/slope	0.50	Slope	0.50		
		Landslides	0.10	Landslides	0.10		
Haggatt------------	27	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
		Landslides	0.10	Slope	0.50		
				Landslides	0.10		

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KxpD2:							
Knobcreek-----------	35	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
		Stickiness/slope	0.50	Landslides	0.50		
Haggatt-------------	31	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
		Restrictive layer	0.50	Landslides	0.50		
Caneyville----------	30	Moderate		Poorly suited		Severe	
		Restrictive layer	0.50	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Slope	0.50	Landslides	0.50		
LpoAK:							
Lindside------------	82	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
McnGQ:							
Markland------------	90	Severe		Poorly suited		Severe	
		Slope	1.00	Slope	1.00	Low strength	1.00
		Landslides	0.50	Low strength	0.50		
		Low strength	0.50	Landslides	0.50		
McpC3:							
Markland------------	61	Moderate		Moderately suited		Severe	
		Landslides	0.50	Slope	0.50	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
				Landslides	0.50		
McuDQ:							
Markland------------	70	Moderate		Poorly suited		Severe	
		Landslides	0.50	Slope	1.00	Low strength	1.00
		Slope	0.50	Low strength	0.50		
				Landslides	0.50		
MhuA:							
McGary--------------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
MhyB2:							
Gatton--------------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Wetness	0.50		
NaaA:							
Nabb----------------	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
NaaB2:							
Nabb----------------	78	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NbhAK:							
Newark	80	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Wetness	1.00	Low strength	0.50		
		Low strength	0.50				
PcrA:							
Pekin	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
PcrB2:							
Pekin	85	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
PhaA:							
Peoga	83	Moderate		Poorly suited		Severe	
		Low strength	0.50	Ponding	1.00	Low strength	1.00
				Wetness	0.50		
				Low strength	0.50		
Pml:							
Pits, quarry	85	Not rated		Not rated		Not rated	
Ppu:							
Pits, sand and gravel	80	Not rated		Not rated		Not rated	
RctD3:							
Rarden	40	Severe		Poorly suited		Severe	
		Landslides	1.00	Landslides	1.00	Low strength	1.00
		Slope	0.50	Slope	1.00		
				Low strength	0.50		
				Wetness	0.50		
Coolville	19	Severe		Poorly suited		Severe	
		Landslides	1.00	Landslides	1.00	Low strength	1.00
		Slope	0.50	Slope	1.00		
				Low strength	0.50		
				Wetness	0.50		
ScbA:							
Sciotoville	70	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
ScbB2:							
Sciotoville	75	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
SceB2:							
Scottsburg	96	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
SfyB:							
Shircliff	75	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
SoaB:							
Spickert------------	95	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Wetness	0.50		
SodB:							
Spickert------------	90	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
				Wetness	0.50		
SolC2:							
Spickert------------	44	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Landslides	0.10	Low strength	0.50		
				Wetness	0.50		
				Landslides	0.10		
Wrays---------------	32	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Landslides	0.10	Low strength	0.50		
				Landslides	0.10		
StaAQ:							
Steff---------------	86	Moderate		Moderately suited		Severe	
		Low strength	0.50	Low strength	0.50	Low strength	1.00
StdAQ:							
Stendal-------------	88	Severe		Moderately suited		Severe	
		Wetness	1.00	Low strength	0.50	Low strength	1.00
		Low strength	0.50				
Uaa:							
Udorthents, cut and filled------------	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled------------	65	Not rated		Not rated		Not rated	
Urban land----------	25	Not rated		Not rated		Not rated	
UedA:							
Urban land----------	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum---------	25	Not rated		Not rated		Not rated	
UndAY:							
Urban land----------	65	Not rated		Not rated		Not rated	
Udifluvents---------	25	Not rated		Not rated		Not rated	
UneC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum---------	30	Not rated		Not rated		Not rated	

Table 10a.--Forestland Management--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
UngB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum---------	30	Not rated		Not rated		Not rated	
UnkB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, silty substratum---------	30	Not rated		Not rated		Not rated	
UnlC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	
UnpA:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum---------	30	Not rated		Not rated		Not rated	
UnrD:							
Urban land----------	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland-----------	83	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Wetness	1.00	Low strength	0.50		
		Low strength	0.50				
WaaAW:							
Wakeland-----------	82	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Wetness	1.00	Low strength	0.50		
		Low strength	0.50				
WhdD2:							
Wellrock-----------	33	Severe		Poorly suited		Severe	
		Landslides	1.00	Landslides	1.00	Low strength	1.00
				Slope	1.00		
				Low strength	0.50		
Gnawbone-----------	31	Severe		Poorly suited		Severe	
		Landslides	1.00	Landslides	1.00	Low strength	1.00
		Low strength	0.50	Slope	1.00		
				Low strength	0.50		

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WhdD2:							
Spickert, soft bedrock substratum	25	Moderate		Moderately suited		Severe	
		Low strength	0.50	Slope	0.50	Low strength	1.00
		Landslides	0.10	Low strength	0.50		
				Wetness	0.50		
				Landslides	0.10		
WokAV:							
Wilbur--------------	78	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
WokAW:							
Wilbur--------------	83	Severe		Poorly suited		Severe	
		Flooding	1.00	Flooding	1.00	Low strength	1.00
		Low strength	0.50	Low strength	0.50		
WomAK:							
Wilhite-------------	85	Severe		Poorly suited		Severe	
		Flooding	1.00	Ponding	1.00	Low strength	1.00
		Wetness	1.00	Flooding	1.00		
		Low strength	0.50	Low strength	0.50		

Table 10b.--Forestland 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	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
BbhA:							
Bartle	83	Slight		Slight		Moderately suited	
						Low strength	0.50
BcrAQ:							
Beanblossom	90	Slight		Slight		Moderately suited	
						Low strength	0.50
BcrAW:							
Beanblossom	89	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
BgeAZ:							
Birds	95	Slight		Slight		Poorly suited	
						Ponding	1.00
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
BlvAW:							
Kintner	95	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
BuoA:							
Bromer	95	Slight		Slight		Moderately suited	
						Low strength	0.50
CcaG:							
Caneyville	53	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
CkkB2:							
Cincinnati	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
CldC2:							
Cincinnati	42	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.10
Blocher	34	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.10

Table 10b.--Forestland Management--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
ConC3:							
Coolville-----------	45	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.50
						Wetness	0.50
Rarden--------------	45	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.50
						Wetness	0.50
CtwB:							
Crider--------------	39	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
Bedford-------------	29	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50
Navilleton----------	28	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
CwaAQ:							
Cuba----------------	92	Slight		Slight		Moderately suited	
						Low strength	0.50
EepB:							
Elkinsville---------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
EepGQ:							
Elkinsville---------	85	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
GgbG:							
Gilwood-------------	45	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Brownstown----------	35	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
GgfE2:							
Gilwood-------------	42	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Wrays---------------	36	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50

Table 10b.--Forestland Management--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
GmaG:							
Gnawbone------------	48	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Landslides	1.00
						Low strength	0.50
Kurtz---------------	32	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Landslides	1.00
						Low strength	0.50
HcbAQ:							
Hatfield------------	80	Slight		Slight		Moderately suited	
						Low strength	0.50
HcgAH:							
Haymond-------------	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
HcgAV:							
Haymond-------------	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
HcgAW:							
Haymond-------------	82	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
HufAK:							
Huntington----------	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
KxkC2:							
Knobcreek-----------	37	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.10
Navilleton----------	35	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.10
KxlC3:							
Knobcreek-----------	33	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.10
Haggatt-------------	26	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.10

Table 10b.--Forestland Management--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
KxlC3:							
Caneyville----------	24	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.10
KxlE3:							
Knobcreek-----------	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Haggatt-------------	22	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Caneyville----------	21	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
KxmE2:							
Knobcreek-----------	33	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Haggatt-------------	22	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Caneyville----------	20	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
KxoC2:							
Knobcreek-----------	29	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Low strength	0.50
						Slope	0.50
						Landslides	0.10
Navilleton----------	28	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Landslides	0.10
Haggatt-------------	27	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Low strength	0.50
						Slope	0.50
						Landslides	0.10

Table 10b.--Forestland Management--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
KxpD2:							
Knobcreek	35	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Haggatt	31	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
Caneyville	30	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
LpoAK:							
Lindside	82	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
McnGQ:							
Markland	90	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
McpC3:							
Markland	61	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.50
McuDQ:							
Markland	70	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Landslides	0.50
MhuA:							
McGary	90	Slight		Slight		Moderately suited	
						Low strength	0.50
MhyB2:							
Gatton	90	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50
NaaA:							
Nabb	85	Slight		Slight		Moderately suited	
						Low strength	0.50
NaaB2:							
Nabb	78	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
NbhAK:							
Newark	80	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50

Table 10b.--Forestland Management--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
PcrA:							
Pekin	90	Slight		Slight		Moderately suited	
						Low strength	0.50
PcrB2:							
Pekin	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
PhaA:							
Peoga	83	Slight		Slight		Poorly suited	
						Ponding	1.00
						Wetness	0.50
						Low strength	0.50
Pml:							
Pits, quarry	85	Not rated		Not rated		Not rated	
Ppu:							
Pits, sand and gravel	80	Not rated		Not rated		Not rated	
RctD3:							
Rarden	40	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Landslides	1.00
						Slope	1.00
						Low strength	0.50
						Wetness	0.50
Coolville	19	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Landslides	1.00
						Slope	1.00
						Low strength	0.50
						Wetness	0.50
ScbA:							
Sciotoville	70	Slight		Slight		Moderately suited	
						Low strength	0.50
ScbB2:							
Sciotoville	75	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
SceB2:							
Scottsburg	96	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
SfyB:							
Shircliff	75	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
SoaB:							
Spickert	95	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50
SodB:							
Spickert	90	Slight		Slight		Moderately suited	
						Low strength	0.50
						Wetness	0.50

Table 10b.--Forestland Management--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
SolC2:							
Spickert------------	44	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
						Landslides	0.10
Wrays---------------	32	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Landslides	0.10
StaAQ:							
Steff---------------	86	Slight		Slight		Moderately suited	
						Low strength	0.50
StdAQ:							
Stendal-------------	88	Slight		Slight		Moderately suited	
						Low strength	0.50
Uaa:							
Udorthents, cut and filled------------	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled------------	65	Not rated		Not rated		Not rated	
Urban land----------	25	Not rated		Not rated		Not rated	
UedA:							
Urban land----------	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum---------	25	Not rated		Not rated		Not rated	
UndAY:							
Urban land----------	65	Not rated		Not rated		Not rated	
Udifluvents---------	25	Not rated		Not rated		Not rated	
UneC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum---------	30	Not rated		Not rated		Not rated	
UngB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum---------	30	Not rated		Not rated		Not rated	
UnkB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, silty substratum---------	30	Not rated		Not rated		Not rated	

Table 10b.--Forestland Management--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
UnlC:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	
UnpA:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum	30	Not rated		Not rated		Not rated	
UnrD:							
Urban land	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland	83	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
WaaAW:							
Wakeland	82	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
WhdD2:							
Wellrock	33	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Landslides	1.00
						Slope	1.00
						Low strength	0.50
Gnawbone	31	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Landslides	1.00
						Slope	1.00
						Low strength	0.50
Spickert, soft bedrock substratum	25	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
						Landslides	0.10
WokAV:							
Wilbur	78	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
WokAW:							
Wilbur	83	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50

Table 10b.--Forestland Management--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
WomAK:							
Wilhite-------------	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Flooding	1.00
						Low strength	0.50

Table 10c.--Forestland 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	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
BbhA:							
Bartle	83	Well suited		Well suited		Moderately suited	
						Low strength	0.50
BcrAQ:							
Beanblossom	90	Well suited		Well suited		Moderately suited	
						Low strength	0.50
BcrAW:							
Beanblossom	89	Well suited		Well suited		Moderately suited	
						Low strength	0.50
BgeAZ:							
Birds	95	Moderately suited		Moderately suited		Poorly suited	
		Wetness	0.50	Wetness	0.50	Wetness	1.00
						Low strength	0.50
BlvAW:							
Kintner	95	Well suited		Well suited		Moderately suited	
						Low strength	0.50
BuoA:							
Bromer	95	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CcaG:							
Caneyville	53	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
Rock outcrop	15	Not rated		Not rated		Not rated	
CkkB2:							
Cincinnati	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CldC2:							
Cincinnati	42	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Blocher	34	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
ConC3:							
Coolville	45	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		
Rarden	45	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		

Table 10c.--Forestland Management--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
CtwB:							
Crider	39	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Bedford	29	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Navilleton	28	Well suited		Well suited		Moderately suited	
						Low strength	0.50
CwaAQ:							
Cuba	92	Well suited		Well suited		Moderately suited	
						Low strength	0.50
EepB:							
Elkinsville	85	Well suited		Well suited		Moderately suited	
						Low strength	0.50
EepGQ:							
Elkinsville	85	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
						Low strength	0.50
GgbG:							
Gilwood	45	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Brownstown	35	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
GgfE2:							
Gilwood	42	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
				Rock fragments	0.50	Slope	0.50
Wrays	36	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		
GmaG:							
Gnawbone	48	Moderately suited		Unsuited		Poorly suited	
		Slope	0.50	Slope	1.00	Slope	1.00
				Rock fragments	0.50	Low strength	0.50
Kurtz	32	Moderately suited		Unsuited		Moderately suited	
		Slope	0.50	Slope	1.00	Slope	0.50
						Low strength	0.50
HcbAQ:							
Hatfield	80	Well suited		Well suited		Moderately suited	
						Low strength	0.50
HcgAH:							
Haymond	85	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HcgAV:							
Haymond-------------	85	Well suited		Well suited		Moderately suited	
						Low strength	0.50
HcgAW:							
Haymond-------------	82	Well suited		Well suited		Moderately suited	
						Low strength	0.50
HufAK:							
Huntington----------	85	Well suited		Well suited		Moderately suited	
						Low strength	0.50
KxkC2:							
Knobcreek-----------	37	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Navilleton----------	35	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
KxlC3:							
Knobcreek-----------	33	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Haggatt-------------	26	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		
Caneyville----------	24	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		
KxlE3:							
Knobcreek-----------	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
Haggatt-------------	22	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.75		
Caneyville----------	21	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.75		
KxmE2:							
Knobcreek-----------	33	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
Haggatt-------------	22	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
Caneyville----------	20	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.75		

Table 10c.--Forestland Management--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
KxoC2:							
Knobcreek-----------	29	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Navilleton----------	28	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Haggatt-------------	27	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
KxpD2:							
Knobcreek-----------	35	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
Haggatt-------------	31	Well suited		Poorly suited		Moderately suited	
				Slope	0.75	Low strength	0.50
Caneyville----------	30	Poorly suited		Poorly suited		Moderately suited	
		Stickiness; high plasticity index	0.75	Slope	0.75	Low strength	0.50
				Stickiness; high plasticity index	0.75		
LpoAK:							
Lindside------------	82	Well suited		Well suited		Moderately suited	
						Low strength	0.50
McnGQ:							
Markland------------	90	Moderately suited		Unsuited		Poorly suited	
		Stickiness; high plasticity index	0.50	Slope	1.00	Slope	1.00
		Slope	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
McpC3:							
Markland------------	61	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		
McuDQ:							
Markland------------	70	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		
MhuA:							
McGary--------------	90	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
MhyB2:							
Gatton--------------	90	Moderately suited		Moderately suited		Moderately suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Low strength	0.50
NaaA:							
Nabb----------------	85	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting		Suitability for mechanical planting		Suitability for use of harvesting equipment	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
NaaB2:							
Nabb	78	Well suited		Well suited		Moderately suited	
						Low strength	0.50
NbhAK:							
Newark	80	Well suited		Well suited		Poorly suited	
						Wetness	1.00
						Low strength	0.50
PcrA:							
Pekin	90	Well suited		Well suited		Moderately suited	
						Low strength	0.50
PcrB2:							
Pekin	85	Well suited		Well suited		Moderately suited	
						Low strength	0.50
PhaA:							
Peoga	83	Well suited		Well suited		Moderately suited	
						Low strength	0.50
Pml:							
Pits, quarry	85	Not rated		Not rated		Not rated	
Ppu:							
Pits, sand and gravel	80	Not rated		Not rated		Not rated	
RctD3:							
Rarden	40	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		
Coolville	19	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		
ScbA:							
Sciotoville	70	Well suited		Well suited		Moderately suited	
						Low strength	0.50
ScbB2:							
Sciotoville	75	Well suited		Well suited		Moderately suited	
						Low strength	0.50
SceB2:							
Scottsburg	96	Well suited		Well suited		Moderately suited	
						Low strength	0.50
SfyB:							
Shircliff	75	Well suited		Well suited		Moderately suited	
						Low strength	0.50
SoaB:							
Spickert	95	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 10c.--Forestland Management--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
SodB:							
Spickert-----------	90	Well suited		Well suited		Moderately suited	
						Low strength	0.50
SolC2:							
Spickert-----------	44	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
Wrays--------------	32	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		
StaAQ:							
Steff--------------	86	Well suited		Well suited		Moderately suited	
						Low strength	0.50
StdAQ:							
Stendal------------	88	Well suited		Well suited		Poorly suited	
						Wetness	1.00
						Low strength	0.50
Uaa:							
Udorthents, cut and filled------------	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled------------	65	Not rated		Not rated		Not rated	
Urban land----------	25	Not rated		Not rated		Not rated	
UedA:							
Urban land----------	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum---------	25	Not rated		Not rated		Not rated	
UndAY:							
Urban land----------	65	Not rated		Not rated		Not rated	
Udifluvents---------	25	Not rated		Not rated		Not rated	
UneC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum---------	30	Not rated		Not rated		Not rated	
UngB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum---------	30	Not rated		Not rated		Not rated	

Table 10c.--Forestland Management--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
UnkB:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, silty substratum	30	Not rated		Not rated		Not rated	
UnlC:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	
UnpA:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum	30	Not rated		Not rated		Not rated	
UnrD:							
Urban land	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland	83	Well suited		Well suited		Poorly suited	
						Wetness	1.00
						Low strength	0.50
WaaAW:							
Wakeland	82	Well suited		Well suited		Poorly suited	
						Wetness	1.00
						Low strength	0.50
WhdD2:							
Wellrock	33	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		
Gnawbone	31	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
				Rock fragments	0.50		
Spickert, soft bedrock substratum	25	Well suited		Moderately suited		Moderately suited	
				Slope	0.50	Low strength	0.50
WokAV:							
Wilbur	78	Well suited		Well suited		Moderately suited	
						Low strength	0.50
WokAW:							
Wilbur	83	Well suited		Well suited		Moderately suited	
						Low strength	0.50

Table 10c.--Forestland Management--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
WomAK:							
Wilhite-------------	85	Moderately suited		Moderately suited		Poorly suited	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
						Low strength	0.50

Table 10d.--Forestland 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	Potential for seedling mortality	
		Rating class and limiting features	Value
BbhA:			
Bartle	83	High	
		Wetness	1.00
BcrAQ:			
Beanblossom	90	Low	
BcrAW:			
Beanblossom	89	Low	
BgeAZ:			
Birds	95	High	
		Wetness	1.00
BlvAW:			
Kintner	95	Low	
BuoA:			
Bromer	95	High	
		Wetness	1.00
CcaG:			
Caneyville	53	Low	
Rock outcrop	15	Not rated	
CkkB2:			
Cincinnati	80	Low	
CldC2:			
Cincinnati	42	Low	
Blocher	34	Low	
ConC3:			
Coolville	45	Moderate	
		Wetness	0.50
		Soil reaction	0.50
Rarden	45	High	
		Wetness	1.00
		Soil reaction	0.50
CtwB:			
Crider	39	Low	
Bedford	29	Low	
Navilleton	28	Low	

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for seedling mortality	
		Rating class and limiting features	Value
CwaAQ:			
Cuba	92	Low	
EepB:			
Elkinsville	85	Low	
EepGQ:			
Elkinsville	85	Low	
GgbG:			
Gilwood	45	Low	
Brownstown	35	Low	
GgfE2:			
Gilwood	42	Low	
Wrays	36	Low	
GmaG:			
Gnawbone	48	Moderate	
		Soil reaction	0.50
Kurtz	32	Moderate	
		Soil reaction	0.50
HcbAQ:			
Hatfield	80	High	
		Wetness	1.00
HcgAH:			
Haymond	85	Low	
HcgAV:			
Haymond	85	Low	
HcgAW:			
Haymond	82	Low	
HufAK:			
Huntington	85	Low	
KxkC2:			
Knobcreek	37	Low	
Navilleton	35	Low	
KxlC3:			
Knobcreek	33	Low	
Haggatt	26	Low	
Caneyville	24	Low	
KxlE3:			
Knobcreek	35	Low	
Haggatt	22	Low	
Caneyville	21	Low	

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for seedling mortality: Rating class and limiting features	Value
KxmE2:			
Knobcreek	33	Low	
Haggatt	22	Low	
Caneyville	20	Low	
KxoC2:			
Knobcreek	29	Low	
Navilleton	28	Low	
Haggatt	27	Low	
KxpD2:			
Knobcreek	35	Low	
Haggatt	31	Low	
Caneyville	30	Low	
LpoAK:			
Lindside	82	Low	
McnGQ:			
Markland	90	Low	
McpC3:			
Markland	61	Low	
McuDQ:			
Markland	70	Low	
MhuA:			
McGary	90	High	
		Wetness	1.00
MhyB2:			
Gatton	90	Low	
NaaA:			
Nabb	85	Low	
NaaB2:			
Nabb	78	Low	
NbhAK:			
Newark	80	High	
		Wetness	1.00
PcrA:			
Pekin	90	Low	
PcrB2:			
Pekin	85	Low	
PhaA:			
Peoga	83	High	
		Wetness	1.00

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for seedling mortality	
		Rating class and limiting features	Value
Pml:			
Pits, quarry	85	Not rated	
Ppu:			
Pits, sand and gravel	80	Not rated	
RctD3:			
Rarden	40	High	
		Wetness	1.00
		Soil reaction	0.50
Coolville	19	Moderate	
		Wetness	0.50
		Soil reaction	0.50
ScbA:			
Sciotoville	70	Low	
ScbB2:			
Sciotoville	75	Low	
SceB2:			
Scottsburg	96	Low	
SfyB:			
Shircliff	75	Low	
SoaB:			
Spickert	95	Low	
SodB:			
Spickert	90	Low	
SolC2:			
Spickert	44	Low	
Wrays	32	Low	
StaAQ:			
Steff	86	Low	
StdAQ:			
Stendal	88	High	
		Wetness	1.00
Uaa:			
Udorthents, cut and filled	83	Not rated	
UaoAK:			
Udifluvents, cut and filled	65	Not rated	
Urban land	25	Not rated	

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for seedling mortality: Rating class and limiting features	Value
UedA:			
Urban land----------	60	Not rated	
Aquents, clayey substratum---------	25	Not rated	
UndAY:			
Urban land----------	65	Not rated	
Udifluvents---------	25	Not rated	
UneC:			
Urban land----------	45	Not rated	
Udarents, clayey substratum---------	30	Not rated	
UngB:			
Urban land----------	45	Not rated	
Udarents, fragipan substratum---------	30	Not rated	
UnkB:			
Urban land----------	45	Not rated	
Udarents, silty substratum---------	30	Not rated	
UnlC:			
Urban land----------	45	Not rated	
Udarents, hard bedrock substratum	30	Not rated	
UnpA:			
Urban land----------	45	Not rated	
Udarents, loamy substratum---------	30	Not rated	
UnrD:			
Urban land----------	50	Not rated	
Udarents, soft bedrock substratum	30	Not rated	
W:			
Water---------------	100	Not rated	
WaaAV:			
Wakeland------------	83	High	
		Wetness	1.00
WaaAW:			
Wakeland------------	82	High	
		Wetness	1.00

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Pct. of map unit	Potential for seedling mortality: Rating class and limiting features	Value
WhdD2:			
Wellrock	33	Moderate	
		Soil reaction	0.50
Gnawbone	31	Low	
Spickert, soft bedrock substratum	25	Low	
WokAV:			
Wilbur	78	Low	
WokAW:			
Wilbur	83	Low	
WomAK:			
Wilhite	85	High	
		Wetness	1.00

Table 11a.--Recreational Development

(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
BbhA:							
Bartle	83	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	0.88	Slow water movement	0.88	Slow water movement	0.88
BcrAQ:							
Beanblossom	90	Very limited		Not limited		Not limited	
		Flooding	1.00				
BcrAW:							
Beanblossom	89	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
BgeAZ:							
Birds	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Ponding	1.00	Flooding	0.40	Ponding	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
BlvAW:							
Kintner	95	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
BuoA:							
Bromer	95	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	0.96	Slow water movement	0.96	Slow water movement	0.96
CcaG:							
Caneyville	53	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
						Depth to bedrock	0.20
Rock outcrop	15	Not rated		Not rated		Not rated	
CkkB2:							
Cincinnati	80	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
						Slope	0.55

Table 11a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
CldC2:							
Cincinnati----------	42	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slow water movement	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
Blocher------------	34	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slow water movement	0.96
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
ConC3:							
Coolville----------	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.98	Slow water movement	0.98	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.98
Rarden-------------	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.98	Slow water movement	0.98	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.98
						Depth to bedrock	0.03
CtwB:							
Crider-------------	39	Not limited		Not limited		Somewhat limited	
						Slope	0.55
Bedford------------	29	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	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
						Slope	0.55
Navilleton---------	28	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Slope	0.55
CwaAQ:							
Cuba---------------	92	Very limited		Not limited		Not limited	
		Flooding	1.00				
EepB:							
Elkinsville--------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.55
EepGQ:							
Elkinsville--------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Flooding	1.00				

Table 11a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GgbG:							
Gilwood-------------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.29
						Gravel content	0.22
Brownstown----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.06
GgfE2:							
Gilwood-------------	42	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.29
Wrays---------------	36	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
GmaG:							
Gnawbone------------	48	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.01
Kurtz---------------	32	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
HcbAQ:							
Hatfield------------	80	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	Slow water movement	0.88	Slow water movement	0.88
		Slow water movement	0.88				
HcgAH:							
Haymond-------------	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
HcgAV:							
Haymond-------------	85	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Flooding	0.40	Flooding	1.00
HcgAW:							
Haymond-------------	82	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
HufAK:							
Huntington----------	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
KxkC2:							
Knobcreek-----------	37	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.84

Table 11a.--Recreational Development--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
KxkC2:							
Navilleton----------	35	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.96
KxlC3:							
Knobcreek-----------	33	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.84
Haggatt-------------	26	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.21
Caneyville----------	24	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to bedrock	0.90
						Slow water movement	0.21
KxlE3:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Caneyville----------	21	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Depth to bedrock	0.90
						Slow water movement	0.21
KxmE2:							
Knobcreek-----------	33	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Caneyville----------	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
						Depth to bedrock	0.06

Table 11a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KxoC2:							
Knobcreek-----------	29	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.84	Slow water movement	0.84	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.84
Navilleton----------	28	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
						Slow water movement	0.96
Haggatt-------------	27	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.21
KxpD2:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.84	Slow water movement	0.84	Slow water movement	0.84
Haggatt-------------	31	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Caneyville----------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
						Depth to bedrock	0.06
LpoAK:							
Lindside------------	82	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98			Flooding	0.60
McnGQ:							
Markland------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Flooding	1.00	Slow water movement	0.43	Slow water movement	0.43
		Slow water movement	0.43				
McpC3:							
Markland------------	61	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.43	Slow water movement	0.43	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.43
McuDQ:							
Markland------------	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Slow water movement	0.43	Slow water movement	0.43
		Slow water movement	0.43				

Table 11a.--Recreational Development--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
MhuA:							
McGary	90	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	0.43	Slow water movement	0.43	Slow water movement	0.43
MhyB2:							
Gatton	90	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	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
						Slope	0.55
NaaA:							
Nabb	85	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	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
NaaB2:							
Nabb	78	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	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
						Slope	0.55
NbhAK:							
Newark	80	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
PcrA:							
Pekin	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Slow water movement	0.88	Depth to saturated zone	0.98
		Slow water movement	0.88	Depth to saturated zone	0.75	Slow water movement	0.88
PcrB2:							
Pekin	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Slow water movement	0.88	Depth to saturated zone	0.98
		Slow water movement	0.88	Depth to saturated zone	0.75	Slow water movement	0.88
						Slope	0.55
PhaA:							
Peoga	83	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Slow water movement	0.88	Slow water movement	0.88	Slow water movement	0.88

Table 11a.--Recreational Development--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
Pml:							
Pits, quarry	85	Not rated		Not rated		Not rated	
Ppu:							
Pits, sand and gravel	80	Not rated		Not rated		Not rated	
RctD3:							
Rarden	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
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.98	Slow water movement	0.98	Slow water movement	0.98
						Depth to bedrock	0.29
Coolville	19	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.98	Slow water movement	0.98	Slow water movement	0.98
ScbA:							
Sciotoville	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Slow water movement	0.88	Depth to saturated zone	0.98
		Slow water movement	0.88	Depth to saturated zone	0.75	Slow water movement	0.88
ScbB2:							
Sciotoville	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Slow water movement	0.88	Depth to saturated zone	0.98
		Slow water movement	0.88	Depth to saturated zone	0.75	Slow water movement	0.88
						Slope	0.15
SceB2:							
Scottsburg	96	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Slow water movement	0.88	Depth to saturated zone	0.98
		Slow water movement	0.88	Depth to saturated zone	0.75	Slow water movement	0.88
						Slope	0.15
SfyB:							
Shircliff	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Slow water movement	0.43	Slow water movement	0.43	Slope	0.55
						Slow water movement	0.43

Table 11a.--Recreational Development--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
SoaB:							
Spickert	95	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	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
						Slope	0.55
SodB:							
Spickert	90	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	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
						Slope	0.03
SolC2:							
Spickert	44	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Slow water movement	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.98
Wrays	32	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.21	Slow water movement	0.21	Slope	1.00
		Slope	0.04	Slope	0.04	Slow water movement	0.21
StaAQ:							
Steff	86	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98				
StdAQ:							
Stendal	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				
Uaa:							
Udorthents, cut and filled	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled	65	Not rated		Not rated		Not rated	
Urban land	25	Not rated		Not rated		Not rated	
UedA:							
Urban land	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum	25	Not rated		Not rated		Not rated	

Table 11a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UndAY:							
Urban land----------	65	Not rated		Not rated		Not rated	
Udifluvents---------	25	Not rated		Not rated		Not rated	
UneC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum---------	30	Not rated		Not rated		Not rated	
UngB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum---------	30	Not rated		Not rated		Not rated	
UnkB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, silty substratum---------	30	Not rated		Not rated		Not rated	
UnlC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	
UnpA:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum---------	30	Not rated		Not rated		Not rated	
UnrD:							
Urban land----------	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland------------	83	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
WaaAW:							
Wakeland------------	82	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

Table 11a.--Recreational Development--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WhdD2:							
Wellrock------------	33	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Slow water movement	0.21	Slow water movement	0.21	Slow water movement	0.21
Gnawbone------------	31	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
						Depth to bedrock	0.01
Spickert, soft bedrock substratum	25	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Slow water movement	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.98
WokAV:							
Wilbur--------------	78	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Depth to saturated zone	0.75	Flooding	1.00
		Depth to saturated zone	0.98	Flooding	0.40	Depth to saturated zone	0.98
WokAW:							
Wilbur--------------	83	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98			Flooding	0.60
WomAK:							
Wilhite-------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Slow water movement	1.00	Slow water movement	1.00
		Slow water movement	1.00			Flooding	0.60

Table 11b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Paths and trails		Off-road motorcycle trails		Golf fairways	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BbhA:							
Bartle	83	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
BcrAQ:							
Beanblossom	90	Not limited		Not limited		Not limited	
BcrAW:							
Beanblossom	89	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
BgeAZ:							
Birds	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
BlvAW:							
Kintner	95	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
BuoA:							
Bromer	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
CcaG:							
Caneyville	53	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.20
Rock outcrop	15	Not rated		Not rated		Not rated	
CkkB2:							
Cincinnati	80	Not limited		Not limited		Not limited	
CldC2:							
Cincinnati	42	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.19
						Slope	0.04
Blocher	34	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.19
						Slope	0.04

Table 11b.--Recreational Development--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
ConC3:							
Coolville	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
Rarden	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
						Depth to bedrock	0.03
CtwB:							
Crider	39	Not limited		Not limited		Not limited	
Bedford	29	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
Navilleton	28	Not limited		Not limited		Not limited	
CwaAQ:							
Cuba	92	Not limited		Not limited		Not limited	
EepB:							
Elkinsville	85	Not limited		Not limited		Not limited	
EepGQ:							
Elkinsville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00		
GgbG:							
Gilwood	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.96	Slope	1.00
						Depth to bedrock	0.29
Brownstown	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.06
						Droughty	0.01
GgfE2:							
Gilwood	42	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to bedrock	0.29
Wrays	36	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.01				
GmaG:							
Gnawbone	48	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	0.01
Kurtz	32	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00	Slope	0.78		

Table 11b.--Recreational Development--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
HcbAQ:							
Hatfield------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
HcgAH:							
Haymond-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
HcgAV:							
Haymond-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Flooding	0.40	Flooding	0.40	Flooding	1.00
HcgAW:							
Haymond-------------	82	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
HufAK:							
Huntington----------	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
KxkC2:							
Knobcreek-----------	37	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
Navilleton----------	35	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
KxlC3:							
Knobcreek-----------	33	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
Haggatt-------------	26	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
Caneyville----------	24	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to bedrock	0.90
						Droughty	0.47
						Slope	0.04
						Large stones	0.01
KxlE3:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.18				
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.18				
Caneyville----------	21	Somewhat limited		Not limited		Very limited	
		Slope	0.18			Slope	1.00
						Depth to bedrock	0.90
						Droughty	0.47
						Large stones	0.01

Table 11b.--Recreational Development--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
KxmE2:							
Knobcreek-----------	33	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.18				
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.18				
Caneyville----------	20	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.18			Depth to bedrock	0.06
KxoC2:							
Knobcreek-----------	29	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
Navilleton----------	28	Not limited		Not limited		Not limited	
Haggatt-------------	27	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
KxpD2:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.02				
Haggatt-------------	31	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.02				
Caneyville----------	30	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.18			Depth to bedrock	0.06
LpoAK:							
Lindside------------	82	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60
McnGQ:							
Markland------------	90	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	1.00	Slope	0.86		
McpC3:							
Markland------------	61	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
McuDQ:							
Markland------------	70	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.08				
MhuA:							
McGary--------------	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 11b.--Recreational Development--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
MhyB2:							
Gatton	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
NaaA:							
Nabb	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
NaaB2:							
Nabb	78	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
NbhAK:							
Newark	80	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
PcrA:							
Pekin	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
PcrB2:							
Pekin	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
PhaA:							
Peoga	83	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
Pml:							
Pits, quarry	85	Not rated		Not rated		Not rated	
Ppu:							
Pits, sand and gravel	80	Not rated		Not rated		Not rated	
RctD3:							
Rarden	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
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.08			Depth to bedrock	0.29
Coolville	19	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.01				

Table 11b.--Recreational Development--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
ScbA:							
Sciotoville	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
ScbB2:							
Sciotoville	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
SceB2:							
Scottsburg	96	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
SfyB:							
Shircliff	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
SoaB:							
Spickert	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
SodB:							
Spickert	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
SolC2:							
Spickert	44	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.04
Wrays	32	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.04
StaAQ:							
Steff	86	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
StdAQ:							
Stendal	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
Uaa:							
Udorthents, cut and filled	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled	65	Not rated		Not rated		Not rated	
Urban land	25	Not rated		Not rated		Not rated	

Table 11b.--Recreational Development--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
UedA:							
Urban land----------	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum---------	25	Not rated		Not rated		Not rated	
UndAY:							
Urban land----------	65	Not rated		Not rated		Not rated	
Udifluvents---------	25	Not rated		Not rated		Not rated	
UneC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum---------	30	Not rated		Not rated		Not rated	
UngB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum---------	30	Not rated		Not rated		Not rated	
UnkB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, silty substratum---------	30	Not rated		Not rated		Not rated	
UnlC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	
UnpA:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum---------	30	Not rated		Not rated		Not rated	
UnrD:							
Urban land----------	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland-----------	83	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 11b.--Recreational Development--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
WaaAW:							
Wakeland	82	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
WhdD2:							
Wellrock	33	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.84
Gnawbone	31	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.84
						Depth to bedrock	0.01
Spickert, soft bedrock substratum	25	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.04
WokAV:							
Wilbur	78	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
WokAW:							
Wilbur	83	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60
WomAK:							
Wilhite	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
						Flooding	0.60

Table 12.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
BbhA:										
Bartle	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
BcrAQ:										
Beanblossom	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BcrAW:										
Beanblossom	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BgeAZ:										
Birds	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
BlvAW:										
Kintner	Fair	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
BuoA:										
Bromer	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
CcaG:										
Caneyville	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Rock outcrop.										
CkkB2:										
Cincinnati	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CldC2:										
Cincinnati	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Blocher	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
ConC3:										
Coolville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Rarden	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CtwB:										
Crider	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Bedford	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Navilleton	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 12.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
CwaAQ:										
Cuba	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EepB:										
Elkinsville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EepGQ:										
Elkinsville	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
GgbG:										
Gilwood	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Brownstown	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
GgfE2:										
Gilwood	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Wrays	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GmaG:										
Gnawbone	Very poor.	Very poor.	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
Kurtz	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.
HcbAQ:										
Hatfield	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
HcgAH:										
Haymond	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
HcgAV:										
Haymond	Fair	Fair	Fair	Good	Good	Poor	Poor	Fair	Good	Poor.
HcgAW:										
Haymond	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
HufAK:										
Huntington	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
KxkC2:										
Knobcreek	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Navilleton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 12.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
KxlC3:										
Knobcreek---------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Haggatt-----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Caneyville--------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
KxlE3:										
Knobcreek---------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Haggatt-----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Caneyville--------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
KxmE2:										
Knobcreek---------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Haggatt-----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Caneyville--------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
KxoC2:										
Knobcreek---------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Navilleton--------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Haggatt-----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
KxpD2:										
Knobcreek---------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Haggatt-----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Caneyville--------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
LpoAK:										
Lindside----------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
McnGQ:										
Markland----------	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
McpC3:										
Markland----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 12.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
McuDQ:										
Markland----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
MhuA:										
McGary------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
MhyB2:										
Gatton------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NaaA:										
Nabb--------------	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
NaaB2:										
Nabb--------------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NbhAK:										
Newark------------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
PcrA:										
Pekin-------------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
PcrB2:										
Pekin-------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
PhaA:										
Peoga-------------	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Pml. Pits, quarry										
Ppu. Pits, sand and gravel										
RctD3:										
Rarden------------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Coolville---------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
ScbA:										
Sciotoville-------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
ScbB2:										
Sciotoville-------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
SceB2:										
Scottsburg--------	Good	Good	Good	Fair	Good	Poor	Very poor.	Good	Good	Very poor.
SfyB:										
Shircliff---------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 12.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
SoaB:										
Spickert----------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
SodB:										
Spickert----------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
SolC2:										
Spickert----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Wrays-------------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
StaAQ:										
Steff-------------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
StdAQ:										
Stendal-----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Uaa. Udorthents, cut and filled										
UaoAK:										
Udifluvents, cut and filled.										
Urban land.										
UedA:										
Urban land.										
Aquents, clayey substratum.										
UndAY:										
Urban land.										
Udifluvents.										
UneC:										
Urban land.										
Udarents, clayey substratum.										
UngB:										
Urban land.										
Udarents, fragipan substratum.										
UnkB:										
Urban land.										
Udarents, silty substratum.										

Table 12.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
UnlC:										
Urban land.										
Udarents, hard bedrock substratum.										
UnpA:										
Urban land.										
Udarents, loamy substratum.										
UnrD:										
Urban land.										
Udarents, soft bedrock substratum.										
W.										
Water										
WaaAV:										
Wakeland----------	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
WaaAW:										
Wakeland----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
WhdD2:										
Wellrock----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Gnawbone----------	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
Spickert, soft bedrock substratum-------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
WokAV:										
Wilbur------------	Fair	Fair	Good	Good	Good	Poor	Poor	Good	Good	Poor.
WokAW:										
Wilbur------------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
WomAK:										
Wilhite-----------	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.

Table 13a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BbhA:							
Bartle	83	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
BcrAQ:							
Beanblossom	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.87		
BcrAW:							
Beanblossom	89	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.87		
BgeAZ:							
Birds	95	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
BlvAW:							
Kintner	95	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	1.00		
				Depth to hard bedrock	0.88		
BuoA:							
Bromer	95	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	0.22	Shrink-swell	1.00	Shrink-swell	0.22
CcaG:							
Caneyville	53	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
Rock outcrop	15	Not rated		Not rated		Not rated	
CkkB2:							
Cincinnati	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
						Slope	0.01

Table 13a.--Building Site Development--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
CldC2:							
Cincinnati----------	42	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
Blocher-------------	34	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
		Depth to saturated zone	0.39	Shrink-swell	0.50	Shrink-swell	0.50
		Slope	0.04	Slope	0.04	Depth to saturated zone	0.39
ConC3:							
Coolville-----------	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
Rarden--------------	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
				Depth to soft bedrock	0.03		
CtwB:							
Crider--------------	39	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.44	Shrink-swell	0.50
						Slope	0.01
Bedford-------------	29	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.01
Navilleton----------	28	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	1.00	Shrink-swell	0.50
						Slope	0.01
CwaAQ:							
Cuba----------------	92	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
EepB:							
Elkinsville---------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
						Slope	0.01
EepGQ:							
Elkinsville---------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 13a.--Building Site Development--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
GgbG:							
Gilwood-------------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
Brownstown----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones	0.18	Depth to hard bedrock	1.00	Large stones	0.18
		Depth to hard bedrock	0.06	Large stones	0.18	Depth to hard bedrock	0.06
GgfE2:							
Gilwood-------------	42	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.29	Slope	1.00	Depth to hard bedrock	0.29
Wrays---------------	36	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to hard bedrock	0.88	Shrink-swell	0.50
				Shrink-swell	0.50		
GmaG:							
Gnawbone------------	48	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to soft bedrock	0.01		
Kurtz---------------	32	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
HcbAQ:							
Hatfield------------	80	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
		Shrink-swell	0.50			Shrink-swell	0.50
HcgAH:							
Haymond-------------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
HcgAV:							
Haymond-------------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
HcgAW:							
Haymond-------------	82	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
HufAK:							
Huntington----------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00

Table 13a.--Building Site Development--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
KxkC2:							
Knobcreek-----------	37	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Navilleton----------	35	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Shrink-swell	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Shrink-swell	0.50
KxlC3:							
Knobcreek-----------	33	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Haggatt-------------	26	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Depth to hard bedrock	0.96	Slope	1.00
				Slope	0.04		
Caneyville----------	24	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to hard bedrock	0.90
KxlE3:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
				Depth to hard bedrock	0.96		
Caneyville----------	21	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.90	Slope	1.00	Depth to hard bedrock	0.90
KxmE2:							
Knobcreek-----------	33	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
				Depth to hard bedrock	0.88		
Caneyville----------	20	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.06	Slope	1.00	Depth to hard bedrock	0.06

Table 13a.--Building Site Development--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
KxoC2:							
Knobcreek-----------	29	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Navilleton----------	28	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Shrink-swell	1.00	Slope	0.90
						Shrink-swell	0.50
Haggatt-------------	27	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
		Slope	0.04	Depth to hard bedrock	0.88	Slope	1.00
				Slope	0.04		
KxpD2:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
Haggatt-------------	31	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Shrink-swell	1.00
				Depth to hard bedrock	0.88		
Caneyville----------	30	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	1.00	Shrink-swell	1.00
		Depth to hard bedrock	0.06	Slope	1.00	Depth to hard bedrock	0.06
LpoAK:							
Lindside------------	82	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
McnGQ:							
Markland------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
McpC3:							
Markland------------	61	Very limited		Somewhat limited		Very limited	
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
McuDQ:							
Markland------------	70	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Slope	1.00
		Shrink-swell	1.00	Slope	1.00	Flooding	1.00
		Slope	1.00	Shrink-swell	0.50	Shrink-swell	1.00

Table 13a.--Building Site Development--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
MhuA:							
McGary	90	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	1.00	Shrink-swell	1.00	Shrink-swell	1.00
MhyB2:							
Gatton	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
						Slope	0.01
NaaA:							
Nabb	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50			Shrink-swell	0.50
NaaB2:							
Nabb	78	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50			Shrink-swell	0.50
						Slope	0.01
NbhAK:							
Newark	80	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
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
PcrA:							
Pekin	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
PcrB2:							
Pekin	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
						Slope	0.01
PhaA:							
Peoga	83	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Pml:							
Pits, quarry	85	Not rated		Not rated		Not rated	
Ppu:							
Pits, sand and gravel	80	Not rated		Not rated		Not rated	

Table 13a.--Building Site Development--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
RctD3:							
Rarden	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.29		
Coolville	19	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
ScbA:							
Sciotoville	70	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
ScbB2:							
Sciotoville	75	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
SceB2:							
Scottsburg	96	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
SfyB:							
Shircliff	75	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.98	Shrink-swell	0.50	Depth to saturated zone	0.98
						Slope	0.01
SoaB:							
Spickert	95	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50			Shrink-swell	0.50
						Slope	0.01
SodB:							
Spickert	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50			Shrink-swell	0.50
SolC2:							
Spickert	44	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	0.04	Depth to saturated zone	0.98
		Slope	0.04			Shrink-swell	0.50

Table 13a.--Building Site Development--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
SolC2:							
Wrays	32	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Depth to hard bedrock	0.54	Slope	1.00
		Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
				Slope	0.04		
StaAQ:							
Steff	86	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
StdAQ:							
Stendal	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
Uaa:							
Udorthents, cut and filled	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled	65	Not rated		Not rated		Not rated	
Urban land	25	Not rated		Not rated		Not rated	
UedA:							
Urban land	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum	25	Not rated		Not rated		Not rated	
UndAY:							
Urban land	65	Not rated		Not rated		Not rated	
Udifluvents	25	Not rated		Not rated		Not rated	
UneC:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum	30	Not rated		Not rated		Not rated	
UngB:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum	30	Not rated		Not rated		Not rated	
UnkB:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, silty substratum	30	Not rated		Not rated		Not rated	

Table 13a.--Building Site Development--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
UnlC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	
UnpA:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum---------	30	Not rated		Not rated		Not rated	
UnrD:							
Urban land----------	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland-----------	83	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
WaaAW:							
Wakeland-----------	82	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
WhdD2:							
Wellrock-----------	33	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Gnawbone-----------	31	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.84	Slope	0.84	Slope	1.00
				Depth to soft bedrock	0.01		
Spickert, soft bedrock substratum	25	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Slope	1.00
		Shrink-swell	0.50	Slope	0.04	Depth to saturated zone	0.98
		Slope	0.04			Shrink-swell	0.50
WokAV:							
Wilbur-------------	78	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98

Table 13a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WokAW:							
Wilbur--------------	83	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
WomAK:							
Wilhite-------------	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Table 13b.--Building Site Development

(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
BbhA:							
Bartle	83	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	Cutbanks cave	0.10		
		Low strength	1.00				
BcrAQ:							
Beanblossom	90	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Depth to saturated zone	0.87		
		Flooding	0.40	Cutbanks cave	0.10		
BcrAW:							
Beanblossom	89	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	0.87	Flooding	0.60
		Flooding	1.00	Flooding	0.60		
				Cutbanks cave	0.10		
BgeAZ:							
Birds	95	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Flooding	0.80	Depth to saturated zone	1.00
		Flooding	1.00	Cutbanks cave	0.10		
		Low strength	0.22				
BlvAW:							
Kintner	95	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Depth to saturated zone	1.00		
				Depth to hard bedrock	0.88		
				Flooding	0.60		
BuoA:							
Bromer	95	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	0.18		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.22				

Table 13b.--Building Site Development--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
CcaG:							
Caneyville	53	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.20
		Shrink-swell	1.00	Too clayey	0.76		
		Frost action	0.50	Cutbanks cave	0.10		
		Depth to hard bedrock	0.20				
Rock outcrop	15	Not rated		Not rated		Not rated	
CkkB2:							
Cincinnati	80	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Depth to saturated zone	1.00		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
CldC2:							
Cincinnati	42	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Depth to saturated zone	0.19	Slope	0.04		
		Slope	0.04				
Blocher	34	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Shrink-swell	0.50	Slope	0.04		
		Depth to saturated zone	0.19				
		Slope	0.04				
ConC3:							
Coolville	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10	Slope	0.04
		Low strength	1.00	Slope	0.04		
		Shrink-swell	0.50	Too clayey	0.02		
		Slope	0.04				
Rarden	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Too clayey	0.18	Slope	0.04
		Low strength	1.00	Cutbanks cave	0.10	Depth to bedrock	0.03
		Shrink-swell	0.50	Slope	0.04		
		Slope	0.04	Depth to soft bedrock	0.03		
CtwB:							
Crider	39	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Too clayey	0.82		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				

Table 13b.--Building Site Development--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
CtwB:							
Bedford	29	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Too clayey	1.00		
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
		Shrink-swell	0.50				
Navilleton	28	Very limited		Very limited		Not limited	
		Frost action	1.00	Too clayey	1.00		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
CwaAQ:							
Cuba	92	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Flooding	0.40				
EepB:							
Elkinsville	85	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Shrink-swell	0.50				
EepGQ:							
Elkinsville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Shrink-swell	0.50				
		Flooding	0.40				
GgbG:							
Gilwood	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10		
Brownstown	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.06
		Large stones	0.18	Large stones	0.18	Droughty	0.01
		Depth to hard bedrock	0.06	Cutbanks cave	0.10		
GgfE2:							
Gilwood	42	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10		
Wrays	36	Very limited		Very limited		Very limited	
		Frost action	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to hard bedrock	0.88		
		Slope	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				

Table 13b.--Building Site Development--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
GmaG:							
Gnawbone	48	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10	Depth to bedrock	0.01
		Frost action	0.50	Depth to soft bedrock	0.01		
Kurtz	32	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Shrink-swell	0.50				
HcbAQ:							
Hatfield	80	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	Cutbanks cave	0.10		
		Low strength	1.00				
		Shrink-swell	0.50				
		Flooding	0.40				
HcgAH:							
Haymond	85	Very limited		Somewhat limited		Very limited	
		Frost action	1.00	Flooding	0.80	Flooding	1.00
		Flooding	1.00	Cutbanks cave	0.10		
HcgAV:							
Haymond	85	Very limited		Somewhat limited		Very limited	
		Frost action	1.00	Flooding	0.80	Flooding	1.00
		Flooding	1.00	Cutbanks cave	0.10		
HcgAW:							
Haymond	82	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Cutbanks cave	0.10		
HufAK:							
Huntington	85	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
KxkC2:							
Knobcreek	37	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Too clayey	1.00	Slope	0.04
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Slope	0.04		
		Slope	0.04				
Navilleton	35	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Too clayey	1.00	Slope	0.04
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Slope	0.04		
		Slope	0.04				

Table 13b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KxlC3:							
Knobcreek-----------	33	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Too clayey	1.00	Slope	0.04
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Slope	0.04		
		Slope	0.04				
Haggatt-------------	26	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Too clayey	1.00	Slope	0.04
		Low strength	1.00	Depth to hard bedrock	0.96		
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
Caneyville----------	24	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.90
		Shrink-swell	1.00	Too clayey	0.76	Droughty	0.47
		Depth to hard bedrock	0.90	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04	Large stones	0.01
		Slope	0.04				
KxlE3:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Frost action	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Slope	1.00				
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Frost action	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	1.00	Depth to hard bedrock	0.96		
		Slope	1.00	Cutbanks cave	0.10		
Caneyville----------	21	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	1.00	Slope	1.00	Depth to bedrock	0.90
		Slope	1.00	Too clayey	0.76	Droughty	0.47
		Depth to hard bedrock	0.90	Cutbanks cave	0.10	Large stones	0.01
		Frost action	0.50				
KxmE2:							
Knobcreek-----------	33	Very limited		Very limited		Very limited	
		Frost action	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Slope	1.00				
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Frost action	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	1.00	Depth to hard bedrock	0.88		
		Slope	1.00	Cutbanks cave	0.10		

Table 13b.--Building Site Development--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
KxmE2:							
Caneyville	20	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	1.00			Depth to bedrock	0.06
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Too clayey	0.76		
		Depth to hard bedrock	0.06	Cutbanks cave	0.10		
KxoC2:							
Knobcreek	29	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Too clayey	1.00	Slope	0.04
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Slope	0.04		
		Slope	0.04				
Navilleton	28	Very limited		Very limited		Not limited	
		Frost action	1.00	Too clayey	1.00		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
Haggatt	27	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Too clayey	1.00	Slope	0.04
		Low strength	1.00	Depth to hard bedrock	0.88		
		Shrink-swell	1.00				
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
KxpD2:							
Knobcreek	35	Very limited		Very limited		Very limited	
		Frost action	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Slope	1.00				
Haggatt	31	Very limited		Very limited		Very limited	
		Frost action	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	1.00	Depth to hard bedrock	0.88		
		Slope	1.00				
				Cutbanks cave	0.10		
Caneyville	30	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	1.00			Depth to bedrock	0.06
		Slope	1.00	Slope	1.00		
		Frost action	0.50	Too clayey	0.76		
		Depth to hard bedrock	0.06	Cutbanks cave	0.10		
LpoAK:							
Lindside	82	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Flooding	1.00				
		Low strength	1.00	Flooding	0.60	Flooding	0.60
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
		Shrink-swell	0.50				

Table 13b.--Building Site Development--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
McnGQ:							
Markland------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Too clayey	0.12		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
		Flooding	0.40				
McpC3:							
Markland------------	61	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Too clayey	0.12	Slope	0.04
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
McuDQ:							
Markland------------	70	Very limited		Very limited		Very limited	
		Low strength	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Slope	1.00				
		Frost action	0.50				
		Flooding	0.40				
MhuA:							
McGary--------------	90	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		
		Shrink-swell	1.00				
MhyB2:							
Gatton--------------	90	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
NaaA:							
Nabb----------------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
		Shrink-swell	0.50				
NaaB2:							
Nabb----------------	78	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
		Shrink-swell	0.50				

Table 13b.--Building Site Development--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
NbhAK:							
Newark	80	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	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Shrink-swell	0.50				
PcrA:							
Pekin	90	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
PcrB2:							
Pekin	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
PhaA:							
Peoga	83	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
Pml:							
Pits, quarry	85	Not rated		Not rated		Not rated	
Ppu:							
Pits, sand and gravel	80	Not rated		Not rated		Not rated	
RctD3:							
Rarden	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
		Frost action	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.29	Depth to bedrock	0.29
		Slope	1.00				
		Shrink-swell	0.50	Too clayey	0.18		
				Cutbanks cave	0.10		
Coolville	19	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	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
		Slope	1.00	Too clayey	0.02		
		Shrink-swell	0.50				

Table 13b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets		Shallow excavations		Lawns and landscaping	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ScbA:							
Sciotoville----------	70	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
ScbB2:							
Sciotoville----------	75	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
SceB2:							
Scottsburg----------	96	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Too clayey	0.12		
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
		Shrink-swell	0.50				
SfyB:							
Shircliff-----------	75	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Too clayey	0.12		
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
SoaB:							
Spickert------------	95	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
		Shrink-swell	0.50				
SodB:							
Spickert------------	90	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
		Shrink-swell	0.50				
SolC2:							
Spickert------------	44	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Depth to saturated zone	0.75	Slope	0.04		
		Shrink-swell	0.50				
		Slope	0.04				
Wrays---------------	32	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Depth to hard bedrock	0.54	Slope	0.04
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Slope	0.04		
		Slope	0.04				

Table 13b.--Building Site Development--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
StaAQ:							
Steff	86	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.75				
		Flooding	0.40				
StdAQ:							
Stendal	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
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Flooding	0.40				
Uaa:							
Udorthents, cut and filled	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled	65	Not rated		Not rated		Not rated	
Urban land	25	Not rated		Not rated		Not rated	
UedA:							
Urban land	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum	25	Not rated		Not rated		Not rated	
UndAY:							
Urban land	65	Not rated		Not rated		Not rated	
Udifluvents	25	Not rated		Not rated		Not rated	
UneC:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum	30	Not rated		Not rated		Not rated	
UngB:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum	30	Not rated		Not rated		Not rated	
UnkB:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, silty substratum	30	Not rated		Not rated		Not rated	
UnlC:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	

Table 13b.--Building Site Development--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
UnpA:							
Urban land	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum	30	Not rated		Not rated		Not rated	
UnrD:							
Urban land	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland	83	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		
WaaAW:							
Wakeland	82	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	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Cutbanks cave	0.10		
WhdD2:							
Wellrock	33	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Slope	0.84	Slope	0.84
		Low strength	1.00	Cutbanks cave	0.10		
		Slope	0.84				
		Shrink-swell	0.50				
Gnawbone	31	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Slope	0.84	Slope	0.84
		Low strength	1.00	Cutbanks cave	0.10	Depth to bedrock	0.01
		Slope	0.84	Depth to soft bedrock	0.01		
Spickert, soft bedrock substratum	25	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Depth to saturated zone	0.75	Slope	0.04		
		Shrink-swell	0.50				
		Slope	0.04				
WokAV:							
Wilbur	78	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	1.00	Flooding	0.80	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Cutbanks cave	0.10		

Table 13b.--Building Site Development--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
WokAW:							
Wilbur--------------	83	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
WomAK:							
Wilhite-------------	85	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Cutbanks cave	0.10		
		Low strength	1.00	Too clayey	0.04		

Table 14a.--Sanitary Facilities

(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: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
BbhA:					
Bartle	83	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
BcrAQ:					
Beanblossom	90	Very limited		Very limited	
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage (bottom layer)	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.59	Flooding	0.40
		Flooding	0.40	Depth to soft bedrock	0.13
BcrAW:					
Beanblossom	89	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage (bottom layer)	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.59	Depth to soft bedrock	0.13
BgeAZ:					
Birds	95	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Ponding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	1.00		
BlvAW:					
Kintner	95	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage (bottom layer)	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.96	Depth to hard bedrock	0.88
BuoA:					
Bromer	95	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53

Table 14a.--Sanitary Facilities--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
CcaG:					
Caneyville----------	53	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	0.53
Rock outcrop--------	15	Not rated		Not rated	
CkkB2:					
Cincinnati----------	80	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.53
				Slope	0.35
		Depth to saturated zone	1.00	Depth to saturated zone	0.12
CldC2:					
Cincinnati----------	42	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Depth to saturated zone	0.75
		Depth to saturated zone	1.00		
				Seepage	0.53
		Slope	0.04		
Blocher-------------	34	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Depth to saturated zone	0.75
		Depth to saturated zone	1.00		
				Seepage	0.53
		Slope	0.04		
ConC3:					
Coolville-----------	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	1.00
				Depth to soft bedrock	0.93
		Depth to bedrock	0.98		
		Slope	0.04	Seepage	0.53
Rarden--------------	45	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.04		
CtwB:					
Crider--------------	39	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Seepage	0.53
				Slope	0.35
Bedford-------------	29	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
				Slope	0.35

Table 14a.--Sanitary Facilities--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
CtwB:					
Navilleton----------	28	Very limited		Somewhat limited	
		Slow water movement	1.00	Seepage	0.53
				Slope	0.35
CwaAQ:					
Cuba----------------	92	Very limited		Very limited	
		Seepage (bottom layer)	1.00	Seepage	1.00
				Flooding	0.40
		Slow water movement	0.46		
		Flooding	0.40		
EepB:					
Elkinsville---------	85	Somewhat limited		Somewhat limited	
		Slow water movement	0.46	Seepage	0.53
				Slope	0.35
EepGQ:					
Elkinsville---------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	0.46	Seepage	0.53
				Flooding	0.40
		Flooding	0.40		
GgbG:					
Gilwood-------------	45	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00		
		Slow water movement	0.46	Slope	1.00
				Seepage	0.53
Brownstown----------	35	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Seepage (bottom layer)	1.00		
				Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00
		Large stones	0.18		
GgfE2:					
Gilwood-------------	42	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to hard bedrock	1.00
		Slope	1.00		
		Slow water movement	0.46	Slope	1.00
				Seepage	0.53
Wrays---------------	36	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Depth to hard bedrock	0.88
		Slope	1.00		
		Depth to bedrock	0.96	Seepage	0.53
GmaG:					
Gnawbone------------	48	Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00
		Depth to bedrock	1.00		
		Slow water movement	0.46	Slope	1.00
				Seepage	0.53

Table 14a.--Sanitary Facilities--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
GmaG:					
Kurtz	32	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.89	Depth to soft bedrock	0.71
		Slow water movement	0.46	Seepage	0.53
HcbAQ:					
Hatfield	80	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Flooding	0.40
		Flooding	0.40		
HcgAH:					
Haymond	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.46	Seepage	0.53
HcgAV:					
Haymond	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.46	Seepage	0.53
HcgAW:					
Haymond	82	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.46	Seepage	0.53
HufAK:					
Huntington	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Slow water movement	0.46	Seepage	0.53
KxkC2:					
Knobcreek	37	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53
		Slope	0.04		
Navilleton	35	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53
		Slope	0.04		
KxlC3:					
Knobcreek	33	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53
		Slope	0.04		

Table 14a.--Sanitary Facilities--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
KxlC3:					
Haggatt-------------	26	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	0.99	Depth to hard bedrock	0.96
		Slope	0.04	Seepage	0.53
Caneyville----------	24	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	0.04	Seepage	0.53
KxlE3:					
Knobcreek-----------	35	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Haggatt-------------	22	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	0.96
		Depth to bedrock	0.99	Seepage	0.53
Caneyville----------	21	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
KxmE2:					
Knobcreek-----------	33	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Haggatt-------------	22	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Depth to hard bedrock	0.88
		Depth to bedrock	0.96	Seepage	0.53
Caneyville----------	20	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
KxoC2:					
Knobcreek-----------	29	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.04	Seepage	0.53
Navilleton----------	28	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53

Table 14a.--Sanitary Facilities--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
KxoC2:					
Haggatt-------------	27	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	0.96	Seepage	1.00
		Slope	0.04	Depth to hard bedrock	0.88
KxpD2:					
Knobcreek-----------	35	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	0.53
Haggatt-------------	31	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
		Depth to bedrock	0.96	Depth to hard bedrock	0.88
Caneyville----------	30	Very limited		Very limited	
		Slow water movement	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	1.00	Slope	1.00
		Slope	1.00	Seepage	1.00
LpoAK:					
Lindside------------	82	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	0.46	Seepage	0.53
McnGQ:					
Markland------------	90	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Slow water movement	1.00	Flooding	0.40
		Flooding	0.40		
McpC3:					
Markland------------	61	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	0.04		
McuDQ:					
Markland------------	70	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Slope	1.00	Flooding	0.40
		Flooding	0.40		
MhuA:					
McGary--------------	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		

Table 14a.--Sanitary Facilities--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
MhyB2:					
Gatton--------------	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
				Slope	0.35
NaaA:					
Nabb----------------	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
NaaB2:					
Nabb----------------	78	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
				Slope	0.35
NbhAK:					
Newark--------------	80	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	0.46	Seepage	0.53
PcrA:					
Pekin---------------	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
PcrB2:					
Pekin---------------	85	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
				Slope	0.35
PhaA:					
Peoga---------------	83	Very limited		Very limited	
		Slow water movement	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
Pml:					
Pits, quarry--------	85	Not rated		Not rated	
Ppu:					
Pits, sand and gravel-------------	80	Not rated		Not rated	

Table 14a.--Sanitary Facilities--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
RctD3:					
Rarden	40	Very limited		Very limited	
		Slow water movement	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to saturated zone	1.00
		Slope	1.00		
Coolville	19	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to soft bedrock	0.93
		Depth to bedrock	0.98	Seepage	0.53
ScbA:					
Sciotoville	70	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
ScbB2:					
Sciotoville	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
				Slope	0.10
SceB2:					
Scottsburg	96	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
		Depth to bedrock	0.22	Slope	0.10
SfyB:					
Shircliff	75	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
				Slope	0.35
SoaB:					
Spickert	95	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
		Depth to bedrock	0.11	Slope	0.35
SodB:					
Spickert	90	Very limited		Very limited	
		Slow water movement	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.53
				Slope	0.02

Table 14a.--Sanitary Facilities--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
SolC2:					
Spickert	44	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.11	Seepage	0.53
		Slope	0.04		
Wrays	32	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to bedrock	0.83	Depth to hard bedrock	0.54
		Slope	0.04	Seepage	0.53
StaAQ:					
Steff	86	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.98
		Flooding	0.40	Flooding	0.40
StdAQ:					
Stendal	88	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.46	Seepage	0.53
		Flooding	0.40	Flooding	0.40
Uaa:					
Udorthents, cut and filled	83	Not rated		Not rated	
UaoAK:					
Udifluvents, cut and filled	65	Not rated		Not rated	
Urban land	25	Not rated		Not rated	
UedA:					
Urban land	60	Not rated		Not rated	
Aquents, clayey substratum	25	Not rated		Not rated	
UndAY:					
Urban land	65	Not rated		Not rated	
Udifluvents	25	Not rated		Not rated	
UneC:					
Urban land	45	Not rated		Not rated	
Udarents, clayey substratum	30	Not rated		Not rated	

Table 14a.--Sanitary Facilities--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
UngB:					
Urban land----------	45	Not rated		Not rated	
Udarents, fragipan substratum---------	30	Not rated		Not rated	
UnkB:					
Urban land----------	45	Not rated		Not rated	
Udarents, silty substratum---------	30	Not rated		Not rated	
UnlC:					
Urban land----------	45	Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated	
UnpA:					
Urban land----------	45	Not rated		Not rated	
Udarents, loamy substratum---------	30	Not rated		Not rated	
UnrD:					
Urban land----------	50	Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated	
W:					
Water---------------	100	Not rated		Not rated	
WaaAV:					
Wakeland------------	83	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	0.46	Seepage	0.53
WaaAW:					
Wakeland------------	82	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	0.46	Seepage	0.53
WhdD2:					
Wellrock------------	33	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
				Seepage	0.53
		Slope	0.84	Depth to soft bedrock	0.26
		Depth to bedrock	0.69		

Table 14a.--Sanitary Facilities--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
WhdD2:					
Gnawbone------------	31	Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00
		Slope	0.84	Slope	1.00
		Slow water movement	0.46	Seepage	0.53
Spickert, soft bedrock substratum	25	Very limited		Very limited	
		Slow water movement	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.04	Seepage	0.53
WokAV:					
Wilbur--------------	78	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	0.46	Seepage	0.53
WokAW:					
Wilbur--------------	83	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	0.46	Seepage	0.53
WomAK:					
Wilhite-------------	85	Very limited		Very limited	
		Flooding	1.00	Ponding	1.00
		Slow water movement	1.00	Flooding	1.00
		Ponding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		

Table 14b.--Sanitary Facilities

(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
BbhA:							
Bartle--------------	83	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
BcrAQ:							
Beanblossom---------	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
						Gravel content	0.80
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	0.14
		Seepage (bottom layer)	1.00	Flooding	0.40	Depth to saturated zone	0.01
				Depth to bedrock	0.14		
		Flooding	0.40				
BcrAW:							
Beanblossom---------	89	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.80
						Depth to bedrock	0.14
		Depth to bedrock	1.00	Seepage	1.00	Depth to saturated zone	0.01
		Seepage (bottom layer)	1.00	Depth to bedrock	0.14		
BgeAZ:							
Birds---------------	95	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
				Depth to saturated zone	1.00		
		Ponding	1.00				
BlvAW:							
Kintner-------------	95	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	0.88
						Depth to saturated zone	0.47
		Depth to bedrock	1.00	Seepage	1.00		
		Seepage (bottom layer)	1.00	Depth to bedrock	0.88	Gravel content	0.19
BuoA:							
Bromer--------------	95	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
CcaG:							
Caneyville----------	53	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to bedrock	1.00
Rock outcrop--------	15	Not rated		Not rated		Not rated	

Table 14b.--Sanitary Facilities--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
CkkB2:							
Cincinnati----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.80	Depth to saturated zone	0.12	Depth to saturated zone	0.38
CldC2:							
Cincinnati----------	42	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
		Slope	0.04	Slope	0.04	Slope	0.04
Blocher-------------	34	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Depth to saturated zone	0.75	Too clayey	1.00
		Depth to saturated zone	1.00	Slope	0.04	Depth to saturated zone	0.86
		Slope	0.04			Slope	0.04
ConC3:							
Coolville-----------	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.94	Too clayey	1.00
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Slope	0.04			Depth to bedrock	0.94
						Slope	0.04
Rarden--------------	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Too clayey	1.00
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Slope	0.04			Depth to bedrock	1.00
						Slope	0.04
CtwB:							
Crider--------------	39	Very limited		Not limited		Very limited	
		Too clayey	1.00			Hard to compact	1.00
						Too clayey	0.50
Bedford-------------	29	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	0.50			Too clayey	0.50
Navilleton----------	28	Very limited		Not limited		Very limited	
		Too clayey	1.00			Hard to compact	1.00
						Too clayey	0.50
CwaAQ:							
Cuba----------------	92	Very limited		Somewhat limited		Not limited	
		Seepage (bottom layer)	1.00	Flooding	0.40		
		Flooding	0.40				
EepB:							
Elkinsville---------	85	Not limited		Not limited		Not limited	

Table 14b.--Sanitary Facilities--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
EepGQ:							
Elkinsville---------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Flooding	0.40	Flooding	0.40		
GgbG:							
Gilwood------------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Gravel content	0.14
Brownstown----------	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
		Seepage (bottom layer)	1.00	Depth to bedrock	1.00	Seepage	0.52
						Large stones	0.18
		Large stones	0.18			Gravel content	0.01
GgfE2:							
Gilwood------------	42	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.08
Wrays---------------	36	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to bedrock	0.88	Depth to bedrock	0.88
		Too clayey	0.50			Too clayey	0.50
GmaG:							
Gnawbone-----------	48	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Too clayey	0.50			Too clayey	0.50
Kurtz---------------	32	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	0.71	Depth to bedrock	0.71
		Too clayey	0.50			Too clayey	0.50
HcbAQ:							
Hatfield------------	80	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	0.50	Flooding	0.40	Too clayey	0.50
		Flooding	0.40				
HcgAH:							
Haymond------------	85	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
HcgAV:							
Haymond------------	85	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
HcgAW:							
Haymond------------	82	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		

Table 14b.--Sanitary Facilities--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
HufAK:							
Huntington----------	85	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
KxkC2:							
Knobcreek-----------	37	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Hard to compact	1.00
						Slope	0.04
Navilleton----------	35	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Depth to bedrock	1.00			Too clayey	0.50
		Slope	0.04			Slope	0.04
KxlC3:							
Knobcreek-----------	33	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Hard to compact	1.00
						Slope	0.04
Haggatt-------------	26	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	0.96	Too clayey	1.00
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Slope	0.04			Depth to bedrock	0.96
						Slope	0.04
Caneyville----------	24	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Too clayey	1.00
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Slope	0.04			Depth to bedrock	1.00
						Slope	0.04
KxlE3:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
						Slope	1.00
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.96	Hard to compact	1.00
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.96
Caneyville----------	21	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	1.00	Hard to compact	1.00
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
KxmE2:							
Knobcreek-----------	33	Very limited		Very limited		Very limited	
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
						Slope	1.00

Table 14b.--Sanitary Facilities--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
KxmE2:							
Haggatt-------------	22	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.88	Hard to compact	1.00
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.88
Caneyville----------	20	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	1.00	Hard to compact	1.00
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
KxoC2:							
Knobcreek-----------	29	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Hard to compact	1.00
						Slope	0.04
Navilleton----------	28	Very limited		Not limited		Very limited	
		Too clayey	1.00			Hard to compact	1.00
		Depth to bedrock	1.00			Too clayey	0.50
Haggatt-------------	27	Very limited		Somewhat limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	0.88	Too clayey	1.00
		Too clayey	1.00	Slope	0.04	Hard to compact	1.00
		Slope	0.04			Depth to bedrock	0.88
						Slope	0.04
KxpD2:							
Knobcreek-----------	35	Very limited		Very limited		Very limited	
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00			Hard to compact	1.00
						Slope	1.00
Haggatt-------------	31	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.88	Hard to compact	1.00
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.88
Caneyville----------	30	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	1.00	Hard to compact	1.00
		Slope	1.00	Seepage	1.00	Depth to bedrock	1.00
						Slope	1.00
LpoAK:							
Lindside------------	82	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				
McnGQ:							
Markland------------	90	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	1.00	Flooding	0.40	Too clayey	1.00
		Flooding	0.40			Hard to compact	1.00

Table 14b.--Sanitary Facilities--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
McpC3:							
Markland------------	61	Very limited		Somewhat limited		Very limited	
		Too clayey	1.00	Slope	0.04	Too clayey	1.00
		Slope	0.04			Slope	0.04
McuDQ:							
Markland------------	70	Very limited		Very limited		Very limited	
		Too clayey	1.00	Slope	1.00	Too clayey	1.00
		Slope	1.00	Flooding	0.40	Slope	1.00
		Flooding	0.40				
MhuA:							
McGary--------------	90	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
MhyB2:							
Gatton--------------	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
NaaA:							
Nabb----------------	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
NaaB2:							
Nabb----------------	78	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
NbhAK:							
Newark--------------	80	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		
PcrA:							
Pekin---------------	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
PcrB2:							
Pekin---------------	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
PhaA:							
Peoga---------------	83	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Pml:							
Pits, quarry--------	85	Not rated		Not rated		Not rated	

Table 14b.--Sanitary Facilities--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
Ppu:							
Pits, sand and gravel	80	Not rated		Not rated		Not rated	
RctD3:							
Rarden	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
		Depth to bedrock	1.00	Depth to bedrock	1.00	Too clayey	1.00
		Too clayey	1.00	Slope	1.00	Hard to compact	1.00
		Slope	1.00			Depth to bedrock	1.00
						Slope	1.00
Coolville	19	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
		Too clayey	1.00	Depth to bedrock	0.94	Hard to compact	1.00
		Slope	1.00			Slope	1.00
						Depth to bedrock	0.94
ScbA:							
Sciotoville	70	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	0.50			Too clayey	0.50
ScbB2:							
Sciotoville	75	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	0.50			Too clayey	0.50
SceB2:							
Scottsburg	96	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00			Too clayey	0.50
		Too clayey	0.50				
SfyB:							
Shircliff	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Depth to saturated zone	1.00
SoaB:							
Spickert	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00				
SodB:							
Spickert	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00				

Table 14b.--Sanitary Facilities--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
SolC2:							
Spickert------------	44	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Slope	0.04	Slope	0.04
		Slope	0.04				
Wrays---------------	32	Very limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	1.00	Depth to bedrock	0.54	Depth to bedrock	0.54
		Too clayey	0.50	Slope	0.04	Too clayey	0.50
		Slope	0.04			Slope	0.04
StaAQ:							
Steff---------------	86	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	0.40	Flooding	0.40		
StdAQ:							
Stendal-------------	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	0.40	Flooding	0.40		
Uaa:							
Udorthents, cut and filled------------	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled------------	65	Not rated		Very limited		Not rated	
				Flooding	1.00		
Urban land----------	25	Not rated		Not rated		Not rated	
UedA:							
Urban land----------	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum---------	25	Not rated		Not rated		Not rated	
UndAY:							
Urban land----------	65	Not rated		Not rated		Not rated	
Udifluvents---------	25	Not rated		Not rated		Not rated	
UneC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum---------	30	Not rated		Not rated		Not rated	
UngB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum---------	30	Not rated		Not rated		Not rated	

Table 14b.--Sanitary Facilities--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
UnkB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, silty substratum---------	30	Not rated		Not rated		Not rated	
UnlC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	
UnpA:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum---------	30	Not rated		Not rated		Not rated	
UnrD:							
Urban land----------	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Very limited		Not rated	
				Depth to bedrock	1.00		
				Slope	0.84		
W:							
Water---------------	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland-----------	83	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		
WaaAW:							
Wakeland-----------	82	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		
WhdD2:							
Wellrock-----------	33	Very limited		Somewhat limited		Somewhat limited	
		Depth to bedrock	1.00	Slope	0.84	Slope	0.84
		Slope	0.84	Depth to bedrock	0.26	Too clayey	0.50
		Too clayey	0.50			Depth to bedrock	0.26
Gnawbone-----------	31	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.84	Slope	0.84	Slope	0.84
		Too clayey	0.50			Too clayey	0.50
Spickert, soft bedrock substratum	25	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00	Slope	0.04	Slope	0.04
		Slope	0.04				

Table 14b.--Sanitary Facilities--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
WokAV:							
Wilbur--------------	78	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		
WokAW:							
Wilbur--------------	83	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		
WomAK:							
Wilhite-------------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00				

Table 15a.--Construction Materials

(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 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 as source of gravel		Potential as source of sand	
		Rating class	Value	Rating class	Value
BbhA:					
Bartle	83	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BcrAQ:					
Beanblossom	90	Fair		Poor	
		Thickest layer	0.66	Bottom layer	0.00
		Bottom layer	0.86	Thickest layer	0.00
BcrAW:					
Beanblossom	89	Fair		Poor	
		Thickest layer	0.66	Bottom layer	0.00
		Bottom layer	0.86	Thickest layer	0.00
BgeAZ:					
Birds	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
BlvAW:					
Kintner	95	Fair		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.34	Thickest layer	0.26
BuoA:					
Bromer	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CcaG:					
Caneyville	53	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	15	Not rated		Not rated	
CkkB2:					
Cincinnati	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CldC2:					
Cincinnati	42	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Blocher	34	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand	
		Rating class	Value	Rating class	Value
ConC3:					
Coolville-----------	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rarden--------------	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CtwB:					
Crider--------------	39	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Bedford-------------	29	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Navilleton----------	28	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
CwaAQ:					
Cuba----------------	92	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
EepB:					
Elkinsville---------	85	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.15	Thickest layer	0.00
EepGQ:					
Elkinsville---------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
GgbG:					
Gilwood-------------	45	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.29	Thickest layer	0.00
Brownstown----------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
GgfE2:					
Gilwood-------------	42	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.29	Thickest layer	0.00
Wrays---------------	36	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.29	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand	
		Rating class	Value	Rating class	Value
GmaG:					
Gnawbone------------	48	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kurtz---------------	32	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HcbAQ:					
Hatfield------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HcgAH:					
Haymond-------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HcgAV:					
Haymond-------------	85	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
HcgAW:					
Haymond-------------	82	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
HufAK:					
Huntington----------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
KxkC2:					
Knobcreek-----------	37	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Navilleton----------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
KxlC3:					
Knobcreek-----------	33	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Haggatt-------------	26	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Caneyville----------	24	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand	
		Rating class	Value	Rating class	Value
KxlE3:					
Knobcreek-----------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Haggatt-------------	22	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Caneyville----------	21	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
KxmE2:					
Knobcreek-----------	33	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Haggatt-------------	22	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Caneyville----------	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
KxoC2:					
Knobcreek-----------	29	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Navilleton----------	28	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Haggatt-------------	27	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
KxpD2:					
Knobcreek-----------	35	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Haggatt-------------	31	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Caneyville----------	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
LpoAK:					
Lindside------------	82	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand	
		Rating class	Value	Rating class	Value
McnGQ:					
Markland------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McpC3:					
Markland------------	61	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
McuDQ:					
Markland------------	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MhuA:					
McGary--------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
MhyB2:					
Gatton--------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
NaaA:					
Nabb----------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
NaaB2:					
Nabb----------------	78	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
NbhAK:					
Newark--------------	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
PcrA:					
Pekin---------------	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
PcrB2:					
Pekin---------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
PhaA:					
Peoga---------------	83	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Pml:					
Pits, quarry--------	85	Not rated		Not rated	

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand	
		Rating class	Value	Rating class	Value
Ppu:					
Pits, sand and gravel-------------	80	Not rated		Not rated	
RctD3:					
Rarden--------------	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Coolville-----------	19	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
ScbA:					
Sciotoville---------	70	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
ScbB2:					
Sciotoville---------	75	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
SceB2:					
Scottsburg----------	96	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SfyB:					
Shircliff-----------	75	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
SoaB:					
Spickert------------	95	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.66	Thickest layer	0.00
SodB:					
Spickert------------	90	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.66	Thickest layer	0.00
SolC2:					
Spickert------------	44	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.66	Thickest layer	0.00
Wrays---------------	32	Fair		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.29	Thickest layer	0.00
StaAQ:					
Steff---------------	86	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand	
		Rating class	Value	Rating class	Value
StdAQ:					
Stendal	88	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Uaa:					
Udorthents, cut and filled	83	Not rated		Not rated	
UaoAK:					
Udifluvents, cut and filled	65	Not rated		Not rated	
Urban land	25	Not rated		Not rated	
UedA:					
Urban land	60	Not rated		Not rated	
Aquents, clayey substratum	25	Not rated		Not rated	
UndAY:					
Urban land	65	Not rated		Not rated	
Udifluvents	25	Not rated		Not rated	
UneC:					
Urban land	45	Not rated		Not rated	
Udarents, clayey substratum	30	Not rated		Not rated	
UngB:					
Urban land	45	Not rated		Not rated	
Udarents, fragipan substratum	30	Not rated		Not rated	
UnkB:					
Urban land	45	Not rated		Not rated	
Udarents, silty substratum	30	Not rated		Not rated	
UnlC:					
Urban land	45	Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated	
UnpA:					
Urban land	45	Not rated		Not rated	
Udarents, loamy substratum	30	Not rated		Not rated	

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of gravel		Potential as source of sand	
		Rating class	Value	Rating class	Value
UnrD:					
Urban land----------	50	Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated	
W:					
Water---------------	100	Not rated		Not rated	
WaaAV:					
Wakeland-----------	83	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WaaAW:					
Wakeland-----------	82	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WhdD2:					
Wellrock-----------	33	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Gnawbone-----------	31	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Spickert, soft bedrock substratum	25	Poor		Poor	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
WokAV:					
Wilbur-------------	78	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WokAW:					
Wilbur-------------	83	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
WomAK:					
Wilhite------------	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15b.--Construction Materials

(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 as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
BbhA:							
Bartle	83	Fair		Poor		Poor	
		Too acid	0.05	Wetness	0.00	Wetness	0.00
		Content of organic matter	0.12	Low strength	0.78	Too acid	0.41
		Water erosion	0.37				
BcrAQ:							
Beanblossom	90	Fair		Fair		Poor	
		Content of organic matter	0.88	Depth to bedrock	0.87	Hard to reclaim (rock fragments)	0.00
		Water erosion	0.90			Rock fragments	0.98
		Too acid	0.92				
BcrAW:							
Beanblossom	89	Fair		Fair		Poor	
		Content of organic matter	0.88	Depth to bedrock	0.87	Hard to reclaim (rock fragments)	0.00
		Water erosion	0.90			Rock fragments	0.98
		Too acid	0.92				
BgeAZ:							
Birds	95	Fair		Poor		Poor	
		Water erosion	0.68	Wetness	0.00	Wetness	0.00
		Content of organic matter	0.82	Low strength	0.78		
		Too acid	0.99				
BlvAW:							
Kintner	95	Fair		Fair		Poor	
		Content of organic matter	0.88	Depth to bedrock	0.12	Hard to reclaim (rock fragments)	0.00
				Wetness	0.89		
		Too acid	0.97			Wetness	0.89
		Water erosion	0.99				
BuoA:							
Bromer	95	Fair		Poor		Poor	
		Content of organic matter	0.08	Wetness	0.00	Wetness	0.00
				Low strength	0.00	Too acid	0.88
		Water erosion	0.37	Shrink-swell	0.66		
		Too acid	0.50				
CcaG:							
Caneyville	53	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Droughty	0.72	Low strength	0.00	Too clayey	0.00
		Depth to bedrock	0.79	Depth to bedrock	0.00	Depth to bedrock	0.79
		Too acid	0.84	Shrink-swell	0.23	Rock fragments	0.99
		Water erosion	0.90				
		Content of organic matter	0.92				
Rock outcrop	15	Not rated		Not rated		Not rated	

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
CkkB2:							
Cincinnati----------	80	Fair		Poor		Fair	
		Content of organic matter	0.12	Low strength	0.00	Too acid	0.82
		Too acid	0.26	Wetness	0.93	Wetness	0.93
		Water erosion	0.37				
CldC2:							
Cincinnati----------	42	Fair		Poor		Fair	
		Content of organic matter	0.12	Low strength	0.00	Wetness	0.53
		Too acid	0.26	Wetness	0.53	Too acid	0.82
		Water erosion	0.37			Slope	0.96
Blocher-------------	34	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Content of organic matter	0.12	Wetness	0.53	Wetness	0.53
		Too acid	0.26	Shrink-swell	0.94	Too acid	0.82
		Water erosion	0.68			Slope	0.96
		Carbonate content	0.97				
ConC3:							
Coolville-----------	45	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Wetness	0.00
		Content of organic matter	0.12	Wetness	0.00	Too clayey	0.00
		Too acid	0.50	Depth to bedrock	0.07	Too acid	0.50
		Water erosion	0.68	Shrink-swell	0.87	Slope	0.96
Rarden--------------	45	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Wetness	0.00
		Content of organic matter	0.50	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Wetness	0.00	Too acid	0.41
		Water erosion	0.68	Shrink-swell	0.87	Slope	0.96
		Droughty	0.70			Depth to bedrock	0.97
		Depth to bedrock	0.97				
CtwB:							
Crider--------------	39	Fair		Poor		Fair	
		Too acid	0.32	Low strength	0.00	Too acid	0.98
		Content of organic matter	0.50	Shrink-swell	0.88		
		Water erosion	0.68				
Bedford-------------	29	Fair		Poor		Fair	
		Too acid	0.08	Low strength	0.00	Wetness	0.14
		Content of organic matter	0.12	Wetness	0.14	Too acid	0.50
		Water erosion	0.37	Shrink-swell	0.78		
Navilleton----------	28	Fair		Poor		Fair	
		Content of organic matter	0.12	Low strength	0.00	Too acid	0.98
		Too acid	0.32	Shrink-swell	0.51		
		Water erosion	0.68				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
CwaAQ:							
Cuba----------------	92	Fair		Poor		Fair	
		Too acid	0.32	Low strength	0.00	Too acid	0.88
		Water erosion	0.68				
		Content of organic matter	0.88				
EepB:							
Elkinsville---------	85	Fair		Fair		Good	
		Content of organic matter	0.12	Shrink-swell	0.87		
		Too acid	0.32				
		Water erosion	0.90				
EepGQ:							
Elkinsville---------	85	Fair		Poor		Poor	
		Content of organic matter	0.12	Slope	0.00	Slope	0.00
				Shrink-swell	0.87	Too acid	0.92
		Too acid	0.32				
		Water erosion	0.90				
GgbG:							
Gilwood-------------	45	Fair		Poor		Poor	
		Content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
				Slope	0.00	Slope	0.00
		Too acid	0.50			Too acid	0.59
		Depth to bedrock	0.71			Depth to bedrock	0.71
		Droughty	0.81				
		Water erosion	0.99				
Brownstown----------	35	Fair		Poor		Poor	
		Content of organic matter	0.12	Slope	0.00	Slope	0.00
				Depth to bedrock	0.00	Rock fragments	0.00
		Droughty	0.20	Cobbles	0.51	Too acid	0.59
		Too acid	0.50			Depth to bedrock	0.93
		Depth to bedrock	0.93				
		Cobbles	0.98				
GgfE2:							
Gilwood-------------	42	Fair		Poor		Poor	
		Content of organic matter	0.12	Depth to bedrock	0.00	Rock fragments	0.00
				Slope	0.50	Slope	0.00
		Too acid	0.50			Too acid	0.59
		Depth to bedrock	0.71			Depth to bedrock	0.71
		Droughty	0.81				
		Water erosion	0.99				
Wrays---------------	36	Fair		Poor		Poor	
		Too acid	0.50	Low strength	0.00	Slope	0.00
		Water erosion	0.68	Depth to bedrock	0.12	Hard to reclaim (rock fragments)	0.00
		Content of organic matter	0.88	Shrink-swell	0.98		
						Too acid	0.59
GmaG:							
Gnawbone------------	48	Fair		Poor		Poor	
		Content of organic matter	0.50	Low strength	0.00	Slope	0.00
				Slope	0.00	Too acid	0.50
		Too acid	0.50	Depth to bedrock	0.00	Depth to bedrock	0.99
		Water erosion	0.68				
		Depth to bedrock	0.99				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
GmaG:							
Kurtz	32	Fair		Poor		Poor	
		Content of organic matter	0.50	Low strength	0.00	Slope	0.00
				Slope	0.00	Too acid	0.50
		Too acid	0.50	Depth to bedrock	0.29		
		Water erosion	0.90	Shrink-swell	0.87		
HcbAQ:							
Hatfield	80	Fair		Poor		Poor	
		Content of organic matter	0.12	Wetness	0.00	Wetness	0.00
				Low strength	0.00	Too clayey	0.59
		Too acid	0.32			Too acid	0.88
		Water erosion	0.68				
		Too clayey	0.82				
HcgAH:							
Haymond	85	Fair		Good		Good	
		Water erosion	0.37				
		Too acid	0.97				
HcgAV:							
Haymond	85	Fair		Good		Good	
		Water erosion	0.37				
		Too acid	0.97				
HcgAW:							
Haymond	82	Fair		Good		Good	
		Water erosion	0.37				
		Too acid	0.99				
HufAK:							
Huntington	85	Fair		Poor		Good	
		Water erosion	0.99	Low strength	0.00		
KxkC2:							
Knobcreek	37	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Content of organic matter	0.12	Shrink-swell	0.22	Too acid	0.88
						Slope	0.96
		Too acid	0.20				
		Water erosion	0.68				
Navilleton	35	Fair		Poor		Fair	
		Content of organic matter	0.12	Low strength	0.00	Slope	0.96
				Shrink-swell	0.51	Too acid	0.98
		Too acid	0.32				
		Water erosion	0.68				
KxlC3:							
Knobcreek	33	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Content of organic matter	0.12	Shrink-swell	0.16	Too acid	0.88
						Slope	0.96
		Too acid	0.20				
		Water erosion	0.90				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
KxlC3:							
Haggatt-------------	26	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Depth to bedrock	0.04	Too acid	0.92
		Content of organic matter	0.50	Shrink-swell	0.14	Slope	0.96
		Water erosion	0.99				
		Droughty	0.99				
Caneyville----------	24	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Droughty	0.00	Depth to bedrock	0.00	Depth to bedrock	0.10
		Depth to bedrock	0.10	Shrink-swell	0.12	Slope	0.96
		Too acid	0.61			Rock fragments	0.97
		Content of organic matter	0.92			Too acid	0.99
		Water erosion	0.99				
KxlE3:							
Knobcreek-----------	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Content of organic matter	0.12	Shrink-swell	0.16	Too clayey	0.00
				Slope	0.82	Too acid	0.88
		Too acid	0.20				
		Water erosion	0.90				
Haggatt-------------	22	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Too acid	0.50	Depth to bedrock	0.04	Too clayey	0.00
		Content of organic matter	0.50	Shrink-swell	0.14	Too acid	0.92
				Slope	0.82		
		Water erosion	0.99				
		Droughty	0.99				
Caneyville----------	21	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.00	Low strength	0.00	Slope	0.00
		Depth to bedrock	0.10	Shrink-swell	0.12	Depth to bedrock	0.10
		Too acid	0.61	Slope	0.82	Rock fragments	0.97
		Content of organic matter	0.92			Too acid	0.99
KxmE2:							
Knobcreek-----------	33	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Content of organic matter	0.12	Shrink-swell	0.22	Too clayey	0.00
				Slope	0.82	Too acid	0.88
		Too acid	0.20				
		Water erosion	0.68				
Haggatt-------------	22	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Depth to bedrock	0.12	Slope	0.00
		Content of organic matter	0.50	Shrink-swell	0.23	Too acid	0.92
				Slope	0.82		
		Water erosion	0.90				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
KxmE2:							
Caneyville----------	20	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Too acid	0.61	Low strength	0.00	Slope	0.00
		Droughty	0.67	Shrink-swell	0.12	Depth to bedrock	0.93
		Water erosion	0.90	Slope	0.82	Rock fragments	0.99
		Content of organic matter	0.92			Too acid	0.99
		Depth to bedrock	0.93				
KxoC2:							
Knobcreek-----------	29	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Content of organic matter	0.12	Shrink-swell	0.22	Too acid	0.88
						Slope	0.96
		Too acid	0.20				
		Water erosion	0.68				
Navilleton----------	28	Fair		Poor		Fair	
		Content of organic matter	0.12	Low strength	0.00	Too acid	0.98
				Shrink-swell	0.51		
		Too acid	0.32				
		Water erosion	0.68				
Haggatt-------------	27	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Content of organic matter	0.50	Depth to bedrock	0.12	Too acid	0.92
				Shrink-swell	0.23	Slope	0.96
		Too acid	0.50				
		Water erosion	0.90				
KxpD2:							
Knobcreek-----------	35	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Content of organic matter	0.12	Shrink-swell	0.22	Too clayey	0.00
				Slope	0.98	Too acid	0.88
		Too acid	0.20				
		Water erosion	0.68				
Haggatt-------------	31	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.50	Depth to bedrock	0.12	Slope	0.00
		Content of organic matter	0.50	Shrink-swell	0.23	Too acid	0.92
				Slope	0.98		
		Water erosion	0.90				
Caneyville----------	30	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Too acid	0.61	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.67	Shrink-swell	0.12	Depth to bedrock	0.93
		Water erosion	0.90	Slope	0.82	Rock fragments	0.99
		Content of organic matter	0.92			Too acid	0.99
		Depth to bedrock	0.93				
LpoAK:							
Lindside------------	82	Fair		Poor		Fair	
		Water erosion	0.90	Low strength	0.00	Wetness	0.14
		Too acid	0.92	Wetness	0.14		
				Shrink-swell	0.95		

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
McnGQ:							
Markland------------	90	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Too clayey	0.00
		Carbonate content	0.32	Low strength	0.00	Slope	0.00
		Content of organic matter	0.88	Shrink-swell	0.12		
		Too acid	0.88				
		Water erosion	0.90				
McpC3:							
Markland------------	61	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Carbonate content	0.32	Shrink-swell	0.35	Slope	0.96
		Content of organic matter	0.88				
		Too acid	0.88				
		Water erosion	0.90				
McuDQ:							
Markland------------	70	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Carbonate content	0.32	Shrink-swell	0.39	Slope	0.00
		Content of organic matter	0.88	Slope	0.92		
		Too acid	0.88				
		Water erosion	0.90				
MhuA:							
McGary--------------	90	Poor		Poor		Poor	
		Too clayey	0.00	Wetness	0.00	Wetness	0.00
		Carbonate content	0.32	Low strength	0.00	Too clayey	0.00
		Content of organic matter	0.50	Shrink-swell	0.27		
		Water erosion	0.68				
MhyB2:							
Gatton--------------	90	Fair		Poor		Fair	
		Content of organic matter	0.12	Low strength	0.00	Wetness	0.14
				Wetness	0.14	Too acid	0.95
		Water erosion	0.37				
		Too acid	0.46				
NaaA:							
Nabb----------------	85	Fair		Poor		Fair	
		Too acid	0.12	Low strength	0.00	Wetness	0.14
		Content of organic matter	0.12	Wetness	0.14	Too acid	0.76
		Water erosion	0.37				
NaaB2:							
Nabb----------------	78	Fair		Poor		Fair	
		Too acid	0.12	Low strength	0.00	Wetness	0.14
		Content of organic matter	0.12	Wetness	0.14	Too acid	0.76
		Water erosion	0.37				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
NbhAK:							
Newark--------------	80	Fair		Poor		Poor	
		Water erosion	0.90	Low strength	0.00	Wetness	0.00
				Wetness	0.00		
				Shrink-swell	0.87		
PcrA:							
Pekin---------------	90	Fair		Poor		Fair	
		Too acid	0.03	Low strength	0.00	Wetness	0.14
		Content of organic matter	0.12	Wetness	0.14	Too acid	0.76
		Water erosion	0.37				
PcrB2:							
Pekin---------------	85	Fair		Fair		Fair	
		Too acid	0.03	Wetness	0.14	Wetness	0.14
		Content of organic matter	0.12			Too acid	0.32
		Water erosion	0.37				
PhaA:							
Peoga---------------	83	Fair		Poor		Poor	
		Content of organic matter	0.12	Wetness	0.00	Wetness	0.00
				Low strength	0.00	Too acid	0.68
		Too acid	0.16				
		Water erosion	0.37				
Pml:							
Pits, quarry--------	85	Not rated		Not rated		Not rated	
Ppu:							
Pits, sand and gravel-------------	80	Not rated		Not rated		Not rated	
RctD3:							
Rarden--------------	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.24	Low strength	0.00	Slope	0.00
		Content of organic matter	0.50	Wetness	0.00	Wetness	0.00
				Shrink-swell	0.87	Too acid	0.41
		Too acid	0.50	Slope	0.92	Depth to bedrock	0.71
		Water erosion	0.68				
		Depth to bedrock	0.71				
Coolville-----------	19	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Content of organic matter	0.12	Wetness	0.00	Too clayey	0.00
				Depth to bedrock	0.07	Wetness	0.00
		Too acid	0.50	Shrink-swell	0.87	Too acid	0.50
		Water erosion	0.68				
ScbA:							
Sciotoville---------	70	Fair		Fair		Fair	
		Content of organic matter	0.12	Wetness	0.14	Wetness	0.14
						Too acid	0.76
		Too acid	0.20				
		Water erosion	0.68				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
ScbB2:							
Sciotoville---------	75	Fair		Fair		Fair	
		Content of organic matter	0.12	Wetness	0.14	Wetness	0.14
						Too acid	0.76
		Too acid	0.20				
		Water erosion	0.68				
SceB2:							
Scottsburg----------	96	Fair		Poor		Fair	
		Too acid	0.05	Low strength	0.00	Wetness	0.14
		Content of organic matter	0.12	Wetness	0.14	Too acid	0.76
				Shrink-swell	0.87		
		Water erosion	0.68				
SfyB:							
Shircliff-----------	75	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Content of organic matter	0.12	Wetness	0.14	Wetness	0.14
				Shrink-swell	0.51		
		Too acid	0.32				
		Water erosion	0.68				
		Carbonate content	0.68				
SoaB:							
Spickert------------	95	Fair		Fair		Fair	
		Content of organic matter	0.12	Wetness	0.14	Wetness	0.14
				Low strength	0.22	Too acid	0.82
		Too acid	0.16				
		Water erosion	0.37				
SodB:							
Spickert------------	90	Fair		Fair		Fair	
		Content of organic matter	0.12	Wetness	0.14	Wetness	0.14
				Low strength	0.22	Too acid	0.82
		Too acid	0.16				
		Water erosion	0.37				
SolC2:							
Spickert------------	44	Fair		Fair		Fair	
		Content of organic matter	0.12	Wetness	0.14	Wetness	0.14
				Low strength	0.22	Too acid	0.82
		Too acid	0.16			Slope	0.96
		Water erosion	0.37				
Wrays---------------	32	Fair		Poor		Poor	
		Too acid	0.50	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
		Water erosion	0.68	Depth to bedrock	0.46		
		Content of organic matter	0.88	Shrink-swell	0.97	Too acid	0.76
						Slope	0.96
StaAQ:							
Steff---------------	86	Fair		Poor		Fair	
		Too acid	0.32	Low strength	0.00	Wetness	0.14
		Content of organic matter	0.50	Wetness	0.14	Too acid	0.88
		Water erosion	0.68				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
StdAQ:							
Stendal-------------	88	Fair		Poor		Poor	
		Too acid	0.32	Wetness	0.00	Wetness	0.00
		Content of organic matter	0.50	Low strength	0.00	Too acid	0.88
		Water erosion	0.68				
Uaa:							
Udorthents, cut and filled-------------	83	Not rated		Not rated		Not rated	
UaoAK:							
Udifluvents, cut and filled-------------	65	Not rated		Not rated		Not rated	
Urban land----------	25	Not rated		Not rated		Not rated	
UedA:							
Urban land----------	60	Not rated		Not rated		Not rated	
Aquents, clayey substratum---------	25	Not rated		Not rated		Not rated	
UndAY:							
Urban land----------	65	Not rated		Not rated		Not rated	
Udifluvents---------	25	Not rated		Not rated		Not rated	
UneC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, clayey substratum---------	30	Not rated		Not rated		Not rated	
UngB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, fragipan substratum---------	30	Not rated		Not rated		Not rated	
UnkB:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, silty substratum---------	30	Not rated		Not rated		Not rated	
UnlC:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, hard bedrock substratum	30	Not rated		Not rated		Not rated	
UnpA:							
Urban land----------	45	Not rated		Not rated		Not rated	
Udarents, loamy substratum---------	30	Not rated		Not rated		Not rated	

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material: Rating class and limiting features	Value	Potential as source of roadfill: Rating class and limiting features	Value	Potential as source of topsoil: Rating class and limiting features	Value
UnrD:							
Urban land----------	50	Not rated		Not rated		Not rated	
Udarents, soft bedrock substratum	30	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	
WaaAV:							
Wakeland------------	83	Fair		Poor		Poor	
		Content of organic matter	0.12	Wetness	0.00	Wetness	0.00
		Water erosion	0.37				
		Too acid	0.99				
WaaAW:							
Wakeland------------	82	Fair		Poor		Poor	
		Content of organic matter	0.12	Wetness	0.00	Wetness	0.00
		Water erosion	0.37				
		Too acid	0.99				
WhdD2:							
Wellrock------------	33	Fair		Poor		Fair	
		Water erosion	0.37	Low strength	0.00	Slope	0.16
		Too acid	0.50	Depth to bedrock	0.74	Too acid	0.50
		Content of organic matter	0.88				
Gnawbone------------	31	Fair		Poor		Fair	
		Content of organic matter	0.50	Low strength	0.00	Slope	0.16
				Depth to bedrock	0.00	Too acid	0.50
		Too acid	0.50			Depth to bedrock	0.99
		Water erosion	0.68				
		Depth to bedrock	0.99				
Spickert, soft bedrock substratum	25	Fair		Fair		Fair	
		Content of organic matter	0.12	Wetness	0.14	Wetness	0.14
				Low strength	0.78	Slope	0.96
		Too acid	0.20			Too acid	0.98
		Water erosion	0.37				
WokAV:							
Wilbur--------------	78	Fair		Fair		Fair	
		Water erosion	0.37	Wetness	0.14	Wetness	0.14
		Content of organic matter	0.88				
		Too acid	0.99				
WokAW:							
Wilbur--------------	83	Fair		Fair		Fair	
		Water erosion	0.37	Wetness	0.14	Wetness	0.14
		Content of organic matter	0.88				
		Too acid	0.99				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WomAK:							
Wilhite-------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.80	Wetness	0.00	Wetness	0.00
		Water erosion	0.99	Shrink-swell	0.53		

Table 16.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated. The representative values for USDA texture and Unified and AASHTO classifications are designated with an asterisk. The representative value is the one that occurs most commonly)

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	
BbhA:												
Bartle----------	0-8	Silt loam*	CL-ML*, ML	A-4*	0	0	100	100	90-100	80-95	18-24	3-7
	8-17	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	80-95	20-26	3-8
	17-30	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-95	24-38	7-14
	30-50	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	85-95	24-38	7-14
	50-80	Silt loam*, loam, silty clay loam.	CL*, CL-ML	A-4*, A-6	0	0	100	100	85-100	60-95	24-38	7-14
BcrAQ:												
Beanblossom-----	0-5	Silt loam*	CL-ML*, ML	A-4*	0	0-2	90-100	85-100	70-100	50-90	18-30	2-10
	5-24	Silt loam*, very channery silt loam, loam, very channery loam.	CL-ML*, GC, GC-GM, ML	A-4*, A-2-4	0	0-35	40-95	35-90	30-90	20-80	16-30	3-10
	24-54	Extremely channery loam*, extremely channery silt loam, stratified extremely channery loam to very channery silt loam to extremely channery silt loam.	GC-GM*, GC, GM, GW-GM	A-1-b*, A-1-a, A-2-4, A-2-6, A-4	0	0-30	15-55	10-50	8-50	6-45	20-32	NP-12
	54-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
BcrAW:												
Beanblossom-----	0-5	Silt loam*	CL-ML*, ML	A-4*	0	0-2	90-100	85-100	70-100	50-90	18-30	2-10
	5-24	Silt loam*, very channery silt loam, loam, very channery loam.	CL-ML*, GC, GC-GM, ML	A-4*, A-2-4	0	0-35	40-95	35-90	30-90	20-80	16-30	3-10
	24-54	Extremely channery loam*, extremely channery silt loam, stratified extremely channery loam to very channery silt loam to extremely channery silt loam.	GC-GM*, GC, GM, GW-GM	A-1-b*, A-2-4, A-2-6, A-4, A-1-a	0	0-30	15-55	10-50	8-50	6-45	20-32	NP-12
	54-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
BgeAZ:												
Birds-----------	0-8	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	90-100	80-100	24-34	5-12
	8-43	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	90-100	80-100	24-34	5-12
	43-60	Silt loam*, stratified silt loam to loam.	CL*, CL-ML	A-4*, A-6	0	0	100	95-100	75-100	55-95	20-34	5-12
BlvAW:												
Kintner---------	0-5	Loam*, silt loam	CL-ML*, ML	A-4*	0	0-4	95-100	85-100	70-100	50-90	16-25	2-8
	5-23	Silt loam*, loam	CL-ML*, ML	A-4*	0	0-5	85-100	80-100	70-100	50-90	16-30	3-10
	23-48	Extremely gravelly sandy loam*, very gravelly sandy loam, extremely gravelly loam, very gravelly loam.	SC-SM*, GC-GM, SM, GM, SC	A-2-4*, A-1-a, A-1-b, A-4	0-8	0-15	15-65	10-55	8-55	5-45	17-28	NP-10
	48-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
BuoA:												
Bromer----------	0-8	Silt loam*	CL-ML*, CL, ML	A-6*, A-4	0	0	100	100	95-100	85-100	22-40	1-17
	8-16	Silt loam*	CL*, ML, CL-ML	A-4*, A-6	0	0	100	100	95-100	85-100	23-40	2-17
	16-34	Silty clay loam*, silt loam.	CL*, ML, CL-ML	A-6*, A-7-6, A-4	0	0	100	100	95-100	85-100	23-50	2-29
	34-80	Silty clay*, clay.	CH*, CL	A-7-6*	0	0-5	95-100	95-100	85-100	85-100	44-64	20-42
CcaG:												
Caneyville------	0-8	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0-2	0-3	95-100	95-100	90-100	80-100	20-40	2-17
	8-14	Silty clay loam*, silt loam.	CL*	A-6*, A-7-6	0-2	0-3	95-100	95-100	90-100	85-100	30-50	11-29
	14-33	Clay*, silty clay	CH*, CL	A-7*	0-2	0-15	90-100	85-100	85-100	80-100	44-75	20-45
	33-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
CkkB2:												
Cincinnati------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	80-95	23-40	3-15
	8-31	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-7-6, A-4	0	0	100	100	90-100	80-95	24-45	5-25
	31-72	Silt loam*, loam	CL*	A-6*, A-4	0	0	98-100	95-100	85-95	55-80	24-44	8-25
	72-80	Clay loam*, loam	CL*	A-6*, A-4, A-7-6	0	0-2	90-100	85-95	70-90	55-75	25-50	8-30
CldC2:												
Cincinnati------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	80-95	23-40	3-15
	8-24	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-7-6, A-4	0	0	100	100	90-100	80-95	24-45	5-25
	24-74	Silt loam*, loam	CL*	A-6*, A-4	0	0	98-100	95-100	85-95	55-85	24-44	8-25
	74-80	Clay loam*, loam	CL*	A-6*, A-4, A-7-6	0	0-2	90-100	85-95	70-90	55-70	25-50	8-30

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
CldC2:												
Blocher---------	0-7	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	90-100	80-90	23-40	3-15
	7-17	Silty clay loam*, silt loam, loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	80-100	65-90	24-48	5-27
	17-44	Clay*, clay loam	CL*, CH	A-7-6*, A-6	0	0	90-100	85-95	75-95	60-75	30-53	11-33
	44-76	Clay loam*, clay	CL*	A-6*, A-7-6	0	0-2	95-100	90-95	75-95	60-75	25-50	11-30
	76-80	Loam*, clay loam	CL*, CL-ML	A-6*, A-4	0	0-2	95-100	90-95	75-90	55-70	19-40	4-20
ConC3:												
Coolville-------	0-4	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	90-100	85-100	24-40	3-15
	4-17	Silty clay loam*	CL*	A-7*, A-6	0	0	95-100	95-100	90-100	85-100	35-50	15-25
	17-38	Silty clay*, silty clay loam.	CH*, CL, ML	A-7*	0	0-5	95-100	85-100	80-100	75-100	41-65	13-36
	38-43	Parachannery silty clay loam*, parachannery silty clay, very parachannery silty clay, extremely parachannery silty clay loam.	CL*, CH, ML	A-7*	0	0-5	95-100	85-100	80-100	75-100	41-65	13-36
	43-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
Rarden----------	0-6	Silty clay loam*	CL*	A-6*, A-7	0	0	100	95-100	95-100	85-100	30-50	12-30
	6-28	Silty clay*, clay, silty clay loam.	CH*, ML	A-7*	0-2	0-5	95-100	90-100	85-100	85-100	41-70	13-45
	28-37	Extremely parachannery silty clay*, parachannery silty clay, extremely parachannery silty clay loam, parachannery silty clay loam.	CH*, CL, ML	A-7*	0-2	0-5	95-100	90-100	85-100	85-95	41-65	13-36
	37-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
CtwB:												
Crider----------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	85-100	22-40	1-17
	8-34	Silty clay loam*, silt loam.	CL*, CL-ML, ML	A-6*, A-4, A-7-6	0	0	100	95-100	95-100	85-100	23-50	3-29
	34-46	Silty clay loam*, silt loam.	CL*	A-6*	0-5	0-5	90-100	90-100	85-100	80-95	30-40	10-16
	46-80	Clay*, silty clay, silty clay loam.	CH*, CL	A-7-6*	0-5	0-5	80-100	80-100	75-100	70-95	45-65	16-42
Bedford---------	0-9	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	85-100	23-40	3-15
	9-24	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	85-100	25-50	6-30
	24-51	Silty clay loam*, silt loam, gravelly silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0-10	60-100	55-95	55-95	50-95	25-50	6-30
	51-80	Clay*, silty clay, gravelly clay.	CH*, CL	A-7-6*	0	0-5	60-100	55-95	55-95	50-90	44-75	20-46
Navilleton------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	85-100	22-40	1-17
	8-35	Silty clay loam*, silt loam.	CL*, CL-ML, ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	85-100	23-50	3-29
	35-65	Clay*, silty clay	CH*, CL	A-7-6*	0-5	0-5	80-100	80-100	80-100	75-100	44-75	20-46
	65-79	Clay*, silty clay	CH*, CL	A-7-6*	0-5	0-5	80-100	80-100	80-100	75-100	44-75	20-46
	79-83	Bedrock*	---	---	---	---	---	---	---	---	---	---
CwaAQ:												
Cuba------------	0-10	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	95-100	90-100	80-98	20-38	4-15
	10-47	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	95-100	90-100	80-98	22-38	5-15
	47-60	Silt loam*, stratified silt loam to loam to sandy loam.	CL*, ML, SC, SM	A-4*, A-2, A-2-4, A-6	0	0	90-100	80-100	50-100	25-98	15-38	2-15

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
EepB:												
Elkinsville-----	0-10	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	75-95	22-40	2-15
	10-26	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	90-100	75-95	25-50	5-28
	26-48	Loam*, clay loam, sandy clay loam.	CL*, CL-ML, SC, SC-SM	A-6*, A-4	0	0	95-100	90-100	70-100	35-80	24-38	7-14
	48-64	Loam*, sandy loam, clay loam.	CL*, CL-ML, SC, SC-SM	A-4*, A-6, A-2-4, A-2-6	0	0	95-100	90-100	55-100	25-80	22-35	5-12
	64-80	Loam*, fine sandy loam, sandy loam.	SC-SM*, CL, CL-ML, SC	A-4*, A-2-4	0	0	85-100	80-100	50-95	25-75	20-30	4-10
EepGQ:												
Elkinsville-----	0-6	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	75-95	22-40	2-15
	6-36	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	90-100	75-95	25-50	5-28
	36-75	Loam*, sandy loam, clay loam.	CL*, CL-ML, SC, SC-SM	A-4*, A-2-4, A-2-6, A-6	0	0	95-100	90-100	55-100	25-80	22-35	5-12
	75-80	Loam*, fine sandy loam, sandy loam.	SC*, CL, CL-ML, SC-SM	A-4*, A-2-4	0	0	85-100	80-100	50-95	25-75	20-30	4-10
GgbG:												
Gilwood---------	0-6	Silt loam*, channery silt loam.	CL-ML*, CL, ML, GC-GM, GM	A-4*	0	0-5	60-100	55-100	50-100	40-95	18-25	3-8
	6-11	Channery silt loam*, silt loam.	CL-ML*, CL, GC-GM, GC	A-4*	0	0-10	60-100	55-95	50-95	40-95	22-28	5-9
	11-22	Channery silt loam*.	CL*, CL-ML, GC, GC-GM	A-4*, A-6	0-5	0-10	60-80	55-75	50-75	40-75	24-32	6-12
	22-32	Extremely channery silt loam*, very channery silt loam.	GC-GM*, CL-ML, GC, GM, ML	A-2-4*, A-1-b, A-4	0-10	10-40	35-65	30-55	25-55	15-55	18-30	3-10
	32-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
GgbG:												
Brownstown------	0-6	Silt loam*, channery silt loam.	ML*, CL-ML, GC-GM, GM	A-4*, A-2-4	0	0-10	55-100	50-100	45-100	34-95	0-25	NP-7
	6-18	Channery silt loam*, very channery silt loam, extremely channery silt loam.	GM*, CL-ML, GC-GM, ML	A-4*, A-2-4	0-10	10-50	40-80	35-75	30-75	25-70	0-25	NP-7
	18-36	Extremely channery silt loam*.	GM*, GC-GM	A-2-4*, A-1, A-4	0-30	30-55	30-60	25-55	25-55	15-45	0-25	NP-7
	36-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
GgfE2:												
Gilwood---------	0-6	Silt loam*	CL-ML*, CL, ML	A-4*	0	0-5	85-100	85-100	80-100	70-100	18-25	3-8
	6-11	Channery silt loam*, silt loam.	CL-ML*, CL, GC-GM, GC	A-4*	0	0-10	60-100	55-95	50-95	40-95	22-28	5-9
	11-22	Channery silt loam*.	CL*, CL-ML, GC, GC-GM	A-4*, A-6	0-5	0-10	60-80	55-75	50-75	40-75	24-32	6-12
	22-32	Extremely channery silt loam*, very channery silt loam.	GC-GM*, CL-ML, GC, GM, ML	A-2-4*, A-1-b, A-4	0-10	10-40	35-65	30-55	25-55	15-55	18-30	3-10
	32-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
GgfE2:												
Wrays-----------	0-6	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	90-100	23-35	3-12
	6-25	Silty clay loam*, silt loam.	CL*	A-6*, A-7-6	0	0	100	100	95-100	90-100	30-50	12-30
	25-34	Silty clay loam*, channery silty clay loam, silt loam, channery silt loam.	CL*, GC	A-6*, A-4, A-7-6	0	0-10	65-100	60-95	55-95	45-90	30-44	8-20
	34-44	Extremely channery silt loam*, extremely channery silty clay loam, channery silt loam, channery silty clay loam.	GC*, CL, GM, ML	A-4*, A-2-4, A-2-6, A-6	0-10	10-40	35-85	30-80	25-80	15-75	18-38	3-14
	44-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
GmaG:												
Gnawbone--------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	95-100	90-100	90-100	80-95	16-25	2-8
	7-27	Parachannery silty clay loam*, parachannery silt loam, silty clay loam, silt loam.	CL*	A-6*, A-4, A-7	0	0-3	85-100	80-100	80-100	70-95	30-44	8-20
	27-39	Extremely parachannery silt loam*, very parachannery silt loam, parachannery silty clay loam, very parachannery silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7	0-1	0-5	85-100	80-100	80-100	70-95	20-42	7-18
	39-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
GmaG:												
Kurtz-----------	0-6	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	90-100	90-100	85-100	75-100	20-35	3-12
	6-36	Silty clay loam*, silt loam, parachannery silty clay loam, parachannery silt loam.	CL*	A-6*, A-4, A-7	0	0-3	90-100	90-99	85-99	75-99	30-50	8-25
	36-47	Extremely parachannery silty clay loam*, very parachannery silty clay loam, extremely parachannery silt loam, very parachannery silt loam.	CL*	A-6*, A-4, A-7	0-1	0-3	90-100	90-99	85-99	75-99	30-46	8-23
	47-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
HcbAQ:												
Hatfield--------	0-10	Silty clay loam*	CL*	A-7-6*, A-6	0	0	98-100	95-100	90-100	85-100	35-50	11-24
	10-32	Silty clay loam*	CL*	A-7-6*, A-6	0	0	98-100	95-100	90-100	85-100	35-50	11-26
	32-64	Silty clay loam*, silt loam.	CL*	A-6*, A-4, A-7-6	0	0	98-100	95-100	90-100	85-100	24-44	8-24
	64-80	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	95-100	90-100	85-100	80-100	20-44	5-24
HcgAH:												
Haymond---------	0-10	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	85-100	20-30	3-10
	10-44	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	80-100	20-30	3-10
	44-60	Silt loam*, stratified silt loam to sandy loam to loam.	CL-ML*, CL, ML, SC, SM	A-4*, A-6	0	0	95-100	90-100	65-100	35-90	15-35	2-15

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
HcgAV:												
Haymond---------	0-10	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	85-100	20-30	3-10
	10-44	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	80-100	20-30	3-10
	44-60	Silt loam*, stratified silt loam to sandy loam to loam.	CL-ML*, CL, ML, SC, SM	A-4*, A-6	0	0	95-100	90-100	65-100	35-90	15-35	2-15
HcgAW:												
Haymond---------	0-9	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	85-100	20-30	3-10
	9-44	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	80-100	20-30	3-10
	44-60	Silt loam*, stratified silt loam to sandy loam to loam.	CL-ML*, CL, ML, SC, SM	A-4*, A-6	0	0	95-100	90-100	65-100	35-90	15-35	2-15
HufAK:												
Huntington------	0-12	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	98-100	95-100	90-100	80-95	25-32	7-12
	12-42	Silt loam*, silty clay loam.	CL*	A-6*, A-4, A-7	0	0	98-100	95-100	90-100	80-95	25-44	8-18
	42-80	Silty clay loam*, silt loam, loam, sandy loam.	CL*, ML, SC, SM	A-6*, A-7, A-4	0	0	98-100	95-100	65-100	35-90	20-44	3-20
KxkC2:												
Knobcreek-------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	90-100	90-100	90-100	85-100	22-40	1-17
	7-18	Silty clay loam*, silt loam.	CL*, CL-ML, ML	A-6*, A-4, A-7-6	0	0	80-100	80-100	80-100	70-100	23-50	3-29
	18-63	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-46
	63-80	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-45

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
KxkC2:												
Navilleton------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	85-100	22-40	1-17
	8-35	Silty clay loam*, silt loam.	CL*, CL-ML, ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	85-100	23-50	3-29
	35-43	Clay*, silty clay	CH*, CL	A-7-6*	0-5	0-5	80-100	80-100	80-100	75-100	44-75	20-46
	43-72	Clay*, silty clay	CH*, CL	A-7-6*	0-5	0-5	80-100	80-100	80-100	75-100	44-75	20-46
	72-82	Bedrock*	---	---	---	---	---	---	---	---	---	---
KxlC3:												
Knobcreek-------	0-6	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6, A-7-6	0	0	80-100	80-100	80-100	75-100	24-48	5-27
	6-13	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	80-100	80-100	80-100	70-100	24-50	5-29
	13-60	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-46
	60-80	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-45
Haggatt---------	0-5	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6, A-7-6	0	0	90-100	85-100	80-100	60-100	24-48	5-27
	5-11	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	80-100	75-100	70-100	60-100	24-50	4-30
	11-42	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-8	0-8	75-100	75-100	65-95	60-95	44-75	20-46
	42-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
Caneyville------	0-5	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0-2	0-10	90-100	85-100	80-100	60-100	24-48	5-27
	5-24	Clay*, silty clay	CH*, CL	A-7*	0-2	0-15	90-100	85-100	85-100	80-100	44-75	20-45
	24-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
KxlE3:												
Knobcreek-------	0-6	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6, A-7-6	0	0	80-100	80-100	80-100	75-100	24-48	5-27
	6-13	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	80-100	80-100	80-100	70-100	24-50	5-29
	13-60	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-46
	60-80	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-45
Haggatt---------	0-5	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6, A-7-6	0	0	90-100	85-100	80-100	60-100	24-48	5-27
	5-11	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	80-100	75-100	70-100	60-100	24-50	4-30
	11-42	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-8	0-8	75-100	75-100	65-95	60-95	44-75	20-46
	42-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
Caneyville------	0-5	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0-2	0-10	90-100	85-100	80-100	60-100	24-48	5-27
	5-24	Clay*, silty clay	CH*, CL	A-7*	0-2	0-15	90-100	85-100	85-100	80-100	44-75	20-45
	24-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
KxmE2:												
Knobcreek-------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	90-100	90-100	90-100	85-100	22-40	1-17
	7-18	Silty clay loam*, silt loam.	CL*, CL-ML, ML	A-6*, A-4, A-7-6	0	0	80-100	80-100	80-100	70-100	23-50	3-29
	18-63	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-46
	63-80	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-45

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
KxmE2:												
Haggatt---------	0-5	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	90-100	85-100	80-100	75-100	22-40	1-17
	5-16	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	80-100	75-100	70-100	60-100	24-50	4-30
	16-44	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-8	0-8	75-100	75-100	65-95	60-95	44-75	20-46
	44-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
Caneyville------	0-6	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0-2	0-3	90-100	85-100	80-100	60-100	22-40	1-17
	6-10	Silty clay loam*, silt loam.	CL*	A-6*, A-7-6	0-2	0-3	95-100	95-100	90-100	85-100	30-50	11-29
	10-36	Clay*, silty clay	CH*, CL	A-7*	0-2	0-15	90-100	85-100	85-100	80-100	44-75	20-45
	36-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
KxoC2:												
Knobcreek-------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	90-100	90-100	90-100	85-100	22-40	1-17
	7-18	Silty clay loam*, silt loam.	CL*, CL-ML, ML	A-6*, A-4, A-7-6	0	0	80-100	80-100	80-100	70-100	23-50	3-29
	18-63	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-46
	63-80	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-45
Navilleton------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	85-100	22-40	1-17
	8-35	Silty clay loam*, silt loam.	CL*, CL-ML, ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	85-100	23-50	3-29
	35-43	Clay*, silty clay	CH*, CL	A-7-6*	0-5	0-5	80-100	80-100	80-100	75-100	44-75	20-46
	43-72	Clay*, silty clay	CH*, CL	A-7-6*	0-5	0-5	80-100	80-100	80-100	75-100	44-75	20-46
	72-82	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
KxoC2:												
Haggatt---------	0-5	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	90-100	85-100	80-100	75-100	22-40	1-17
	5-16	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	80-100	75-100	70-100	60-100	24-50	4-30
	16-44	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-8	0-8	75-100	75-100	65-95	60-95	44-75	20-46
	44-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
KxpD2:												
Knobcreek-------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	90-100	90-100	90-100	85-100	22-40	1-17
	7-18	Silty clay loam*, silt loam.	CL*, CL-ML, ML	A-6*, A-4, A-7-6	0	0	80-100	80-100	80-100	70-100	23-50	3-29
	18-63	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-46
	63-80	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-15	0-15	75-100	70-100	70-100	65-100	44-75	20-45
Haggatt---------	0-5	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	90-100	85-100	80-100	75-100	22-40	1-17
	5-16	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	80-100	75-100	70-100	60-100	24-50	4-30
	16-44	Clay*, silty clay, gravelly clay, gravelly silty clay.	CH*, CL	A-7-6*	0-8	0-8	75-100	75-100	65-95	60-95	44-75	20-46
	44-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
Caneyville------	0-6	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0-2	0-3	90-100	85-100	80-100	60-100	22-40	1-17
	6-10	Silty clay loam*, silt loam.	CL*	A-6*, A-7-6	0-2	0-3	95-100	95-100	90-100	85-100	30-50	11-29
	10-36	Clay*, silty clay	CH*, CL	A-7*	0-2	0-15	90-100	85-100	85-100	80-100	44-75	20-45
	36-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
LpoAK:												
Lindside--------	0-10	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	85-95	25-38	7-18
	10-42	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-7-6, A-4	0	0	100	100	95-100	85-97	25-44	7-24
	42-80	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-7-6, A-4	0	0	100	100	95-100	85-97	25-44	7-24
McnGQ:												
Markland--------	0-4	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20
	4-28	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-62	20-36
	28-59	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-62	20-36
	59-80	Stratified silty clay loam to silty clay to silt loam*.	CL*, CH, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	90-100	15-55	4-30
McpC3:												
Markland--------	0-4	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	35-48	15-28
	4-25	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-62	20-36
	25-42	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-62	20-36
	42-80	Stratified silty clay loam to silty clay to silt loam*.	CL*, CH, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	90-100	15-55	4-30
McuDQ:												
Markland--------	0-4	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	35-48	15-28
	4-18	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-62	20-36
	18-40	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-62	20-36
	40-80	Stratified silty clay loam to silty clay to silt loam*.	CL*, CH, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	90-100	15-55	4-30

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
MhuA:												
McGary----------	0-11	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20
	11-42	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-60	20-34
	42-50	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-60	20-34
	50-60	Stratified silty clay loam to silty clay to silt loam*.	CL*, CH	A-7-6*, A-6	0	0	100	100	95-100	90-100	38-60	15-34
MhyB2:												
Gatton----------	0-9	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	95-100	85-100	22-40	3-15
	9-24	Silt loam*, silty clay loam.	CL*	A-7-6*, A-6	0	0	100	100	95-100	85-100	32-50	12-30
	24-66	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	95-100	90-100	85-100	65-95	18-40	4-20
	66-80	Clay loam*, loam, silty clay loam.	CL*	A-6*, A-7	0	0	90-100	85-100	75-100	50-85	30-50	11-24
NaaA:												
Nabb------------	0-10	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	80-95	22-40	2-15
	10-18	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	80-95	22-40	2-15
	18-35	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	90-100	80-90	25-45	5-25
	35-76	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-7-6, A-4	0	0	98-100	95-100	90-95	70-85	25-45	5-20
	76-80	Clay loam*, loam	CL*	A-6*, A-4, A-7-6	0-2	0-2	90-100	85-95	70-90	55-70	25-50	8-30
NaaB2:												
Nabb------------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	80-95	22-40	2-15
	7-13	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	80-95	22-40	2-15
	13-33	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	90-100	80-90	25-45	5-25
	33-71	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-7-6, A-4	0	0	98-100	95-100	90-95	70-85	25-45	5-20
	71-80	Clay loam*, loam	CL*	A-6*, A-4, A-7-6	0-2	0-2	90-100	85-95	70-90	55-70	25-50	8-30

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
NbhAK:												
Newark----------	0-7	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	90-100	80-100	20-40	4-16
	7-66	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	90-100	80-100	22-50	4-25
	66-80	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	90-100	75-100	22-50	4-25
PcrA:												
Pekin-----------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	75-100	15-30	3-12
	8-29	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	100	100	90-100	75-100	24-38	5-18
	29-58	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	95-100	90-100	80-100	65-95	25-40	6-20
	58-80	Silt loam*, silty clay loam, loam, sandy loam.	CL*, ML, SC, SM	A-4*, A-2-4, A-2-6, A-6	0	0	90-100	85-100	50-100	25-95	15-38	3-18
PcrB2:												
Pekin-----------	0-10	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	75-100	15-30	3-12
	10-24	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	100	100	90-100	75-100	24-38	5-18
	24-45	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	95-100	90-100	80-100	65-95	25-40	6-20
	45-80	Silt loam*, silty clay loam, loam, sandy loam.	CL*, ML, SC, SM	A-4*, A-2-4, A-2-6, A-6	0	0	90-100	85-100	50-100	25-95	15-38	3-18
PhaA:												
Peoga-----------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	70-98	22-38	3-18
	8-19	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	90-100	70-98	22-38	3-18
	19-36	Silt loam*, silty clay loam.	CL*	A-6*, A-4, A-7-6	0	0	100	100	90-100	75-98	24-42	7-22
	36-76	Silt loam*, silty clay loam, loam.	CL*	A-6*, A-4, A-7-6	0	0	98-100	95-100	80-100	55-95	24-42	7-22
	76-80	Silty clay loam*, silt loam, loam, clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	98-100	95-100	80-100	55-95	22-42	5-22
Pml.												
Pits, quarry												

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Ppu. Pits, sand and gravel												
RctD3: Rarden----------	0-4	Silty clay loam*	CL*	A-6*, A-7	0	0	100	95-100	95-100	85-100	30-50	12-30
	4-24	Silty clay*, clay, silty clay loam.	CH*, ML	A-7*	0-2	0-5	95-100	90-100	85-100	85-100	41-70	13-45
	24-32	Extremely parachannery silty clay*, parachannery silty clay, extremely parachannery silty clay loam, parachannery silty clay loam.	CH*, CL, ML	A-7*	0-2	0-5	95-100	90-100	85-100	85-95	41-65	13-36
	32-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
Coolville-------	0-4	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	90-100	85-100	24-40	3-15
	4-17	Silty clay loam*	CL*	A-7*, A-6	0	0	95-100	95-100	90-100	85-100	35-50	15-25
	17-38	Silty clay*, silty clay loam.	CH*, CL, ML	A-7*	0	0-5	95-100	85-100	80-100	75-100	41-65	13-36
	38-43	Parachannery silty clay loam*, parachannery silty clay, very parachannery silty clay, extremely parachannery silty clay loam.	CL*, CH, ML	A-7*	0	0-5	95-100	85-100	80-100	75-100	41-65	13-36
	43-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
ScbA:												
Sciotoville-----	0-9	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	95-100	95-100	85-100	65-95	22-40	3-15
	9-27	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	95-100	90-100	80-100	70-90	20-44	4-24
	27-50	Clay loam*, loam, silt loam, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	95-100	90-100	75-100	55-90	25-44	4-24
	50-80	Loam*, silty clay loam, silt loam, sandy loam.	CL*, ML, SC, SM	A-6*, A-4, A-7-6, A-2-4	0	0-3	80-100	75-100	50-100	30-85	5-44	NP-24
ScbB2:												
Sciotoville-----	0-9	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	95-100	95-100	85-100	65-95	22-40	3-15
	9-27	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	95-100	90-100	80-100	70-90	20-44	4-24
	27-50	Clay loam*, loam, silt loam, silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	95-100	90-100	75-100	55-90	25-44	4-24
	50-80	Loam*, silty clay loam, silt loam, sandy loam.	CL*, ML, SC, SM	A-6*, A-4, A-7-6, A-2-4	0	0-3	80-100	75-100	50-100	30-85	5-44	NP-24
SceB2:												
Scottsburg------	0-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	98-100	98-100	90-95	85-95	22-40	2-15
	8-31	Silty clay loam*, silt loam.	CL*	A-6*, A-7-6	0	0	98-100	98-100	90-95	80-95	30-50	10-28
	31-53	Silty clay loam*, silt loam.	CL*	A-6*, A-7-6	0	0	95-100	90-95	85-90	75-85	30-50	12-28
	53-61	Parachannery silty clay*, parachannery silty clay loam.	CL*, CH, MH, ML	A-7*	0	0	98-100	95-100	95-100	85-95	40-52	16-22
	61-67	Weathered bedrock*.	---	---	---	---	---	---	---	---	---	---
	67-80	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
SfyB:												
Shircliff-------	0-8	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	85-100	25-40	5-20
	8-19	Silty clay loam*, silt loam.	CL*	A-6*, A-4, A-7-6	0	0	100	100	95-100	90-100	26-50	8-30
	19-43	Silty clay*, silty clay loam.	CH*, CL	A-7-6*	0	0	100	100	95-100	90-100	45-65	20-40
	43-80	Silty clay*, silty clay loam, silt loam.	CL*, CH, CL-ML	A-7-6*, A-4, A-6	0	0	100	100	95-100	90-100	16-55	5-30
SoaB:												
Spickert--------	0-7	Silt loam*	CL-ML*, ML, CL	A-4*, A-6	0	0	100	100	95-100	90-100	23-40	3-15
	7-31	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	90-100	25-50	5-30
	31-58	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6	0	0-2	90-100	80-98	75-98	65-95	20-36	5-15
	58-64	Channery silt loam*, very channery silt loam, silty clay loam, silt loam.	CL*, CL-ML, GC, GC-GM	A-6*, A-2-4, A-2-6, A-4	0-5	5-40	40-90	35-85	35-85	25-80	20-40	5-20
	64-80	Bedrock*	---	---	---	---	---	---	---	---	---	---
SodB:												
Spickert--------	0-10	Silt loam*	CL-ML*, ML, CL	A-4*, A-6	0	0	100	100	95-100	90-100	23-40	3-15
	10-34	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	90-100	25-50	5-30
	34-65	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6	0	0-2	90-100	80-98	75-98	65-95	20-36	5-15
	65-72	Channery silt loam*, very channery silt loam, silty clay loam, silt loam.	CL*, CL-ML, GC, GC-GM	A-6*, A-2-4, A-2-6, A-4	0-5	5-40	40-90	35-85	35-85	25-80	20-40	5-20
	72-82	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
SolC2:												
Spickert--------	0-7	Silt loam*	CL-ML*, ML, CL	A-4*, A-6	0	0	100	100	95-100	90-100	23-40	3-15
	7-31	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	90-100	25-50	5-30
	31-58	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6	0	0-2	90-100	80-98	75-98	65-95	20-36	5-15
	58-64	Channery silt loam*, very channery silt loam, silty clay loam, silt loam.	CL*, CL-ML, GC, GC-GM	A-6*, A-2-4, A-2-6, A-4	0-5	5-40	40-90	35-85	35-85	25-80	20-40	5-20
	64-80	Bedrock*	---	---	---	---	---	---	---	---	---	---
Wrays-----------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	90-100	22-35	2-12
	7-30	Silty clay loam*, silt loam.	CL*	A-6*, A-7-6	0	0	100	100	95-100	90-100	30-50	12-30
	30-39	Silty clay loam*, channery silty clay loam, silt loam, channery silt loam.	CL*, GC	A-6*, A-4, A-7-6	0	0-10	65-100	60-95	55-95	45-90	30-44	8-20
	39-49	Extremely channery silt loam*, extremely channery silty clay loam, channery silt loam, channery silty clay loam.	GC*, CL, GM, ML	A-2-4*, A-2-6, A-4, A-6	0-10	10-40	35-85	30-80	25-80	15-75	18-38	3-14
	49-60	Bedrock*	---	---	---	---	---	---	---	---	---	---
StaAQ:												
Steff-----------	0-11	Silt loam*	ML*, CL, CL-ML	A-4*, A-6	0	0	100	95-100	85-100	75-100	20-39	2-15
	11-41	Silt loam*, silty clay loam.	CL*, CL-ML, ML	A-6*, A-4	0	0	95-100	95-100	85-100	75-100	25-50	3-25
	41-60	Silt loam*, stratified silt loam to loam to sandy loam.	CL*, ML, SC-SM, SM	A-4*, A-6, A-2-4	0	0	85-100	75-100	60-100	25-95	15-38	2-15

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
StdAQ:												
Stendal---------	0-8	Silt loam*	CL-ML*, ML, CL	A-4*, A-6	0	0	100	100	90-100	75-100	22-38	3-15
	8-40	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-7-6, A-4	0	0	100	100	90-100	80-100	25-50	5-24
	40-60	Silt loam*, stratified silt loam to silty clay loam to loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	95-100	90-100	75-100	55-95	25-50	5-24
Uaa. Udorthents, cut and filled												
UaoAK: Udifluvents, cut and filled.												
Urban land.												
UedA: Urban land.												
Aquents, clayey substratum.												
UndAY: Urban land.												
Udifluvents.												
UneC: Urban land.												
Udarents, clayey substratum.												
UngB: Urban land.												
Udarents, fragipan substratum.												

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
UnkB:												
Urban land.												
Udarents, silty substratum.												
UnlC:												
Urban land.												
Udarents, hard bedrock substratum.												
UnpA:												
Urban land.												
Udarents, loamy substratum.												
UnrD:												
Urban land.												
Udarents, soft bedrock substratum.												
W.												
Water												
WaaAV:												
Wakeland--------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	80-100	16-28	3-9
	7-29	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	80-100	16-28	3-9
	29-60	Silt loam*, stratified silt loam to loam.	CL-ML*, CL, ML	A-4*	0	0	100	100	85-100	60-100	16-28	3-9
WaaAW:												
Wakeland--------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	80-100	16-28	3-9
	7-29	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	90-100	80-100	16-28	3-9
	29-60	Silt loam*, stratified silt loam to loam.	CL-ML*, CL, ML	A-4*	0	0	100	100	85-100	60-100	16-28	3-9

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
WhdD2:												
Wellrock--------	0-4	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	90-100	25-35	3-12
	4-8	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	95-100	25-35	3-12
	8-28	Silty clay loam*, silt loam.	CL*	A-6*, A-7-6	0	0	100	100	95-100	95-100	30-50	10-30
	28-36	Silty clay loam*, parachannery silty clay loam, parachannery silt loam, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0-5	90-100	85-100	80-100	75-100	20-42	5-18
	36-52	Extremely parachannery silt loam*, very parachannery silt loam, extremely parachannery silty clay loam, very parachannery silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0-5	85-100	80-100	80-100	75-100	20-42	5-18
	52-80	Bedrock*	---	---	---	---	---	---	---	---	---	---
Gnawbone--------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	95-100	90-100	90-100	80-95	16-25	2-8
	7-35	Parachannery silty clay loam*, parachannery silt loam, silty clay loam, silt loam.	CL*	A-6*, A-4, A-7	0	0-3	85-100	80-100	80-100	70-95	30-44	8-20
	35-39	Extremely parachannery silt loam*, very parachannery silt loam, very parachannery silty clay loam, extremely parachannery silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7	0	0-5	85-100	80-100	80-100	70-95	20-42	7-18
	39-60	Bedrock*	---	---	---	---	---	---	---	---	---	---

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
WhdD2:												
Spickert, soft bedrock substratum-----	0-7	Silt loam*	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	95-100	90-100	23-40	3-15
	7-31	Silty clay loam*, silt loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0	100	100	95-100	90-100	25-50	5-30
	31-58	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*, A-6	0	0	90-100	85-100	85-100	70-95	20-36	5-15
	58-72	Very parachannery silt loam*, extremely parachannery silt loam, extremely parachannery silty clay loam, very parachannery silty clay loam.	CL*, CL-ML	A-6*, A-4, A-7-6	0	0-5	85-100	80-100	80-100	75-100	20-42	5-18
	72-80	Bedrock*	---	---	---	---	---	---	---	---	---	---
WokAV:												
Wilbur----------	0-7	Silt loam*	CL*, CL-ML, ML	A-4*	0	0	100	100	95-100	70-100	20-30	3-10
	7-32	Silt loam*	CL*, CL-ML, ML	A-4*	0	0	100	100	95-100	80-100	20-30	3-10
	32-60	Silt loam*, stratified silt loam to loam.	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	80-100	60-100	20-35	3-15
WokAW:												
Wilbur----------	0-7	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	95-100	70-100	20-30	3-10
	7-32	Silt loam*	CL-ML*, CL, ML	A-4*	0	0	100	100	95-100	80-100	20-30	3-10
	32-60	Silt loam*, stratified silt loam to loam.	CL-ML*, CL, ML	A-4*, A-6	0	0	100	100	80-100	60-100	20-35	3-15

Table 16.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
WomAK:												
Wilhite---------	0-9	Silty clay loam*	CL*	A-6*, A-7-6	0	0	100	100	95-100	90-100	30-50	10-22
	9-38	Silty clay*, silty clay loam.	CL*, CH, ML	A-7-6*, A-6	0	0	100	100	95-100	90-100	35-60	10-32
	38-60	Silty clay*, silty clay loam, stratified silty clay to silty clay loam.	CL*, CH, ML	A-7-6*, A-6	0	0	100	100	90-100	85-95	35-60	10-32

Table 17.--Physical Properties of the Soils

(Absence of an entry indicates that data were not estimated. The properties are displayed as low, representative, and high values separated by hyphens)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
BbhA:									
Bartle------------------	0-8	5-12-20	62-74-85	10-14-18	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-1.6-2.0
	8-17	5-12-15	65-72-83	12-16-20	1.40-1.50-1.60	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.0-0.2-0.5
	17-30	5-10-15	53-63-77	18-27-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	0.00-1.50-2.90	0.0-0.2-0.5
	30-50	5-10-15	53-65-77	18-25-32	1.60-1.70-1.80	0.01-0.18-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	50-80	5-22-40	40-53-65	18-25-32	1.50-1.60-1.70	0.06-0.33-0.60	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
BcrAQ:									
Beanblossom-------------	0-5	10-18-35	45-65-70	12-17-22	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	5-24	10-19-50	40-65-75	10-16-22	1.40-1.45-1.50	2.00-4.00-6.00	0.09-0.18-0.21	0.00-1.50-2.90	1.0-1.5-2.0
	24-54	15-40-50	30-43-65	10-17-24	1.40-1.45-1.50	2.00-11.00-20.00	0.04-0.09-0.14	0.00-1.50-2.90	0.5-0.8-1.0
	54-60	---	---	---	---	0.00-0.01-0.06	---	---	---
BcrAW:									
Beanblossom-------------	0-5	10-18-35	45-65-70	12-17-22	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	5-24	10-19-50	40-65-75	10-16-22	1.40-1.45-1.50	2.00-4.00-6.00	0.09-0.18-0.21	0.00-1.50-2.90	1.0-1.5-2.0
	24-54	15-40-50	30-43-65	10-17-24	1.40-1.45-1.50	2.00-11.00-20.00	0.04-0.09-0.14	0.00-1.50-2.90	0.5-0.8-1.0
	54-60	---	---	---	---	0.00-0.01-0.06	---	---	---
BgeAZ:									
Birds-------------------	0-8	5-10-15	60-70-80	15-20-26	1.30-1.40-1.50	0.60-1.30-2.00	0.21-0.23-0.25	0.00-1.50-2.90	1.0-1.5-3.0
	8-43	5- 8-15	60-70-77	18-22-26	1.40-1.50-1.60	0.20-0.40-0.60	0.20-0.22-0.24	0.00-1.50-2.90	0.0-0.7-1.0
	43-60	5-10-40	35-68-80	15-22-26	1.35-1.48-1.60	0.20-0.40-0.60	0.17-0.21-0.24	0.00-1.50-2.90	0.0-0.2-0.5
BlvAW:									
Kintner-----------------	0-5	15-40-45	40-47-72	10-13-20	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.20-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	5-23	15-30-45	40-55-72	12-15-20	1.40-1.45-1.50	2.00-4.00-6.00	0.09-0.18-0.21	0.00-1.50-2.90	1.0-1.2-2.0
	23-48	40-65-75	15-25-40	5-10-15	1.40-1.45-1.50	2.00-11.00-20.00	0.04-0.09-0.14	0.00-1.50-2.90	0.5-0.8-1.0
	48-60	---	---	---	---	0.06-1.30-6.00	---	---	---
BlvAW:									
BuoA:									
Bromer------------------	0-8	4- 8-15	67-77-80	12-15-18	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-1.8-3.0
	8-16	4- 5-10	68-76-80	14-19-22	1.40-1.50-1.60	0.60-1.30-2.00	0.20-0.21-0.27	0.00-1.50-2.90	0.3-0.7-1.5
	16-34	4- 5-15	55-67-70	22-28-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	0.00-4.00-5.90	0.2-0.3-0.5
	34-80	4- 5-10	30-49-55	40-46-60	1.40-1.45-1.60	0.06-0.13-0.20	0.08-0.14-0.16	6.00-7.50-8.90	0.0-0.2-0.5
CcaG:									
Caneyville--------------	0-8	5-12-18	57-70-80	12-18-25	1.20-1.38-1.55	0.60-1.30-2.00	0.17-0.21-0.24	0.00-1.50-2.90	2.0-3.0-4.0
	8-14	5-10-15	50-59-70	24-31-38	1.40-1.50-1.70	0.60-1.30-2.00	0.13-0.17-0.21	3.00-4.50-5.90	0.0-1.0-1.5
	14-33	5- 8-15	25-39-55	40-53-60	1.35-1.50-1.65	0.20-0.40-0.60	0.06-0.11-0.16	6.00-7.50-8.90	0.0-0.8-1.0
	33-60	---	---	---	---	0.06-1.30-6.00	---	---	---
Rock outcrop.									

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
CkkB2:									
Cincinnati--------------	0-8	5-11-26	60-70-80	14-19-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-31	5- 8-28	50-66-70	22-26-30	1.45-1.55-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	31-72	14-26-40	40-51-60	20-23-26	1.60-1.73-1.85	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	72-80	12-26-40	30-42-49	25-32-39	1.55-1.65-1.75	0.06-0.13-0.20	0.06-0.07-0.08	3.00-4.50-5.90	0.0-0.2-0.5
CldC2:									
Cincinnati--------------	0-8	5-11-26	60-70-80	14-19-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-1.9-3.0
	8-24	5- 8-28	50-66-70	22-26-30	1.45-1.55-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	24-74	14-26-40	40-51-60	20-23-26	1.60-1.73-1.85	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	74-80	12-26-40	30-42-49	25-32-39	1.55-1.65-1.75	0.06-0.13-0.20	0.06-0.07-0.08	3.00-4.50-5.90	0.0-0.2-0.5
Blocher-----------------	0-7	5-15-25	51-67-80	12-18-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-1.9-3.0
	7-17	5-10-25	45-62-75	20-28-30	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	0.00-1.50-2.90	0.5-0.8-1.0
	17-44	25-28-35	20-32-40	35-40-45	1.50-1.60-1.70	0.06-0.13-0.20	0.11-0.14-0.16	3.00-4.50-5.90	0.0-0.2-0.5
	44-76	25-34-38	22-31-45	30-35-40	1.50-1.60-1.70	0.06-0.13-0.20	0.11-0.14-0.16	3.00-4.50-5.90	0.0-0.2-0.5
	76-80	25-40-45	30-34-48	16-26-28	1.50-1.60-1.70	0.06-0.33-0.60	0.08-0.11-0.13	0.00-1.50-2.90	0.0-0.2-0.5
ConC3:									
Coolville---------------	0-4	1- 3-10	65-74-82	17-23-26	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.20-0.24	0.00-1.50-2.90	0.5-1.2-2.0
	4-17	1- 3-5	56-66-72	27-31-39	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	17-38	1- 4-12	40-54-64	35-42-58	1.40-1.53-1.65	0.06-0.13-0.20	0.10-0.13-0.15	3.00-4.50-5.90	0.0-0.2-0.5
	38-43	1- 5-10	40-62-69	30-33-58	1.40-1.53-1.65	0.01-0.10-0.20	0.08-0.10-0.12	3.00-4.50-5.90	0.0-0.2-0.5
	43-60	---	---	---	---	0.00-0.01-0.06	---	---	---
Rarden------------------	0-6	1- 5-10	52-63-72	27-32-38	1.35-1.45-1.55	0.20-0.40-0.60	0.20-0.22-0.23	3.00-4.50-5.90	0.5-1.2-2.0
	6-28	1- 4-10	30-50-62	35-46-60	1.40-1.50-1.60	0.06-0.13-0.20	0.10-0.12-0.14	3.00-4.50-5.90	0.0-0.5-1.0
	28-37	1- 4-10	40-54-65	30-42-58	1.40-1.53-1.65	0.01-0.10-0.20	0.06-0.09-0.12	3.00-4.50-5.90	0.0-0.2-0.5
	37-60	---	---	---	---	0.00-0.01-0.06	---	---	---
CtwB:									
Crider------------------	0-8	2- 5-12	64-76-80	15-19-24	1.20-1.43-1.65	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-34	2- 5-12	56-67-74	24-28-32	1.40-1.50-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	34-46	4-10-12	52-60-70	24-30-36	1.40-1.50-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.40-5.90	0.0-0.2-0.5
	46-80	2- 7-12	28-39-60	35-54-60	1.35-1.50-1.65	0.60-1.30-2.00	0.07-0.12-0.19	3.00-4.40-5.90	0.0-0.2-0.5
Bedford-----------------	0-9	2- 6-12	64-75-80	14-19-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	9-24	2- 4-6	62-68-76	22-28-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	24-51	4- 4-12	56-69-73	22-27-32	1.55-1.68-1.80	0.01-0.06-0.20	0.06-0.07-0.08	3.00-4.50-5.90	0.0-0.2-0.5
	51-80	3- 8-10	20-32-52	45-60-75	1.40-1.50-1.60	0.20-0.60-2.00	0.06-0.07-0.08	6.00-7.50-8.90	0.0-0.2-0.5
Navilleton--------------	0-8	2- 4-12	64-77-80	15-19-24	1.20-1.43-1.65	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-35	2- 3-10	58-69-74	24-28-32	1.40-1.50-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	35-65	3- 6-18	20-34-52	45-60-75	1.30-1.45-1.60	0.06-0.13-0.20	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	65-79	3- 4-18	20-36-52	45-60-75	1.30-1.45-1.60	0.06-0.13-0.20	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	79-83	---	---	---	---	0.00-0.40-6.00	---	---	---

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
CwaAQ:									
Cuba--------------------	0-10	7- 9-12	64-73-81	12-18-24	1.30-1.43-1.55	0.60-1.30-2.00	0.22-0.23-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	10-47	7- 9-12	62-69-75	18-22-26	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.21-0.22	0.00-1.50-2.90	0.5-0.8-1.0
	47-60	10-31-67	25-52-75	8-17-26	1.35-1.48-1.60	0.60-3.30-6.00	0.10-0.16-0.22	0.00-1.50-2.90	0.0-0.2-0.5
EepB:									
Elkinsville-------------	0-10	8-14-20	62-73-80	8-13-18	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	10-26	8-12-20	50-62-74	18-26-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	26-48	25-40-55	20-36-50	20-24-30	1.40-1.50-1.60	0.60-1.30-2.00	0.15-0.17-0.19	3.00-4.50-5.90	0.0-0.2-0.5
	48-64	35-40-64	20-36-47	16-24-31	1.40-1.50-1.60	0.60-1.30-2.00	0.12-0.16-0.19	3.00-4.50-5.90	0.0-0.2-0.5
	64-80	35-50-66	20-30-40	14-20-26	1.40-1.50-1.60	0.60-1.30-2.00	0.12-0.16-0.19	0.00-1.50-2.90	0.0-0.2-0.5
EepGQ:									
Elkinsville-------------	0-6	8-14-20	62-73-80	8-13-18	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.5-4.0
	6-36	8-12-20	50-63-74	18-25-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	36-75	25-40-55	20-38-47	16-22-28	1.40-1.50-1.60	0.60-1.30-2.00	0.12-0.16-0.19	3.00-4.50-5.90	0.0-0.2-0.5
	75-80	35-50-66	20-30-40	14-20-26	1.40-1.50-1.60	0.60-1.30-2.00	0.12-0.16-0.19	0.00-1.50-2.90	0.0-0.2-0.5
GgbG:									
Gilwood-----------------	0-6	6- 8-15	65-77-84	10-15-20	1.30-1.35-1.40	0.60-1.30-2.00	0.16-0.20-0.24	0.00-1.50-2.90	2.0-3.0-4.0
	6-11	6- 8-15	63-73-80	14-19-22	1.30-1.35-1.40	0.60-1.30-2.00	0.15-0.19-0.23	0.00-1.50-2.90	0.5-0.8-1.0
	11-22	6-11-15	59-66-76	18-23-26	1.30-1.40-1.50	0.60-1.30-2.00	0.12-0.16-0.20	0.00-1.50-2.90	0.0-0.2-0.5
	22-32	6-17-20	56-65-82	12-18-24	1.30-1.40-1.50	0.60-1.30-2.00	0.06-0.11-0.16	0.00-1.50-2.90	0.0-0.2-0.5
	32-60	---	---	---	---	0.00-0.18-0.60	---	---	---
Brownstown--------------	0-6	5- 7-30	55-81-89	6-12-18	1.30-1.35-1.40	0.06-1.03-2.00	0.15-0.20-0.24	0.00-1.50-2.90	1.0-2.5-4.0
	6-18	10-23-30	55-64-82	8-13-18	1.30-1.40-1.50	2.00-4.00-6.00	0.05-0.12-0.19	0.00-1.50-2.90	0.5-0.8-1.0
	18-36	10-22-30	55-65-82	8-13-18	1.30-1.40-1.50	2.00-4.00-6.00	0.03-0.07-0.10	0.00-1.50-2.90	0.0-0.2-0.5
	36-60	---	---	---	---	0.00-0.18-0.60	---	---	---
GgfE2:									
Gilwood-----------------	0-6	6- 8-15	65-76-82	12-16-20	1.30-1.35-1.40	0.60-1.30-2.00	0.16-0.20-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	6-11	6- 8-15	63-73-80	14-19-22	1.30-1.35-1.40	0.60-1.30-2.00	0.15-0.19-0.23	0.00-1.50-2.90	0.5-0.8-1.0
	11-22	6-11-15	59-66-76	18-23-26	1.30-1.40-1.50	0.60-1.30-2.00	0.12-0.16-0.20	0.00-1.50-2.90	0.0-0.2-0.5
	22-32	6-17-20	56-65-82	12-18-24	1.30-1.40-1.50	0.60-1.30-2.00	0.06-0.11-0.16	0.00-1.50-2.90	0.0-0.2-0.5
	32-60	---	---	---	---	0.00-0.18-0.60	---	---	---
Wrays-------------------	0-6	2- 4-12	66-81-83	10-15-22	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	6-25	2- 3-12	55-67-75	22-30-34	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.19-0.24	3.00-4.50-5.90	0.5-0.8-1.0
	25-34	6-12-15	51-57-70	24-31-34	1.40-1.50-1.60	0.60-1.30-2.00	0.13-0.17-0.20	3.00-4.50-5.90	0.0-0.5-1.0
	34-44	8-12-20	60-71-80	12-17-30	1.40-1.50-1.60	0.20-0.40-0.60	0.06-0.12-0.17	0.00-1.50-2.90	0.0-0.2-0.5
	44-60	---	---	---	---	0.00-0.18-0.60	---	---	---

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permeability (Ksat)	Available water capacity	Linear extensibility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
GmaG:									
Gnawbone----------------	0-7	5-10-15	65-75-85	10-15-20	1.30-1.35-1.40	0.60-1.30-2.00	0.16-0.20-0.24	0.00-1.50-2.90	2.0-3.0-4.0
	7-27	5- 8-15	51-63-71	24-29-34	1.40-1.50-1.60	0.60-1.30-2.00	0.11-0.16-0.20	0.00-1.50-2.90	0.0-0.5-1.0
	27-39	5- 7-15	53-70-75	15-23-32	1.40-1.50-1.60	0.60-1.30-2.00	0.07-0.12-0.16	0.00-1.50-2.90	0.0-0.2-0.5
	39-60	---	---	---	---	0.00-0.01-0.06	---	---	---
Kurtz-------------------	0-6	2- 4-8	70-78-86	12-18-22	1.35-1.43-1.50	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	2.0-3.0-4.0
	6-36	2- 3-8	57-67-73	25-30-35	1.35-1.45-1.55	0.60-1.30-2.00	0.10-0.16-0.22	3.00-4.50-5.90	0.0-0.5-1.0
	36-47	2- 3-8	60-69-73	25-28-32	1.50-1.58-1.65	0.60-1.30-2.00	0.05-0.10-0.14	3.00-4.50-5.90	0.0-0.2-0.5
	47-60	---	---	---	---	0.00-0.01-0.06	---	---	---
HcbAQ:									
Hatfield----------------	0-10	5-11-18	50-60-68	27-29-32	1.40-1.47-1.55	0.60-1.30-2.00	0.17-0.20-0.23	0.00-1.50-2.90	1.0-2.0-3.0
	10-32	5- 9-15	51-58-68	27-33-34	1.50-1.60-1.70	0.20-0.40-0.60	0.14-0.18-0.21	3.00-4.50-5.90	0.5-0.8-1.0
	32-64	5- 9-15	53-61-71	24-30-32	1.55-1.65-1.75	0.01-0.18-0.20	0.06-0.09-0.12	0.00-1.50-2.90	0.0-0.2-0.5
	64-80	3- 8-15	53-66-77	20-26-32	1.50-1.60-1.70	0.01-0.03-0.06	0.06-0.09-0.12	0.00-1.50-2.90	0.0-0.2-0.5
HcgAH:									
Haymond-----------------	0-10	1-10-20	60-75-85	10-15-20	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	10-44	7-19-32	50-67-75	10-14-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.5-1.2-2.0
	44-60	1-28-65	20-57-75	5-15-26	1.30-1.40-1.50	0.60-1.30-2.00	0.14-0.18-0.22	0.00-1.50-2.90	0.0-0.5-1.0
HcgAV:									
Haymond-----------------	0-10	1-10-20	60-75-85	10-15-20	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	10-44	7-19-32	50-67-75	10-14-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.5-1.2-2.0
	44-60	1-28-65	20-57-75	5-15-26	1.30-1.40-1.50	0.60-1.30-2.00	0.14-0.18-0.22	0.00-1.50-2.90	0.0-0.5-1.0
HcgAW:									
Haymond-----------------	0-9	1-10-20	60-75-85	10-15-20	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	9-44	7-19-32	50-67-75	10-14-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.5-1.2-2.0
	44-60	1-28-65	20-57-75	5-15-26	1.30-1.40-1.50	0.60-1.30-2.00	0.14-0.18-0.22	0.00-1.50-2.90	0.0-0.5-1.0
HufAK:									
Huntington--------------	0-12	5-10-20	60-67-75	18-23-26	1.30-1.45-1.60	0.60-1.30-2.00	0.24-0.25-0.26	0.00-1.50-2.90	2.0-3.5-4.0
	12-42	5-10-15	60-65-70	24-25-34	1.40-1.50-1.60	0.60-1.30-2.00	0.20-0.21-0.22	0.00-1.50-2.90	0.5-1.2-2.0
	42-80	5-19-60	25-53-70	15-28-32	1.40-1.50-1.60	0.60-1.30-2.00	0.10-0.16-0.22	0.00-1.50-2.90	0.0-0.2-0.5
KxkC2:									
Knobcreek---------------	0-7	2- 5-12	62-75-82	15-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.21-0.24	0.00-1.50-2.90	1.0-1.7-3.0
	7-18	2- 4-10	52-62-74	24-34-38	1.40-1.50-1.65	0.60-1.30-2.00	0.12-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	18-63	2- 3-20	20-32-53	45-65-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	63-80	2-10-20	20-34-53	45-56-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
KxkC2:									
Navilleton--------------	0-8	2- 4-12	62-75-80	15-21-26	1.20-1.43-1.65	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-35	2- 3-10	58-69-74	24-28-32	1.40-1.50-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	35-43	3- 6-18	20-34-52	45-60-75	1.30-1.45-1.60	0.06-0.13-0.20	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	43-72	3- 4-18	20-36-52	45-60-75	1.30-1.45-1.60	0.06-0.13-0.20	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	72-82	---	---	---	---	0.06-1.30-6.00	---	---	---
KxlC3:									
Knobcreek---------------	0-6	2- 5-12	56-69-78	20-26-34	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.20-0.24	0.00-2.90-5.90	0.5-1.2-2.0
	6-13	2- 4-10	52-62-74	24-34-38	1.40-1.50-1.65	0.60-1.30-2.00	0.12-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	13-60	2- 3-20	20-32-53	45-65-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	60-80	2-10-20	20-34-53	45-56-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
Haggatt-----------------	0-5	2- 7-12	54-67-78	20-26-34	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.20-0.24	0.00-2.90-5.90	0.5-1.2-2.0
	5-11	2- 5-10	56-66-74	24-29-34	1.40-1.55-1.70	0.60-1.30-2.00	0.12-0.17-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	11-42	2- 6-10	20-34-53	45-60-75	1.35-1.50-1.65	0.20-0.40-0.60	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.5-1.0
	42-60	---	---	---	---	0.06-1.30-6.00	---	---	---
Caneyville--------------	0-5	5-12-18	51-60-75	20-28-34	1.20-1.43-1.65	0.60-1.30-2.00	0.14-0.18-0.24	1.50-4.50-5.90	0.5-1.2-2.0
	5-24	5- 8-15	25-39-55	40-53-60	1.35-1.50-1.65	0.20-0.40-0.60	0.06-0.11-0.16	6.00-7.50-8.90	0.0-0.8-1.0
	24-60	---	---	---	---	0.06-1.30-6.00	---	---	---
KxlE3:									
Knobcreek---------------	0-6	2- 5-12	56-69-78	20-26-34	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.20-0.24	0.00-2.90-5.90	0.5-1.2-2.0
	6-13	2- 4-10	52-62-74	24-34-38	1.40-1.50-1.65	0.60-1.30-2.00	0.12-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	13-60	2- 3-20	20-32-53	45-65-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	60-80	2-10-20	20-34-53	45-56-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
Haggatt-----------------	0-5	2- 7-12	54-67-78	20-26-34	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.20-0.24	0.00-2.90-5.90	0.5-1.2-2.0
	5-11	2- 5-10	56-66-74	24-29-34	1.40-1.55-1.70	0.60-1.30-2.00	0.12-0.17-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	11-42	2- 6-10	20-34-53	45-60-75	1.35-1.50-1.65	0.20-0.40-0.60	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.5-1.0
	42-60	---	---	---	---	0.06-1.30-6.00	---	---	---
Caneyville--------------	0-5	5-12-18	51-60-75	20-28-34	1.20-1.43-1.65	0.60-1.30-2.00	0.14-0.18-0.24	1.50-4.50-5.90	0.5-1.2-2.0
	5-24	5- 8-15	25-39-55	40-53-60	1.35-1.50-1.65	0.20-0.40-0.60	0.06-0.11-0.16	6.00-7.50-8.90	0.0-0.8-1.0
	24-60	---	---	---	---	0.06-1.30-6.00	---	---	---
KxmE2:									
Knobcreek---------------	0-7	2- 5-12	62-75-82	15-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.21-0.24	0.00-1.50-2.90	1.0-1.7-3.0
	7-18	2- 4-10	52-62-74	24-34-38	1.40-1.50-1.65	0.60-1.30-2.00	0.12-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	18-63	2- 3-20	20-32-53	45-65-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	63-80	2-10-20	20-34-53	45-56-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
KxmE2:									
Haggatt-----------------	0-5	2- 7-12	62-73-82	12-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	5-16	2- 5-10	56-66-74	24-29-34	1.40-1.55-1.70	0.60-1.30-2.00	0.12-0.17-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	16-44	2- 6-10	20-34-53	45-60-75	1.35-1.50-1.65	0.20-0.40-0.60	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.5-1.0
	44-60	---	---	---	---	0.06-1.30-6.00	---	---	---
Caneyville--------------	0-6	5-12-18	56-68-80	12-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.20-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	6-10	5-10-15	50-59-70	24-31-38	1.40-1.50-1.70	0.60-1.30-2.00	0.13-0.17-0.21	3.00-4.50-5.90	0.0-1.0-1.5
	10-36	5- 8-15	25-39-55	40-53-60	1.35-1.50-1.65	0.20-0.40-0.60	0.06-0.11-0.16	6.00-7.50-8.90	0.0-0.8-1.0
	36-60	---	---	---	---	0.06-1.30-6.00	---	---	---
KxoC2:									
Knobcreek---------------	0-7	2- 5-12	62-75-82	15-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.21-0.24	0.00-1.50-2.90	1.0-1.7-3.0
	7-18	2- 4-10	52-62-74	24-34-38	1.40-1.50-1.65	0.60-1.30-2.00	0.12-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	18-63	2- 3-20	20-32-53	45-65-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	63-80	2-10-20	20-34-53	45-56-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
Navilleton--------------	0-8	2- 4-12	62-75-80	15-21-26	1.20-1.43-1.65	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-35	2- 3-10	58-69-74	24-28-32	1.40-1.50-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	35-43	3- 6-18	20-34-52	45-60-75	1.30-1.45-1.60	0.06-0.13-0.20	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	43-72	3- 4-18	20-36-52	45-60-75	1.30-1.45-1.60	0.06-0.13-0.20	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	72-82	---	---	---	---	0.20-5.81-20.00	---	---	---
Haggatt-----------------	0-5	2- 7-12	62-73-82	12-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	5-16	2- 5-10	56-66-74	24-29-34	1.40-1.55-1.70	0.60-1.30-2.00	0.12-0.17-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	16-44	2- 6-10	20-34-53	45-60-75	1.35-1.50-1.65	0.20-0.40-0.60	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.5-1.0
	44-60	---	---	---	---	0.20-5.81-20.00	---	---	---
KxpD2:									
Knobcreek---------------	0-7	2- 5-12	62-75-82	15-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.21-0.24	0.00-1.50-2.90	1.0-1.7-3.0
	7-18	2- 4-10	52-62-74	24-34-38	1.40-1.50-1.65	0.60-1.30-2.00	0.12-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	18-63	2- 3-20	20-32-53	45-65-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
	63-80	2-10-20	20-34-53	45-56-73	1.30-1.45-1.60	0.06-0.20-0.60	0.07-0.11-0.16	6.00-7.50-8.90	0.0-0.2-0.5
Haggatt-----------------	0-5	2- 7-12	62-73-82	12-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	5-16	2- 5-10	56-66-74	24-29-34	1.40-1.55-1.70	0.60-1.30-2.00	0.12-0.17-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	16-44	2- 6-10	20-34-53	45-60-75	1.35-1.50-1.65	0.20-0.40-0.60	0.07-0.12-0.16	6.00-7.50-8.90	0.0-0.5-1.0
	44-60	---	---	---	---	0.20-5.81-20.00	---	---	---
Caneyville--------------	0-6	5-12-18	56-68-80	12-20-26	1.20-1.43-1.65	0.60-1.30-2.00	0.16-0.20-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	6-10	5-10-15	50-59-70	24-31-38	1.40-1.50-1.70	0.60-1.30-2.00	0.13-0.17-0.21	3.00-4.50-5.90	0.0-1.0-1.5
	10-36	5- 8-15	25-39-55	40-53-60	1.35-1.50-1.65	0.20-0.40-0.60	0.06-0.11-0.16	6.00-7.50-8.90	0.0-0.8-1.0
	36-60	---	---	---	---	0.20-5.81-20.00	---	---	---

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
LpoAK:									
Lindside----------------	0-10	2-10-20	54-69-82	15-21-26	1.20-1.40-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	10-42	2- 6-15	51-66-78	20-28-34	1.40-1.50-1.60	0.60-1.30-2.00	0.17-0.20-0.22	3.00-4.50-5.90	0.5-1.2-2.0
	42-80	2- 6-25	51-70-80	18-24-34	1.40-1.50-1.60	0.60-1.30-2.00	0.17-0.20-0.22	0.00-2.90-5.90	0.5-1.0-1.5
McnGQ:									
Markland----------------	0-4	2- 8-12	62-68-78	20-24-26	1.30-1.43-1.55	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	2.0-3.5-5.0
	4-28	2- 3-10	35-52-63	35-45-55	1.55-1.60-1.65	0.20-0.40-0.60	0.12-0.15-0.18	6.00-7.50-8.90	0.5-0.8-1.0
	28-59	2- 3-10	35-57-63	35-40-55	1.55-1.60-1.65	0.06-0.33-0.60	0.12-0.16-0.18	6.00-7.50-8.90	0.5-0.8-1.0
	59-80	2- 6-10	40-58-78	20-36-50	1.50-1.58-1.65	0.06-0.33-0.60	0.12-0.17-0.22	3.00-4.50-5.90	0.5-0.8-1.0
McpC3:									
Markland----------------	0-4	2- 8-12	53-60-71	27-32-35	1.40-1.50-1.60	0.60-1.30-2.00	0.16-0.19-0.21	3.00-4.50-5.90	0.5-1.2-2.0
	4-25	2- 3-10	35-52-63	35-45-55	1.55-1.60-1.65	0.20-0.40-0.60	0.12-0.15-0.18	6.00-7.50-8.90	0.5-0.8-1.0
	25-42	2- 3-10	35-57-63	35-40-55	1.55-1.60-1.65	0.06-0.33-0.60	0.12-0.16-0.18	6.00-7.50-8.90	0.5-0.8-1.0
	42-80	2- 6-10	40-58-78	20-36-50	1.50-1.58-1.65	0.06-0.33-0.60	0.12-0.17-0.22	3.00-4.50-5.90	0.5-0.8-1.0
McuDQ:									
Markland----------------	0-4	2- 8-12	53-60-71	27-32-35	1.40-1.50-1.60	0.60-1.30-2.00	0.16-0.19-0.21	3.00-4.50-5.90	0.5-1.2-2.0
	4-18	2- 3-10	35-52-63	35-45-55	1.55-1.60-1.65	0.20-0.40-0.60	0.12-0.15-0.18	6.00-7.50-8.90	0.5-0.8-1.0
	18-40	2- 3-10	35-57-63	35-40-55	1.55-1.60-1.65	0.06-0.33-0.60	0.12-0.16-0.18	6.00-7.50-8.90	0.5-0.8-1.0
	40-80	2- 6-10	40-58-78	20-36-50	1.50-1.58-1.65	0.06-0.33-0.60	0.12-0.17-0.22	3.00-4.50-5.90	0.5-0.8-1.0
MhuA:									
McGary------------------	0-11	2- 7-10	64-69-78	20-24-26	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-1.8-3.0
	11-42	2- 4-6	40-51-63	35-45-55	1.45-1.53-1.60	0.06-0.33-0.60	0.11-0.15-0.18	6.00-7.50-8.90	0.0-0.5-1.0
	42-50	1- 5-20	40-50-64	35-45-55	1.45-1.53-1.60	0.01-0.10-0.20	0.11-0.15-0.18	6.00-7.50-8.90	0.0-0.2-0.5
	50-60	1- 5-20	40-56-64	24-39-50	1.50-1.58-1.65	0.01-0.04-0.06	0.11-0.15-0.18	3.00-4.50-5.90	0.0-0.2-0.5
MhyB2:									
Gatton------------------	0-9	5- 8-15	61-73-83	12-19-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	9-24	5- 6-15	55-68-71	24-26-30	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.2-0.5
	24-66	10-15-25	45-62-65	12-23-30	1.70-1.75-1.80	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	66-80	15-35-45	25-32-55	24-33-38	1.40-1.50-1.60	0.20-1.10-2.00	0.06-0.07-0.08	3.00-4.50-5.90	0.0-0.2-0.5
NaaA:									
Nabb--------------------	0-10	10-17-28	56-72-80	8-11-16	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	10-18	10-16-22	56-69-76	13-15-20	1.40-1.50-1.60	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.0-0.5-1.0
	18-35	10-13-18	52-60-70	20-27-30	1.50-1.58-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.2-0.5
	35-76	16-22-30	50-56-66	18-22-28	1.65-1.73-1.80	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	76-80	26-28-40	22-41-48	24-31-38	1.60-1.65-1.70	0.01-0.03-0.06	0.06-0.07-0.08	3.00-4.50-5.90	0.0-0.2-0.5

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
NaaB2:									
Nabb--------------------	0-7	10-17-28	50-70-75	10-13-22	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-1.9-3.0
	7-13	10-16-22	58-69-77	13-15-20	1.40-1.50-1.60	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.0-0.5-1.0
	13-33	10-13-18	52-60-70	20-27-30	1.50-1.58-1.65	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.2-0.5
	33-71	16-22-30	50-56-66	18-22-28	1.65-1.73-1.80	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	71-80	26-28-40	22-41-48	24-31-38	1.60-1.65-1.70	0.01-0.03-0.06	0.06-0.07-0.08	3.00-4.50-5.90	0.0-0.2-0.5
NbhAK:									
Newark------------------	0-7	2-10-20	55-70-82	14-20-26	1.20-1.40-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	7-66	2- 8-15	51-66-80	18-26-34	1.20-1.40-1.60	0.60-1.30-2.00	0.16-0.19-0.22	3.00-4.50-5.90	0.5-1.2-2.0
	66-80	2- 8-20	51-66-80	12-26-40	1.30-1.45-1.60	0.60-1.30-2.00	0.14-0.17-0.20	3.00-4.50-5.90	0.0-1.0-2.0
PcrA:									
Pekin-------------------	0-8	3-12-20	60-76-87	10-12-22	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-29	3- 7-18	52-71-79	18-22-30	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.19-0.21	0.00-1.50-2.90	0.5-0.8-1.0
	29-58	3- 9-18	50-65-77	20-26-32	1.70-1.75-1.80	0.01-0.18-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	58-80	10-20-60	30-58-60	10-22-30	1.40-1.50-1.60	0.20-0.40-0.60	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
PcrB2:									
Pekin-------------------	0-10	3-12-20	60-73-87	10-15-22	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-1.9-3.0
	10-24	3- 7-18	52-71-79	18-22-30	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.19-0.21	0.00-1.50-2.90	0.5-0.8-1.0
	24-45	3- 9-18	50-65-77	20-26-32	1.70-1.75-1.80	0.01-0.18-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	45-80	10-20-60	30-58-60	10-22-30	1.40-1.50-1.60	0.20-0.40-0.60	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
PhaA:									
Peoga-------------------	0-8	2-10-20	60-73-85	12-17-22	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-19	2-10-20	60-72-83	14-18-22	1.35-1.45-1.55	0.60-1.30-2.00	0.20-0.24-0.27	0.00-1.50-2.90	0.0-0.5-1.0
	19-36	5-11-25	50-63-75	18-26-34	1.40-1.48-1.55	0.20-0.40-0.60	0.14-0.19-0.24	0.00-1.50-2.90	0.0-0.2-0.5
	36-76	5-13-35	40-61-70	18-26-34	1.40-1.58-1.75	0.01-0.18-0.20	0.06-0.11-0.15	0.00-1.50-2.90	0.0-0.2-0.5
	76-80	5-13-35	40-59-70	22-28-34	1.35-1.45-1.55	0.01-0.13-0.20	0.06-0.08-0.10	0.00-1.50-2.90	0.0-0.2-0.5
Pml.									
Pits, quarry									
Ppu.									
Pits, sand and gravel									
RctD3:									
Rarden------------------	0-4	1- 5-10	52-63-72	27-32-38	1.35-1.45-1.55	0.20-0.40-0.60	0.20-0.22-0.23	3.00-4.50-5.90	0.5-1.2-2.0
	4-24	1- 4-10	30-50-62	35-46-60	1.40-1.50-1.60	0.06-0.13-0.20	0.10-0.12-0.14	3.00-4.50-5.90	0.0-0.5-1.0
	24-32	1- 4-10	40-54-65	30-42-58	1.40-1.53-1.65	0.01-0.10-0.20	0.06-0.09-0.12	3.00-4.50-5.90	0.0-0.2-0.5
	32-60	---	---	---	---	0.00-0.01-0.06	---	---	---

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
RctD3:									
Coolville---------------	0-4	1- 3-10	64-74-82	17-23-26	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.20-0.24	0.00-1.50-2.90	0.5-1.2-2.0
	4-17	1- 3-5	56-66-72	27-31-39	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	17-38	1- 4-12	40-54-64	35-42-58	1.40-1.53-1.65	0.06-0.13-0.20	0.10-0.13-0.15	3.00-4.50-5.90	0.0-0.2-0.5
	38-43	1- 5-10	40-62-69	30-33-58	1.40-1.53-1.65	0.01-0.10-0.20	0.08-0.10-0.12	3.00-4.50-5.90	0.0-0.2-0.5
	43-60	---	---	---	---	0.00-0.01-0.06	---	---	---
ScbA:									
Sciotoville-------------	0-9	5-25-35	50-58-83	12-17-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	9-27	5-17-25	50-58-73	22-25-32	1.40-1.55-1.70	0.60-1.30-2.00	0.16-0.18-0.21	0.00-1.50-2.90	0.5-0.8-1.0
	27-50	5-22-45	30-50-75	20-28-32	1.60-1.70-1.80	0.01-0.18-0.20	0.06-0.08-0.10	0.00-1.50-2.90	0.0-0.2-0.5
	50-80	5-38-65	20-42-80	15-20-34	1.50-1.60-1.70	0.06-1.03-2.00	0.06-0.08-0.10	0.00-1.50-2.90	0.0-0.2-0.5
ScbB2:									
Sciotoville-------------	0-9	5-25-35	50-56-80	12-19-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	9-27	5-17-25	50-58-73	22-25-32	1.40-1.55-1.70	0.60-1.30-2.00	0.16-0.18-0.21	0.00-1.50-2.90	0.5-0.8-1.0
	27-50	5-22-45	30-50-75	20-28-32	1.60-1.70-1.80	0.01-0.18-0.20	0.06-0.08-0.10	0.00-1.50-2.90	0.0-0.2-0.5
	50-80	5-38-65	20-42-80	15-20-34	1.50-1.60-1.70	0.06-1.03-2.00	0.06-0.08-0.10	0.00-1.50-2.90	0.0-0.2-0.5
SceB2:									
Scottsburg--------------	0-8	8-14-20	60-69-80	12-17-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-31	8-10-15	55-63-68	24-27-30	1.50-1.55-1.60	0.60-1.30-2.00	0.14-0.19-0.24	3.00-4.50-5.90	0.0-0.2-0.5
	31-53	12-13-18	48-56-64	24-31-34	1.60-1.65-1.70	0.01-0.18-0.20	0.08-0.11-0.14	3.00-4.50-5.90	0.0-0.2-0.5
	53-61	2- 5-8	40-50-58	35-45-55	1.50-1.55-1.60	0.06-0.18-0.20	0.08-0.11-0.14	3.00-4.50-5.90	0.5-0.8-1.0
	61-67	---	---	---	---	0.00-0.01-0.06	---	---	---
	67-80	---	---	---	---	0.00-0.18-0.60	---	---	---
SfyB:									
Shircliff---------------	0-8	2-10-15	59-71-83	15-19-26	1.30-1.43-1.55	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-19	2- 6-10	54-62-74	24-32-36	1.40-1.50-1.60	0.60-1.30-2.00	0.16-0.19-0.22	3.00-4.50-5.90	0.5-0.8-1.0
	19-43	2- 4-10	40-51-63	35-45-60	1.55-1.60-1.65	0.06-0.33-0.60	0.12-0.15-0.18	6.00-7.50-8.90	0.0-0.5-1.0
	43-80	2- 4-10	40-56-74	24-40-50	1.50-1.58-1.65	0.06-0.13-0.20	0.12-0.17-0.22	3.00-4.50-5.90	0.0-0.2-0.5
SoaB:									
Spickert----------------	0-7	1- 6-10	66-77-85	10-17-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	7-31	1- 2-5	63-70-75	24-28-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	31-58	8-10-25	47-67-78	14-23-28	1.60-1.70-1.80	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	58-64	8-10-35	40-66-78	14-24-33	1.50-1.60-1.70	0.06-0.33-0.60	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	64-80	---	---	---	---	0.00-0.18-0.60	---	---	---
SodB:									
Spickert----------------	0-10	1- 6-10	66-77-85	10-17-24	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	10-34	1- 2-5	63-70-75	24-28-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	34-65	8-10-25	47-67-78	14-23-28	1.60-1.70-1.80	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	65-72	8-10-35	40-66-78	14-24-33	1.50-1.60-1.70	0.06-0.33-0.60	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	72-82	---	---	---	---	0.00-0.18-0.60	---	---	---

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
SolC2:									
Spickert----------------	0-7	1- 6-10	64-75-85	10-19-26	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-1.9-3.0
	7-31	1- 2-5	63-70-75	24-28-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	31-58	8-10-25	47-67-78	14-23-28	1.60-1.70-1.80	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	58-64	8-10-35	40-66-78	14-24-33	1.50-1.60-1.70	0.06-0.33-0.60	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	64-80	---	---	---	---	0.00-0.18-0.60	---	---	---
Wrays-------------------	0-7	2- 3-12	62-79-84	14-18-26	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-1.9-3.0
	7-30	2- 3-12	54-67-76	22-30-34	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.19-0.24	3.00-4.50-5.90	0.5-0.8-1.0
	30-39	6-12-15	51-57-70	24-31-34	1.40-1.50-1.60	0.60-1.30-2.00	0.13-0.17-0.20	3.00-4.50-5.90	0.0-0.5-1.0
	39-49	8-12-20	50-71-80	12-17-30	1.40-1.50-1.60	0.20-0.40-0.60	0.06-0.12-0.17	0.00-1.50-2.90	0.0-0.2-0.5
	49-60	---	---	---	---	0.00-0.18-0.60	---	---	---
StaAQ:									
Steff-------------------	0-11	3- 6-15	65-81-87	10-13-25	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	11-41	3- 8-20	50-74-85	12-18-30	1.30-1.43-1.55	0.60-1.30-2.00	0.18-0.21-0.23	0.00-1.50-2.90	0.0-0.5-1.0
	41-60	3-10-55	35-70-75	10-20-25	1.40-1.53-1.65	0.60-1.84-6.00	0.08-0.15-0.21	0.00-1.50-2.90	0.0-0.2-0.5
StdAQ:									
Stendal-----------------	0-8	3- 6-15	60-78-85	12-16-26	1.30-1.43-1.55	0.60-1.30-2.00	0.22-0.23-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	8-40	3- 8-20	62-69-79	18-23-34	1.35-1.45-1.55	0.60-1.30-2.00	0.20-0.21-0.22	0.00-1.50-2.90	0.0-0.5-1.0
	40-60	3-10-45	40-67-75	15-23-34	1.35-1.45-1.55	0.60-1.30-2.00	0.20-0.21-0.22	0.00-1.50-2.90	0.0-0.2-0.5
Uaa.									
Udorthents, cut and filled									
UaoAK:									
Udifluvents, cut and filled.									
Urban land.									
UedA:									
Urban land.									
Aquents, clayey substratum.									
UndAY:									
Urban land.									
Udifluvents.									

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
UneC:									
Urban land.									
Udarents, clayey substratum.									
UngB:									
Urban land.									
Udarents, fragipan substratum.									
UnkB:									
Urban land.									
Udarents, silty substratum.									
UnlC:									
Urban land.									
Udarents, hard bedrock substratum.									
UnpA:									
Urban land.									
Udarents, loamy substratum.									
UnrD:									
Urban land.									
Udarents, soft bedrock substratum.									
W.									
Water									
WaaAV:									
Wakeland----------------	0-7	3-12-20	62-75-85	10-13-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	7-29	3-13-20	62-73-85	10-14-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.0-0.5-1.0
	29-60	5-20-45	40-66-75	10-14-20	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	0.0-0.2-0.5

Table 17.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct
WaaAW:									
Wakeland----------------	0-7	3-12-20	62-75-85	10-13-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	7-29	3-13-20	62-73-85	10-14-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.0-0.5-1.0
	29-60	5-20-45	40-66-75	10-14-20	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	0.0-0.2-0.5
WhdD2:									
Wellrock----------------	0-4	2- 4-10	66-77-86	12-19-24	1.30-1.40-1.50	0.60-1.30-2.00	0.18-0.21-0.24	0.00-1.50-2.90	1.0-1.8-3.0
	4-8	2- 2-5	69-78-84	14-20-26	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.24-0.27	0.00-1.50-2.90	0.5-0.8-1.5
	8-28	2- 2-5	61-69-74	24-29-34	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.5-0.8-1.0
	28-36	2- 4-5	63-68-83	15-28-32	1.40-1.50-1.60	0.20-0.40-0.60	0.06-0.13-0.20	0.00-1.50-2.90	0.0-0.2-0.5
	36-52	2- 4-5	63-72-83	15-24-32	1.40-1.50-1.60	0.20-0.40-0.60	0.06-0.13-0.20	0.00-1.50-2.90	0.0-0.2-0.5
	52-80	---	---	---	---	0.00-0.01-0.06	---	---	---
Gnawbone----------------	0-7	5-10-15	61-71-83	12-19-24	1.30-1.35-1.40	0.60-1.30-2.00	0.16-0.20-0.24	0.00-1.50-2.90	1.0-1.8-3.0
	7-35	5- 8-15	61-63-71	24-29-34	1.40-1.50-1.60	0.60-1.30-2.00	0.11-0.16-0.20	0.00-1.50-2.90	0.0-0.5-1.0
	35-39	5- 7-15	60-70-80	15-23-32	1.40-1.50-1.60	0.60-1.30-2.00	0.07-0.12-0.16	0.00-1.50-2.90	0.0-0.2-0.5
	39-60	---	---	---	---	0.00-0.01-0.06	---	---	---
Spickert, soft bedrock substratum-------------	0-7	2- 5-10	64-76-86	12-19-26	1.30-1.45-1.60	0.60-1.30-2.00	0.18-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	7-31	2- 4-10	58-68-74	24-28-32	1.40-1.50-1.60	0.60-1.30-2.00	0.14-0.18-0.21	3.00-4.50-5.90	0.0-0.5-1.0
	31-58	8-10-15	57-69-78	14-21-28	1.60-1.70-1.80	0.01-0.06-0.20	0.06-0.07-0.08	0.00-1.50-2.90	0.0-0.2-0.5
	58-72	2- 4-10	58-72-83	15-24-32	1.40-1.50-1.60	0.20-0.40-0.60	0.06-0.13-0.20	0.00-1.50-2.90	0.0-0.2-0.5
	72-80	---	---	---	---	0.00-0.01-0.06	---	---	---
WokAV:									
Wilbur------------------	0-7	1- 9-15	67-77-85	10-14-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	7-32	5-12-20	62-72-85	10-16-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.5-1.2-2.0
	32-60	5-17-45	40-67-78	10-16-26	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.21-0.22	0.00-1.50-2.90	0.5-0.8-1.0
WokAW:									
Wilbur------------------	0-7	1- 9-15	67-77-85	10-14-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	1.0-2.0-3.0
	7-32	5-12-20	62-72-85	10-16-18	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.22-0.24	0.00-1.50-2.90	0.5-1.2-2.0
	32-60	5-17-45	40-67-78	10-16-26	1.30-1.40-1.50	0.60-1.30-2.00	0.20-0.21-0.22	0.00-1.50-2.90	0.5-0.8-1.0
WomAK:									
Wilhite-----------------	0-9	2- 8-10	51-57-68	30-35-39	1.40-1.50-1.60	0.20-0.40-0.60	0.18-0.21-0.24	3.00-4.50-5.90	1.0-2.0-3.0
	9-38	2- 6-10	40-51-73	35-43-50	1.40-1.50-1.60	0.06-0.13-0.20	0.08-0.13-0.18	3.00-5.90-8.90	0.0-1.0-2.0
	38-60	2- 6-15	35-52-65	30-42-50	1.40-1.50-1.60	0.01-0.04-0.06	0.08-0.13-0.18	3.00-5.90-8.90	0.0-0.5-1.0

Table 18.--Erosion Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. The abbreviation "rv" stands for representative value. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Erosion factors			Wind erodibility group	Wind erodibility index	Slope length (rv)	Slope gradient (rv)
		Kw	Kf	T				
	In						Ft	Pct
BbhA:								
Bartle------------------	0-8	.55	.55	4	5	56	250	0.9
	8-17	.55	.55					
	17-30	.55	.55					
	30-50	.55	.55					
	50-80	.55	.55					
BcrAQ:								
Beanblossom-------------	0-5	.43	.49	4	5	56	300	2.0
	5-24	.20	.43					
	24-54	.10	.32					
	54-60	---	---					
BcrAW:								
Beanblossom-------------	0-5	.43	.49	4	5	56	300	2.0
	5-24	.20	.43					
	24-54	.10	.32					
	54-60	---	---					
BgeAZ:								
Birds-------------------	0-8	.43	.43	5	6	48	300	0.2
	8-43	.49	.49					
	43-60	.49	.49					
BlvAW:								
Kintner-----------------	0-5	.28	.32	3	5	56	300	1.5
	5-23	.37	.43					
	23-48	.10	.28					
	48-60	---	---					
BuoA:								
Bromer------------------	0-8	.55	.55	4	5	56	200	1.0
	8-16	.55	.55					
	16-34	.49	.49					
	34-80	.24	.24					
CcaG:								
Caneyville--------------	0-8	.32	.37	2	5	56	150	41.0
	8-14	.43	.43					
	14-33	.17	.20					
	33-60	---	---					
Rock outcrop.								
CkkB2:								
Cincinnati--------------	0-8	.55	.55	4	5	56	175	4.0
	8-31	.55	.55					
	31-72	.49	.49					
	72-80	.32	.37					
CldC2:								
Cincinnati--------------	0-8	.55	.55	4	5	56	120	9.0
	8-24	.55	.55					
	24-74	.49	.49					
	74-80	.32	.37					

Table 18.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index	Slope length (rv)	Slope gradient (rv)
	In						Ft	Pct
CldC2:								
Blocher	0-7	.49	.49	3	5	56	120	9.0
	7-17	.49	.49					
	17-44	.24	.32					
	44-76	.28	.32					
	76-80	.37	.43					
ConC3:								
Coolville	0-4	.49	.49	3	6	48	120	9.0
	4-17	.43	.49					
	17-38	.32	.37					
	38-43	.32	.43					
	43-60	---	---					
Rarden	0-6	.49	.49	2	6	48	120	9.0
	6-28	.24	.28					
	28-37	.32	.43					
	37-60	---	---					
CtwB:								
Crider	0-8	.43	.43	5	5	56	250	4.0
	8-34	.49	.49					
	34-46	.49	.49					
	46-80	.15	.20					
Bedford	0-9	.55	.55	4	5	56	250	4.0
	9-24	.55	.55					
	24-51	.37	.55					
	51-80	.20	.24					
Navilleton	0-8	.49	.49	5	5	56	250	4.0
	8-35	.49	.49					
	35-65	.24	.28					
	65-79	.24	.24					
	79-83	---	---					
CwaAQ:								
Cuba	0-10	.43	.43	5	5	56	300	1.0
	10-47	.49	.49					
	47-60	.43	.55					
EepB:								
Elkinsville	0-10	.43	.43	5	5	56	175	4.0
	10-26	.43	.43					
	26-48	.28	.32					
	48-64	.28	.32					
	64-80	.24	.32					
EepGQ:								
Elkinsville	0-6	.43	.43	5	5	56	100	40.0
	6-36	.43	.43					
	36-75	.28	.32					
	75-80	.24	.32					
GgbG:								
Gilwood	0-6	.32	.43	2	5	56	200	38.0
	6-11	.37	.55					
	11-22	.28	.55					
	22-32	.10	.55					
	32-60	---	---					

Table 18.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index	Slope length (rv)	Slope gradient (rv)
	In						Ft	Pct
GgbG:								
Brownstown	0-6	.32	.43	2	5	56	200	48.0
	6-18	.32	.64					
	18-36	.10	.64					
	36-60	---	---					
GgfE2:								
Gilwood	0-6	.32	.43	2	5	56	120	20.0
	6-11	.37	.55					
	11-22	.28	.55					
	22-32	.10	.55					
	32-60	---	---					
Wrays	0-6	.43	.43	3	5	56	120	15.0
	6-25	.49	.49					
	25-34	.37	.49					
	34-44	.17	.55					
	44-60	---	---					
GmaG:								
Gnawbone	0-7	.43	.43	3	5	56	300	45.0
	7-27	.43	.49					
	27-39	.49	.55					
	39-60	---	---					
Kurtz	0-6	.37	.43	4	5	56	300	35.0
	6-36	.43	.49					
	36-47	.43	.49					
	47-60	---	---					
HcbAQ:								
Hatfield	0-10	.37	.43	4	6	48	300	0.9
	10-32	.43	.49					
	32-64	.49	.55					
	64-80	.49	.55					
HcgAH:								
Haymond	0-10	.43	.43	5	5	56	300	1.0
	10-44	.55	.55					
	44-60	.43	.49					
HcgAV:								
Haymond	0-10	.43	.43	5	5	56	300	1.0
	10-44	.55	.55					
	44-60	.43	.49					
HcgAW:								
Haymond	0-9	.43	.43	5	5	56	300	1.0
	9-44	.55	.55					
	44-60	.43	.49					
HufAK:								
Huntington	0-12	.32	.32	5	6	48	300	1.0
	12-42	.37	.37					
	42-80	.43	.43					
KxkC2:								
Knobcreek	0-7	.49	.49	5	6	48	150	9.0
	7-18	.43	.49					
	18-63	.24	.28					
	63-80	.20	.24					

Table 18.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors			Wind erodi-bility group	Wind erodi-bility index	Slope length (rv)	Slope gradient (rv)
		Kw	Kf	T				
	In						Ft	Pct
KxkC2:								
Navilleton	0-8	.49	.49	5	6	48	150	9.0
	8-35	.49	.49					
	35-43	.24	.28					
	43-72	.24	.24					
	72-82	---	---					
KxlC3:								
Knobcreek	0-6	.43	.49	4	6	48	150	9.0
	6-13	.43	.49					
	13-60	.24	.28					
	60-80	.20	.24					
Haggatt	0-5	.37	.43	2	6	48	150	9.0
	5-11	.28	.37					
	11-42	.15	.15					
	42-60	---	---					
Caneyville	0-5	.37	.37	1	6	48	150	9.0
	5-24	.17	.20					
	24-60	---	---					
KxlE3:								
Knobcreek	0-6	.43	.49	4	6	48	100	18.0
	6-13	.43	.49					
	13-60	.24	.28					
	60-80	.20	.24					
Haggatt	0-5	.37	.43	2	6	48	100	18.0
	5-11	.28	.37					
	11-42	.15	.15					
	42-60	---	---					
Caneyville	0-5	.32	.43	1	6	48	100	18.0
	5-24	.17	.20					
	24-60	---	---					
KxmE2:								
Knobcreek	0-7	.49	.49	5	6	48	100	18.0
	7-18	.43	.49					
	18-63	.24	.28					
	63-80	.20	.24					
Haggatt	0-5	.43	.43	3	6	48	100	18.0
	5-16	.28	.37					
	16-44	.15	.15					
	44-60	---	---					
Caneyville	0-6	.37	.43	2	6	48	100	18.0
	6-10	.43	.43					
	10-36	.17	.20					
	36-60	---	---					
KxoC2:								
Knobcreek	0-7	.49	.49	5	6	48	150	9.0
	7-18	.43	.49					
	18-63	.24	.28					
	63-80	.20	.24					

Table 18.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index	Slope length (rv)	Slope gradient (rv)
	In						Ft	Pct
KxoC2:								
Navilleton	0-8	.49	.49	5	6	48	150	7.0
	8-35	.49	.49					
	35-43	.24	.28					
	43-72	.24	.24					
	72-82	---	---					
Haggatt	0-5	.43	.43	3	6	48	150	9.0
	5-16	.28	.37					
	16-44	.15	.15					
	44-60	---	---					
KxpD2:								
Knobcreek	0-7	.49	.49	5	6	48	100	16.0
	7-18	.43	.49					
	18-63	.24	.28					
	63-80	.20	.24					
Haggatt	0-5	.43	.43	3	6	48	100	16.0
	5-16	.28	.37					
	16-44	.15	.15					
	44-60	---	---					
Caneyville	0-6	.37	.43	2	6	48	100	18.0
	6-10	.43	.43					
	10-36	.17	.20					
	36-60	---	---					
LpoAK:								
Lindside	0-10	.43	.43	5	6	48	300	0.9
	10-42	.37	.37					
	42-80	.37	.37					
McnGQ:								
Markland	0-4	.43	.43	4	6	48	100	36.0
	4-28	.28	.28					
	28-59	.32	.32					
	59-80	.43	.43					
McpC3:								
Markland	0-4	.43	.43	3	6	48	150	9.0
	4-25	.28	.28					
	25-42	.32	.32					
	42-80	.43	.43					
McuDQ:								
Markland	0-4	.43	.43	3	6	48	100	17.0
	4-18	.28	.28					
	18-40	.32	.32					
	40-80	.43	.43					
MhuA:								
McGary	0-11	.49	.49	4	6	48	200	0.9
	11-42	.37	.37					
	42-50	.28	.28					
	50-60	.32	.32					
MhyB2:								
Gatton	0-9	.55	.55	4	5	56	175	4.0
	9-24	.55	.55					
	24-66	.37	.43					
	66-80	.20	.24					

Table 18.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index	Slope length (rv)	Slope gradient (rv)
	In						Ft	Pct
NaaA:								
Nabb	0-10	.55	.55	4	5	56	200	0.9
	10-18	.55	.55					
	18-35	.55	.55					
	35-76	.49	.49					
	76-80	.32	.37					
NaaB2:								
Nabb	0-7	.55	.55	4	5	56	175	4.0
	7-13	.55	.55					
	13-33	.55	.55					
	33-71	.49	.49					
	71-80	.32	.37					
NbhAK:								
Newark	0-7	.43	.43	5	6	48	300	0.5
	7-66	.43	.43					
	66-80	.49	.49					
PcrA:								
Pekin	0-8	.55	.55	4	5	56	250	0.9
	8-29	.55	.55					
	29-58	.55	.55					
	58-80	.49	.55					
PcrB2:								
Pekin	0-10	.55	.55	4	5	56	175	4.0
	10-24	.55	.55					
	24-45	.55	.55					
	45-80	.49	.55					
PhaA:								
Peoga	0-8	.55	.55	5	5	56	300	0.5
	8-19	.55	.55					
	19-36	.55	.55					
	36-76	.55	.55					
	76-80	.55	.55					
Pml.								
Pits, quarry								
Ppu.								
Pits, sand and gravel								
RctD3:								
Rarden	0-4	.49	.49	2	6	48	100	17.0
	4-24	.24	.28					
	24-32	.32	.43					
	32-60	---	---					
Coolville	0-4	.49	.49	3	6	48	100	15.0
	4-17	.43	.49					
	17-38	.32	.37					
	38-43	.32	.43					
	43-60	---	---					
ScbA:								
Sciotoville	0-9	.49	.49	4	5	56	200	1.0
	9-27	.49	.55					
	27-50	.43	.49					
	50-80	.43	.49					

Table 18.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index	Slope length (rv)	Slope gradient (rv)
	In						Ft	Pct
ScbB2:								
Sciotoville-------------	0-9	.49	.49	4	5	56	150	3.0
	9-27	.49	.55					
	27-50	.43	.49					
	50-80	.43	.49					
SceB2:								
Scottsburg--------------	0-8	.49	.49	4	5	56	175	3.0
	8-31	.49	.49					
	31-53	.37	.43					
	53-61	.32	.32					
	61-67	---	---					
	67-80	---	---					
SfyB:								
Shircliff---------------	0-8	.49	.49	4	5	56	250	4.0
	8-19	.43	.43					
	19-43	.28	.28					
	43-80	.37	.37					
SoaB:								
Spickert----------------	0-7	.55	.55	4	5	56	175	4.0
	7-31	.55	.55					
	31-58	.49	.55					
	58-64	.28	.49					
	64-80	---	---					
SodB:								
Spickert----------------	0-10	.55	.55	4	5	56	175	2.5
	10-34	.55	.55					
	34-65	.49	.55					
	65-72	.28	.49					
	72-82	---	---					
SolC2:								
Spickert----------------	0-7	.55	.55	4	5	56	150	9.0
	7-31	.55	.55					
	31-58	.49	.55					
	58-64	.28	.49					
	64-80	---	---					
Wrays-------------------	0-7	.43	.43	3	5	56	120	9.0
	7-30	.49	.49					
	30-39	.37	.49					
	39-49	.17	.55					
	49-60	---	---					
StaAQ:								
Steff-------------------	0-11	.43	.43	5	5	56	300	0.9
	11-41	.49	.49					
	41-60	.28	.49					
StdAQ:								
Stendal-----------------	0-8	.43	.43	5	5	56	300	0.5
	8-40	.49	.49					
	40-60	.49	.49					
Uaa:								
Udorthents, cut and filled-----------------	---	---	---	---	---	---	90	6.0

Table 18.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index	Slope length (rv)	Slope gradient (rv)
	In						Ft	Pct
UaoAK:								
Udifluvents, cut and filled	---	---	---	---	---	---	---	1.0
Urban land	---	---	---	---	---	---	---	1.0
UedA:								
Urban land	---	---	---	---	---	---	---	1.0
Aquents, clayey substratum	---	---	---	---	---	---	---	0.5
UndAY:								
Urban land	---	---	---	---	---	---	---	1.0
Udifluvents	---	---	---	---	---	---	---	1.0
UneC:								
Urban land	---	---	---	---	---	---	---	3.0
Udarents, clayey substratum	---	---	---	---	---	---	---	6.0
UngB:								
Urban land	---	---	---	---	---	---	---	3.0
Udarents, fragipan substratum	---	---	---	---	---	---	---	5.0
UnkB:								
Urban land	---	---	---	---	---	---	---	2.0
Udarents, silty substratum	---	---	---	---	---	---	---	3.0
UnlC:								
Urban land	---	---	---	---	---	---	---	3.0
Udarents, hard bedrock substratum	---	---	---	---	---	---	---	6.0
UnpA:								
Urban land	---	---	---	---	---	---	---	1.0
Udarents, loamy substratum	---	---	---	---	---	---	---	2.0
UnrD:								
Urban land	---	---	---	---	---	---	---	8.0
Udarents, soft bedrock substratum	---	---	---	---	---	---	---	13.0
W.								
Water								
WaaAV:								
Wakeland	0-7	.43	.43	5	5	56	300	0.5
	7-29	.55	.55					
	29-60	.49	.49					

Table 18.--Erosion Properties of the Soils--Continued

Map symbol and soil name	Depth	Erosion factors Kw	Kf	T	Wind erodibility group	Wind erodibility index	Slope length (rv)	Slope gradient (rv)
	In						Ft	Pct
WaaAW:								
Wakeland----------------	0-7	.43	.43	5	5	56	300	0.5
	7-29	.55	.55					
	29-60	.49	.49					
WhdD2:								
Wellrock----------------	0-4	.49	.49	4	5	56	120	13.0
	4-8	.55	.55					
	8-28	.49	.49					
	28-36	.43	.49					
	36-52	.43	.49					
	52-80	---	---					
Gnawbone----------------	0-7	.37	.43	3	5	56	120	13.0
	7-35	.43	.49					
	35-39	.49	.55					
	39-60	---	---					
Spickert, soft bedrock substratum-------------	0-7	.55	.55	4	5	56	150	9.0
	7-31	.55	.55					
	31-58	.49	.55					
	58-72	.43	.49					
	72-80	---	---					
WokAV:								
Wilbur------------------	0-7	.43	.43	5	5	56	300	0.9
	7-32	.55	.55					
	32-60	.49	.49					
WokAW:								
Wilbur------------------	0-7	.43	.43	5	5	56	300	0.9
	7-32	.55	.55					
	32-60	.49	.49					
WomAK:								
Wilhite-----------------	0-9	.37	.37	5	7	38	250	0.2
	9-38	.37	.37					
	38-60	.37	.37					

Table 19.--Chemical Properties of the Soils

(The properties are displayed as low, representative, and high values separated by hyphens. 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	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
BbhA:					
Bartle---------------	0-8	5.0-10.0-15.0	3.0-7.0-12.0	4.5-5.9-7.3	0
	8-17	4.0-8.0-14.0	3.0-7.0-12.0	3.5-5.1-6.0	0
	17-30	10.0-13.0-19.0	8.0-11.0-15.0	3.5-4.4-6.0	0
	30-50	10.0-13.0-19.0	8.0-11.0-15.0	3.5-4.5-5.5	0
	50-80	6.0-11.0-14.0	5.0-9.0-12.0	4.5-5.0-7.3	0
BcrAQ:					
Beanblossom----------	0-5	7.0-13.0-19.0	5.0-11.0-17.0	5.1-6.2-7.3	0
	5-24	5.0-9.0-14.0	3.0-7.0-12.0	5.1-6.0-7.3	0
	24-54	4.0-9.0-14.0	---	5.6-6.0-6.5	0
	54-60	---	---	---	---
BcrAW:					
Beanblossom----------	0-5	7.0-13.0-19.0	5.0-11.0-17.0	5.1-6.2-7.3	0
	5-24	5.0-9.0-14.0	3.0-7.0-12.0	5.1-6.0-7.3	0
	24-54	4.0-9.0-14.0	---	5.6-6.0-6.5	0
	54-60	---	---	---	---
BgeAZ:					
Birds----------------	0-8	9.0-14.0-20.0	---	5.6-6.3-7.3	0
	8-43	9.0-14.0-18.0	---	5.6-6.3-7.3	0
	43-60	6.0-12.0-16.0	---	5.6-6.3-7.8	0
BlvAW:					
Kintner--------------	0-5	6.0-8.0-15.0	---	5.6-7.3-7.8	0-1-1
	5-23	5.0-9.0-16.0	---	5.6-7.2-7.8	0-1-5
	23-48	4.0-10.0-14.0	---	5.6-7.2-7.8	0-1-5
	48-60	---	---	---	---
BuoA:					
Bromer---------------	0-8	8.0-11.0-22.0	5.0-8.0-12.0	4.5-5.9-7.3	0
	8-16	8.0-12.0-16.0	5.0-9.0-13.0	4.5-5.4-7.3	0
	16-34	8.0-14.0-21.0	7.0-12.0-18.0	4.5-5.0-5.5	0
	34-80	16.0-20.0-24.0	12.0-16.0-20.0	4.5-5.0-6.0	0
CcaG:					
Caneyville-----------	0-8	10.0-14.0-20.0	5.0-11.0-16.0	5.1-5.8-7.3	0
	8-14	10.0-15.0-20.0	8.0-12.0-16.0	5.1-5.8-7.3	0
	14-33	20.0-29.0-37.0	16.0-23.0-30.0	5.1-5.8-7.8	0-0-5
	33-60	---	---	---	---
Rock outcrop.					
CkkB2:					
Cincinnati-----------	0-8	7.0-10.0-20.0	4.0-7.0-12.0	4.5-5.9-7.3	0
	8-31	6.0-11.0-14.0	5.0-9.0-12.0	4.5-4.9-6.5	0
	31-72	6.0-10.0-14.0	5.0-7.0-12.0	4.5-4.9-6.0	0
	72-80	10.0-15.0-22.0	8.0-13.0-18.0	4.5-5.5-6.5	0
CldC2:					
Cincinnati-----------	0-8	7.0-10.0-20.0	4.0-7.0-12.0	4.5-5.9-7.3	0
	8-24	6.0-11.0-14.0	5.0-9.0-12.0	4.5-4.9-6.5	0
	24-74	6.0-10.0-14.0	5.0-7.0-12.0	4.5-4.9-6.0	0
	74-80	10.0-15.0-22.0	8.0-13.0-18.0	4.5-5.5-6.5	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
CldC2:					
Blocher	0-7	9.0-11.0-20.0	6.0-9.0-12.0	4.5-5.9-7.3	0
	7-17	10.0-12.0-14.0	8.0-10.0-12.0	4.5-5.0-6.5	0
	17-44	12.0-19.0-27.0	10.0-15.0-22.0	4.5-4.9-5.5	0
	44-76	18.0-20.0-26.0	---	5.6-6.7-7.8	0-0-5
	76-80	4.0-8.0-15.0	---	7.4-7.9-8.4	5-18-25
ConC3:					
Coolville	0-4	7.0-13.0-20.0	4.0-7.0-15.0	3.5-5.4-7.3	0
	4-17	8.0-14.0-17.0	7.0-12.0-15.0	3.5-4.4-5.5	0
	17-38	17.0-23.0-31.0	15.0-19.0-25.0	3.5-4.5-5.5	0
	38-43	13.0-15.0-19.0	11.0-13.0-16.0	4.5-5.0-5.5	0
	43-60	---	---	---	---
Rarden	0-6	15.0-20.0-25.0	11.0-14.0-17.0	3.5-5.8-7.3	0
	6-28	15.0-21.0-30.0	13.0-18.0-24.0	3.5-4.4-5.5	0
	28-37	11.0-13.0-16.0	9.0-11.0-14.0	3.5-4.4-5.5	0
	37-60	---	---	---	---
CtwB:					
Crider	0-8	8.0-11.0-18.0	5.0-8.0-15.0	4.5-5.9-7.3	0
	8-34	12.0-15.0-18.0	9.0-12.0-15.0	4.5-5.3-7.3	0
	34-46	10.0-13.0-24.0	9.0-11.0-20.0	4.5-5.0-5.5	0
	46-80	12.0-23.0-30.0	12.0-21.0-36.0	4.5-5.0-6.0	0
Bedford	0-9	10.0-15.0-20.0	6.0-8.0-12.0	4.5-5.9-7.3	0
	9-24	11.0-16.0-25.0	9.0-14.0-22.0	3.5-5.2-6.0	0
	24-51	9.0-14.0-17.0	8.0-12.0-15.0	3.5-4.5-5.5	0
	51-80	21.0-34.0-48.0	18.0-31.0-45.0	3.5-5.1-5.5	0
Navilleton	0-8	8.0-15.0-20.0	4.0-8.0-12.0	4.5-5.9-7.3	0
	8-35	9.0-14.0-23.0	7.0-12.0-20.0	4.5-5.3-7.3	0
	35-65	20.0-35.0-47.0	18.0-33.0-45.0	4.5-5.0-5.5	0
	65-79	20.0-32.0-40.0	---	5.6-7.0-7.8	0
	79-83	---	---	---	---
CwaAQ:					
Cuba	0-10	10.0-16.0-25.0	5.0-10.0-15.0	4.5-5.9-7.3	0
	10-47	6.0-10.0-17.0	5.0-9.0-15.0	4.5-5.0-6.5	0
	47-60	5.0-9.0-17.0	4.0-8.0-15.0	4.5-5.0-5.5	0
EepB:					
Elkinsville	0-10	6.0-10.0-20.0	4.0-7.0-12.0	4.5-5.9-7.3	0
	10-26	8.0-13.0-18.0	6.0-11.0-15.0	4.5-5.9-7.3	0
	26-48	12.0-14.0-19.0	10.0-12.0-16.0	4.5-5.0-5.5	0
	48-64	10.0-13.0-17.0	8.0-11.0-15.0	4.5-5.2-5.5	0
	64-80	7.0-12.0-15.0	6.0-10.0-12.0	4.5-5.6-6.0	0
EepGQ:					
Elkinsville	0-6	6.0-10.0-15.0	4.0-7.0-12.0	4.5-5.1-5.5	0
	6-36	8.0-14.0-18.0	6.0-11.0-15.0	4.5-5.1-5.5	0
	36-75	12.0-14.0-19.0	10.0-12.0-16.0	4.5-5.0-5.5	0
	75-80	8.0-12.0-15.0	6.0-10.0-12.0	4.5-5.0-6.0	0
GgbG:					
Gilwood	0-6	5.0-9.0-15.0	4.0-8.0-12.0	4.5-5.5-6.5	0
	6-11	7.0-9.0-11.0	6.0-8.0-10.0	4.5-5.0-5.5	0
	11-22	7.0-9.0-11.0	6.0-8.0-10.0	3.5-4.6-5.0	0
	22-32	7.0-9.0-11.0	6.0-8.0-10.0	3.5-4.6-5.0	0
	32-60	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
GgbG:					
Brownstown-----------	0-6	5.0-6.0-10.0	3.0-4.0-6.0	3.5-4.5-6.5	0
	6-18	3.0-6.0-8.0	2.0-4.0-6.0	3.5-4.5-5.5	0
	18-36	3.0-6.0-8.0	2.0-4.0-6.0	3.5-4.6-5.5	0
	36-60	---	---	---	---
GgfE2:					
Gilwood-------------	0-6	5.0-9.0-15.0	4.0-8.0-12.0	4.5-5.5-7.3	0
	6-11	7.0-9.0-11.0	6.0-8.0-10.0	4.5-5.0-5.5	0
	11-22	7.0-9.0-11.0	6.0-8.0-10.0	3.5-4.6-5.0	0
	22-32	7.0-9.0-11.0	6.0-8.0-10.0	3.5-4.6-5.0	0
	32-60	---	---	---	---
Wrays---------------	0-6	8.0-14.0-20.0	3.0-5.0-8.0	4.5-5.9-7.3	0
	6-25	8.0-13.0-16.0	6.0-10.0-14.0	4.5-4.6-6.5	0
	25-34	14.0-17.0-21.0	12.0-15.0-18.0	3.5-4.4-5.0	0
	34-44	7.0-11.0-14.0	6.0-9.0-12.0	3.5-4.6-5.0	0
	44-60	---	---	---	---
GmaG:					
Gnawbone------------	0-7	7.0-10.0-15.0	4.0-8.0-12.0	3.5-4.3-5.0	0
	7-27	7.0-10.0-13.0	6.0-8.0-11.0	3.5-4.5-5.0	0
	27-39	7.0-9.0-12.0	6.0-8.0-10.0	3.5-4.5-5.0	0
	39-60	---	---	---	---
Kurtz---------------	0-6	7.0-10.0-14.0	4.0-7.0-10.0	3.5-4.3-5.0	0
	6-36	10.0-11.0-14.0	8.0-9.0-12.0	3.5-4.5-5.0	0
	36-47	9.0-10.0-14.0	8.0-9.0-12.0	4.5-5.0-5.5	0
	47-60	---	---	---	---
HcbAQ:					
Hatfield------------	0-10	14.0-18.0-25.0	8.0-11.0-16.0	4.5-5.9-7.3	0
	10-32	7.0-14.0-17.0	6.0-12.0-15.0	4.5-5.0-5.5	0
	32-64	11.0-14.0-17.0	9.0-12.0-15.0	4.5-5.2-6.5	0
	64-80	11.0-15.0-20.0	9.0-12.0-15.0	5.1-6.6-7.3	0
HcgAH:					
Haymond-------------	0-10	4.0-10.0-15.0	---	5.6-6.2-7.3	0
	10-44	10.0-13.0-16.0	---	5.6-6.2-7.3	0
	44-60	3.0-9.0-16.0	---	6.1-6.6-7.8	0
HcgAV:					
Haymond-------------	0-10	4.0-10.0-15.0	---	5.6-6.2-7.3	0
	10-44	10.0-13.0-16.0	---	5.6-6.2-7.3	0
	44-60	3.0-9.0-16.0	---	6.1-6.6-7.8	0
HcgAW:					
Haymond-------------	0-9	4.0-10.0-15.0	---	5.6-6.4-7.3	0
	9-44	10.0-13.0-16.0	---	5.6-6.4-7.3	0
	44-60	3.0-9.0-16.0	---	6.1-6.6-7.3	0
HufAK:					
Huntington----------	0-12	15.0-22.0-30.0	---	5.6-6.7-7.3	0
	12-42	7.0-13.0-18.0	---	5.6-6.7-7.3	0
	42-80	5.0-12.0-17.0	---	5.6-6.7-7.8	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
KxkC2:					
Knobcreek------------	0-7	10.0-14.0-22.0	5.0-9.0-15.0	4.5-5.9-7.3	0
	7-18	11.0-16.0-24.0	8.0-15.0-20.0	4.5-4.8-7.3	0
	18-63	22.0-29.0-40.0	20.0-28.0-38.0	4.5-5.0-5.5	0
	63-80	14.0-18.0-24.0	---	5.6-6.6-7.3	0
Navilleton-----------	0-8	8.0-15.0-20.0	4.0-8.0-12.0	4.5-6.2-7.3	0
	8-35	9.0-14.0-23.0	7.0-12.0-20.0	4.5-5.3-7.3	0
	35-43	20.0-35.0-47.0	18.0-33.0-45.0	4.5-5.0-5.5	0
	43-72	20.0-32.0-40.0	---	5.6-7.0-7.8	0
	72-82	---	---	---	---
KxlC3:					
Knobcreek------------	0-6	10.0-16.0-24.0	5.0-11.0-17.0	4.5-5.9-7.3	0
	6-13	11.0-16.0-24.0	8.0-15.0-20.0	4.5-4.8-7.3	0
	13-60	22.0-29.0-40.0	20.0-28.0-38.0	4.5-5.0-5.5	0
	60-80	14.0-18.0-24.0	---	5.6-6.6-7.3	0
Haggatt--------------	0-5	10.0-14.0-22.0	5.0-9.0-13.0	4.5-5.9-7.3	0
	5-11	12.0-15.0-20.0	9.0-12.0-17.0	4.5-5.4-7.3	0
	11-42	17.0-28.0-48.0	17.0-28.0-45.0	4.5-5.1-7.3	0
	42-60	---	---	---	---
Caneyville-----------	0-5	10.0-14.0-20.0	5.0-9.0-15.0	5.1-5.9-7.3	0
	5-24	21.0-29.0-37.0	18.0-26.0-35.0	5.1-5.4-7.8	0-0-5
	24-60	---	---	---	---
KxlE3:					
Knobcreek------------	0-6	10.0-16.0-24.0	5.0-11.0-17.0	4.5-5.9-7.3	0
	6-13	11.0-16.0-24.0	8.0-15.0-20.0	4.5-4.8-7.3	0
	13-60	22.0-29.0-40.0	20.0-28.0-38.0	4.5-5.0-5.5	0
	60-80	14.0-18.0-24.0	---	5.6-6.6-7.3	0
Haggatt--------------	0-5	10.0-14.0-22.0	5.0-9.0-13.0	4.5-5.9-7.3	0
	5-11	12.0-15.0-20.0	9.0-12.0-17.0	4.5-5.4-7.3	0
	11-42	17.0-28.0-48.0	17.0-28.0-45.0	4.5-5.1-7.3	0
	42-60	---	---	---	---
Caneyville-----------	0-5	10.0-14.0-20.0	5.0-9.0-15.0	5.1-5.9-7.3	0
	5-24	21.0-29.0-37.0	18.0-26.0-35.0	5.1-5.4-7.8	0-0-5
	24-60	---	---	---	---
KxmE2:					
Knobcreek------------	0-7	10.0-14.0-22.0	5.0-9.0-15.0	4.5-5.9-7.3	0
	7-18	11.0-16.0-24.0	8.0-15.0-20.0	4.5-4.8-7.3	0
	18-63	22.0-29.0-40.0	20.0-28.0-38.0	4.5-5.0-5.5	0
	63-80	14.0-18.0-24.0	---	5.6-6.6-7.3	0
Haggatt--------------	0-5	8.0-12.0-20.0	4.0-8.0-12.0	4.5-5.9-7.3	0
	5-16	12.0-15.0-20.0	9.0-12.0-17.0	4.5-5.4-7.3	0
	16-44	17.0-28.0-48.0	17.0-28.0-45.0	4.5-5.1-7.3	0
	44-60	---	---	---	---
Caneyville-----------	0-6	8.0-13.0-20.0	5.0-7.0-12.0	5.1-5.9-7.3	0
	6-10	10.0-15.0-20.0	7.0-11.0-15.0	4.5-5.6-7.3	0
	10-36	21.0-29.0-37.0	18.0-26.0-35.0	5.1-5.4-7.8	0-0-5
	36-60	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
KxoC2:					
Knobcreek------------	0-7	10.0-14.0-22.0	5.0-9.0-15.0	4.5-5.9-7.3	0
	7-18	11.0-16.0-24.0	8.0-15.0-20.0	4.5-4.8-7.3	0
	18-63	22.0-29.0-40.0	20.0-28.0-38.0	4.5-5.0-5.5	0
	63-80	14.0-18.0-24.0	---	5.6-6.6-7.3	0
Navilleton-----------	0-8	8.0-15.0-20.0	4.0-8.0-12.0	4.5-6.2-7.3	0
	8-35	9.0-14.0-20.0	7.0-12.0-20.0	4.5-5.3-7.3	0
	35-43	20.0-35.0-47.0	18.0-33.0-45.0	4.5-5.0-5.5	0
	43-72	20.0-32.0-40.0	18.0-30.0-38.0	5.6-7.0-7.8	0
	72-82	---	---	---	---
Haggatt--------------	0-5	8.0-12.0-20.0	4.0-8.0-12.0	4.5-5.9-7.3	0
	5-16	12.0-15.0-20.0	9.0-12.0-17.0	4.5-5.4-7.3	0
	16-44	17.0-28.0-48.0	17.0-28.0-45.0	4.5-5.1-7.3	0
	44-60	---	---	---	---
KxpD2:					
Knobcreek------------	0-7	10.0-14.0-22.0	5.0-9.0-15.0	4.5-5.9-7.3	0
	7-18	11.0-16.0-24.0	8.0-15.0-20.0	4.5-4.8-7.3	0
	18-63	22.0-29.0-40.0	20.0-28.0-38.0	4.5-5.0-5.5	0
	63-80	14.0-18.0-24.0	---	5.6-6.6-7.3	0
Haggatt--------------	0-5	8.0-12.0-20.0	4.0-8.0-12.0	4.5-5.9-7.3	0
	5-16	12.0-15.0-20.0	9.0-12.0-17.0	4.5-5.4-7.3	0
	16-44	17.0-28.0-48.0	17.0-28.0-45.0	4.5-5.1-7.3	0
	44-60	---	---	---	---
Caneyville-----------	0-6	8.0-13.0-20.0	5.0-7.0-12.0	5.1-5.9-7.3	0
	6-10	10.0-15.0-20.0	7.0-11.0-15.0	4.5-5.6-7.3	0
	10-36	21.0-29.0-37.0	18.0-26.0-35.0	5.1-5.4-7.8	0-0-5
	36-60	---	---	---	---
LpoAK:					
Lindside-------------	0-10	10.0-16.0-24.0	---	5.6-6.1-7.3	0
	10-42	10.0-14.0-22.0	---	5.6-6.0-7.3	0
	42-80	10.0-12.0-22.0	---	5.6-6.5-7.3	0
McnGQ:					
Markland-------------	0-4	14.0-20.0-24.0	12.0-15.0-18.0	5.1-6.1-7.3	0
	4-28	14.0-18.0-24.0	9.0-14.0-16.0	4.5-5.9-7.8	0-0-5
	28-59	12.0-17.0-20.0	---	7.4-7.9-8.4	5-15-25
	59-80	8.0-13.0-16.0	---	7.4-8.1-8.4	20-30-45
McpC3:					
Markland-------------	0-4	14.0-20.0-24.0	12.0-15.0-18.0	5.1-6.1-7.3	0
	4-25	14.0-18.0-24.0	9.0-14.0-16.0	4.5-5.9-7.8	0-0-5
	25-42	12.0-17.0-20.0	---	7.4-7.9-8.4	5-15-25
	42-80	8.0-13.0-16.0	---	7.4-8.1-8.4	20-30-45
McuDQ:					
Markland-------------	0-4	14.0-20.0-24.0	12.0-15.0-18.0	5.1-6.1-7.3	0
	4-18	14.0-18.0-24.0	9.0-14.0-16.0	4.5-5.9-7.8	0-0-5
	18-40	12.0-17.0-20.0	---	7.4-7.9-8.4	5-15-25
	40-80	8.0-13.0-16.0	---	7.4-8.1-8.4	20-30-45
MhuA:					
McGary---------------	0-11	8.0-12.0-20.0	---	5.6-6.6-7.3	0
	11-42	12.0-20.0-24.0	10.0-16.0-20.0	4.5-6.6-7.8	0-0-15
	42-50	16.0-19.0-24.0	---	7.4-7.9-8.4	0-15-30
	50-60	10.0-15.0-18.0	---	7.4-8.0-8.4	10-30-40

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
MhyB2:					
Gatton	0-9	8.0-13.0-18.0	6.0-9.0-12.0	4.5-5.9-7.3	0
	9-24	9.0-12.0-14.0	7.0-10.0-12.0	4.5-5.2-5.5	0
	24-66	9.0-12.0-15.0	7.0-10.0-13.0	4.5-5.2-5.5	0
	66-80	14.0-19.0-27.0	12.0-17.0-22.0	4.5-5.2-5.5	0
NaaA:					
Nabb	0-10	7.0-11.0-20.0	4.0-8.0-12.0	4.5-5.9-7.3	0
	10-18	7.0-10.0-13.0	4.0-6.0-10.0	4.5-5.3-6.5	0
	18-35	10.0-14.0-19.0	8.0-12.0-16.0	3.5-4.8-5.5	0
	35-76	8.0-11.0-14.0	6.0-9.0-12.0	3.5-4.6-5.5	0
	76-80	15.0-17.0-22.0	12.0-14.0-19.0	5.1-5.6-7.3	0
NaaB2:					
Nabb	0-7	7.0-11.0-20.0	4.0-8.0-12.0	4.5-5.9-7.3	0
	7-13	7.0-10.0-13.0	4.0-7.0-12.0	4.5-5.3-6.5	0
	13-33	10.0-14.0-19.0	8.0-12.0-16.0	3.5-4.8-5.5	0
	33-71	8.0-11.0-14.0	6.0-9.0-12.0	3.5-4.6-5.5	0
	71-80	15.0-17.0-22.0	12.0-14.0-19.0	5.1-5.6-7.3	0
NbhAK:					
Newark	0-7	10.0-16.0-22.0	---	5.6-6.5-7.3	0
	7-66	10.0-15.0-20.0	---	5.6-6.6-7.3	0
	66-80	8.0-14.0-22.0	---	5.6-6.6-7.8	0
PcrA:					
Pekin	0-8	6.0-11.0-18.0	4.0-9.0-14.0	4.5-5.9-7.3	0
	8-29	8.0-11.0-15.0	6.0-9.0-13.0	4.5-4.8-7.3	0
	29-58	10.0-14.0-19.0	8.0-12.0-16.0	3.5-4.3-5.5	0
	58-80	6.0-12.0-18.0	5.0-10.0-15.0	4.5-4.9-7.3	0
PcrB2:					
Pekin	0-10	6.0-11.0-18.0	4.0-9.0-14.0	4.5-5.9-7.3	0
	10-24	7.0-11.0-15.0	6.0-9.0-13.0	4.5-4.8-7.3	0
	24-45	10.0-14.0-19.0	8.0-12.0-16.0	3.5-4.3-5.5	0
	45-80	6.0-12.0-18.0	5.0-10.0-15.0	4.5-4.9-7.3	0
PhaA:					
Peoga	0-8	8.0-12.0-22.0	4.0-8.0-12.0	4.5-5.9-7.3	0
	8-19	6.0-9.0-11.0	4.0-6.0-8.0	3.5-4.7-6.5	0
	19-36	10.0-16.0-20.0	7.0-12.0-15.0	3.5-4.7-5.5	0
	36-76	12.0-15.0-20.0	9.0-12.0-15.0	3.5-5.0-6.0	0
	76-80	12.0-16.0-22.0	10.0-13.0-18.0	5.1-5.6-7.3	0
Pml.					
Pits, quarry					
Ppu.					
Pits, sand and gravel					
RctD3:					
Rarden	0-4	15.0-20.0-25.0	11.0-14.0-17.0	3.5-5.8-7.3	0
	4-24	15.0-21.0-30.0	13.0-18.0-24.0	3.5-4.4-5.5	0
	24-32	11.0-13.0-16.0	9.0-11.0-14.0	3.5-4.4-5.5	0
	32-60	---	---	---	---
Coolville	0-4	7.0-13.0-20.0	4.0-7.0-15.0	3.5-5.4-7.3	0
	4-17	8.0-14.0-17.0	7.0-12.0-15.0	3.5-4.4-5.5	0
	17-38	17.0-23.0-31.0	15.0-19.0-25.0	3.5-4.5-5.5	0
	38-43	13.0-15.0-19.0	11.0-13.0-16.0	4.5-5.0-5.5	0
	43-60	---	---	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
ScbA:					
Sciotoville----------	0-9	6.0-12.0-20.0	3.0-6.0-10.0	5.1-5.9-7.3	0
	9-27	6.0-11.0-16.0	4.0-7.0-12.0	4.5-4.8-5.5	0
	27-50	8.0-12.0-17.0	6.0-9.0-14.0	4.5-4.8-5.5	0
	50-80	8.0-11.0-15.0	5.0-8.0-12.0	4.5-5.1-6.5	0
ScbB2:					
Sciotoville----------	0-9	6.0-12.0-20.0	3.0-6.0-10.0	5.1-5.9-7.3	0
	9-27	6.0-11.0-16.0	4.0-7.0-12.0	4.5-4.8-5.5	0
	27-50	8.0-12.0-17.0	6.0-9.0-14.0	4.5-4.8-5.5	0
	50-80	8.0-11.0-15.0	5.0-8.0-12.0	4.5-5.1-6.5	0
SceB2:					
Scottsburg-----------	0-8	9.0-14.0-22.0	4.0-5.0-12.0	4.5-5.9-7.3	0
	8-31	6.0-9.0-14.0	5.0-8.0-12.0	4.5-4.8-6.5	0
	31-53	10.0-12.0-14.0	8.0-10.0-12.0	3.5-4.4-5.0	0
	53-61	12.0-14.0-18.0	10.0-12.0-15.0	3.5-4.3-5.0	0
	61-67	---	---	3.5-4.5-5.0	---
	67-80	---	---	---	---
SfyB:					
Shircliff------------	0-8	9.0-12.0-20.0	4.0-7.0-12.0	5.1-5.9-7.3	0
	8-19	10.0-13.0-17.0	6.0-9.0-14.0	4.5-5.0-6.0	0
	19-43	16.0-20.0-24.0	12.0-16.0-20.0	4.5-5.5-7.8	0-0-5
	43-80	10.0-14.0-18.0	---	7.8-8.1-8.4	10-25-45
SoaB:					
Spickert-------------	0-7	8.0-13.0-20.0	5.0-8.0-12.0	3.5-5.4-7.3	0
	7-31	6.0-12.0-14.0	4.0-9.0-12.0	3.5-4.9-6.0	0
	31-58	9.0-13.0-18.0	8.0-12.0-16.0	3.5-4.7-5.0	0
	58-64	9.0-13.0-20.0	8.0-12.0-18.0	3.5-4.4-5.0	0
	64-80	---	---	---	---
SodB:					
Spickert-------------	0-10	8.0-13.0-20.0	5.0-8.0-12.0	3.5-5.4-7.3	0
	10-34	6.0-12.0-14.0	4.0-9.0-12.0	3.5-4.9-6.0	0
	34-65	9.0-13.0-18.0	8.0-12.0-16.0	3.5-4.7-5.0	0
	65-72	9.0-13.0-20.0	8.0-12.0-18.0	3.5-4.4-5.0	0
	72-82	---	---	---	---
SolC2:					
Spickert-------------	0-7	8.0-13.0-20.0	5.0-8.0-12.0	3.5-5.9-7.3	0
	7-31	6.0-12.0-14.0	4.0-9.0-12.0	3.5-4.9-6.0	0
	31-58	9.0-13.0-18.0	8.0-12.0-16.0	3.5-4.7-5.0	0
	58-64	9.0-13.0-20.0	8.0-12.0-18.0	3.5-4.4-5.0	0
	64-80	---	---	---	---
Wrays----------------	0-7	8.0-14.0-20.0	3.0-5.0-8.0	4.5-5.9-7.3	0
	7-30	6.0-13.0-16.0	6.0-10.0-14.0	4.5-4.8-6.5	0
	30-39	14.0-17.0-21.0	12.0-15.0-18.0	3.5-4.4-5.0	0
	39-49	7.0-11.0-14.0	6.0-9.0-12.0	3.5-4.6-5.0	0
	49-60	---	---	---	---
StaAQ:					
Steff----------------	0-11	8.0-13.0-20.0	5.0-10.0-15.0	4.5-5.9-7.3	0
	11-41	6.0-9.0-17.0	5.0-7.0-15.0	4.5-5.0-6.5	0
	41-60	7.0-9.0-15.0	5.0-8.0-15.0	4.5-5.0-5.5	0

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
StdAQ:					
Stendal--------------	0-8	8.0-14.0-20.0	5.0-10.0-15.0	4.5-5.9-7.3	0
	8-40	6.0-12.0-17.0	5.0-10.0-15.0	4.5-5.0-6.5	0
	40-60	6.0-12.0-17.0	5.0-10.0-15.0	4.5-5.1-5.5	0
Uaa.					
Udorthents, cut and filled					
UaoAK:					
Udifluvents, cut and filled.					
Urban land.					
UedA:					
Urban land.					
Aquents, clayey substratum.					
UndAY:					
Urban land.					
Udifluvents.					
UneC:					
Urban land.					
Udarents, clayey substratum.					
UngB:					
Urban land.					
Udarents, fragipan substratum.					
UnkB:					
Urban land.					
Udarents, silty substratum.					
UnlC:					
Urban land.					
Udarents, hard bedrock substratum.					
UnpA:					
Urban land.					
Udarents, loamy substratum.					
UnrD:					
Urban land.					
Udarents, soft bedrock substratum.					

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate equivalent
	In	meq/100 g	meq/100 g	pH	Pct
W.					
Water					
WaaAV:					
Wakeland-------------	0-7	4.0-9.0-12.0	---	5.6-6.4-7.3	0
	7-29	4.0-9.0-12.0	---	5.6-6.4-7.3	0
	29-60	4.0-9.0-12.0	---	5.6-6.4-7.3	0
WaaAW:					
Wakeland-------------	0-7	4.0-9.0-12.0	---	5.6-6.4-7.3	0
	7-29	4.0-9.0-12.0	---	5.6-6.4-7.3	0
	29-60	4.0-9.0-12.0	---	5.6-6.4-7.3	0
WhdD2:					
Wellrock-------------	0-4	9.0-14.0-20.0	6.0-8.0-10.0	4.5-5.9-7.3	0
	4-8	5.0-8.0-12.0	4.0-7.0-10.0	3.5-4.3-6.5	0
	8-28	7.0-13.0-16.0	6.0-11.0-14.0	3.5-4.5-5.0	0
	28-36	7.0-14.0-21.0	6.0-12.0-18.0	3.5-4.4-5.0	0
	36-52	7.0-14.0-21.0	6.0-12.0-18.0	3.5-4.7-5.0	0
	52-80	---	---	---	---
Gnawbone-------------	0-7	9.0-13.0-20.0	4.0-8.0-12.0	3.5-5.9-7.3	0
	7-35	7.0-10.0-13.0	6.0-8.0-10.0	3.5-4.5-5.0	0
	35-39	7.0-9.0-12.0	6.0-8.0-10.0	3.5-4.5-5.0	0
	39-60	---	---	---	---
Spickert, soft bedrock substratum--	0-7	8.0-13.0-20.0	5.0-8.0-12.0	3.5-5.4-7.3	0
	7-31	5.0-12.0-15.0	4.0-9.0-12.0	4.5-5.3-6.0	0
	31-58	10.0-14.0-19.0	8.0-12.0-16.0	4.5-4.8-5.0	0
	58-72	12.0-19.0-21.0	10.0-16.0-18.0	3.5-4.7-5.0	0
	72-80	---	---	---	---
WokAV:					
Wilbur---------------	0-7	4.0-10.0-16.0	---	5.6-6.4-7.3	0
	7-32	4.0-10.0-15.0	---	5.6-6.4-7.3	0
	32-60	4.0-10.0-16.0	---	5.6-6.4-7.3	0
WokAW:					
Wilbur---------------	0-7	4.0-10.0-16.0	---	5.6-6.4-7.3	0
	7-32	4.0-10.0-15.0	---	5.6-6.4-7.3	0
	32-60	4.0-10.0-16.0	---	5.6-6.4-7.3	0
WomAK:					
Wilhite--------------	0-9	14.0-19.0-25.0	11.0-14.0-19.0	5.1-6.5-7.3	0
	9-38	14.0-20.0-26.0	11.0-15.0-20.0	5.1-5.7-7.3	0
	38-60	14.0-20.0-26.0	11.0-15.0-20.0	5.1-5.7-7.3	0

Table 20.--Water Features

(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	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
BbhA:										
Bartle	C	Medium								
			January	0.5-2.0	2.0-3.5	---	---	None	---	None
			February	0.5-2.0	2.0-3.5	---	---	None	---	None
			March	0.5-2.0	2.0-3.5	---	---	None	---	None
			April	0.5-2.0	2.0-3.5	---	---	None	---	None
			May	1.0-3.5	5.0-6.7	---	---	None	---	None
			June	2.0-3.5	5.0-6.7	---	---	None	---	None
			July	3.5-6.0	>6.0	---	---	None	---	None
			August	3.5-6.0	>6.0	---	---	None	---	None
			November	1.0-3.0	2.5-3.5	---	---	None	---	None
			December	0.5-2.0	2.0-3.5	---	---	None	---	None
BcrAQ:										
Beanblossom	B	Low								
			January	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
			February	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
			March	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
			April	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
			May	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
			June	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
			July	4.0-5.0	4.5-5.0	---	---	None	Very brief	Very rare
			August	4.0-5.0	4.5-5.0	---	---	None	Very brief	Very rare
			September	---	---	---	---	None	Very brief	Very rare
			October	---	---	---	---	None	Very brief	Very rare
			November	3.3-5.0	4.0-5.0	---	---	None	Very brief	Very rare
			December	3.3-5.0	4.0-5.0	---	---	None	Very brief	Very rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
BcrAW:										
Beanblossom---------------	B	Low								
			January	3.3-5.0	4.0-5.0	---	---	None	Very brief	Occasional
			February	3.3-5.0	4.0-5.0	---	---	None	Very brief	Occasional
			March	3.3-5.0	4.0-5.0	---	---	None	Very brief	Occasional
			April	3.3-5.0	4.0-5.0	---	---	None	Very brief	Occasional
			May	3.3-5.0	4.0-5.0	---	---	None	Very brief	Occasional
			June	3.3-5.0	4.0-5.0	---	---	None	Very brief	Occasional
			July	4.0-5.0	4.5-5.0	---	---	None	Very brief	Rare
			August	4.0-5.0	4.5-5.0	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
			December	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
BgeAZ:										
Birds---------------------	D	Negligible								
			January	0.0	>6.0	0.0-1.0	Long	Frequent	Very brief	Frequent
			February	0.0	>6.0	0.0-1.0	Long	Frequent	Very brief	Frequent
			March	0.0	>6.0	0.0-1.0	Long	Frequent	Very brief	Frequent
			April	0.0	>6.0	0.0-1.0	Long	Frequent	Very brief	Frequent
			May	0.0	>6.0	0.0-1.0	Long	Frequent	Very brief	Occasional
			June	0.0	>6.0	0.0-1.0	Long	Frequent	Very brief	Occasional
			July	0.0	>6.0	0.0-1.0	Brief	Frequent	Very brief	Rare
			August	0.0-1.0	>6.0	0.0-1.0	Brief	Occasional	Very brief	Rare
			September	0.0-3.0	>6.0	0.0-1.0	Brief	Rare	Very brief	Rare
			October	0.0-3.5	>6.0	0.0-1.0	Brief	Rare	Very brief	Rare
			November	0.0	>6.0	0.0-1.0	Brief	Occasional	Very brief	Rare
			December	0.0	>6.0	0.0-1.0	Long	Frequent	Very brief	Occasional
BlvAW:										
Kintner-------------------	B	Low								
			January	2.5-3.3	4.0-5.0	---	---	None	Very brief	Occasional
			February	2.5-3.3	4.0-5.0	---	---	None	Very brief	Occasional
			March	2.5-3.3	4.0-5.0	---	---	None	Very brief	Occasional
			April	2.5-3.3	4.0-5.0	---	---	None	Very brief	Occasional
			May	3.3-5.0	4.0-5.0	---	---	None	Very brief	Occasional
			June	3.3-5.0	4.0-5.0	---	---	None	Very brief	Occasional
			July	4.0-5.0	4.5-5.0	---	---	None	Very brief	Rare
			August	4.0-5.0	4.5-5.0	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	3.3-5.0	4.0-5.0	---	---	None	Very brief	Rare
			December	2.5-3.3	4.0-5.0	---	---	None	Very brief	Rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
BuoA:										
Bromer--------------------	C	Medium								
			January	0.5-2.0	2.0-3.5	---	---	None	---	None
			February	0.5-2.0	2.0-3.5	---	---	None	---	None
			March	0.5-2.0	2.0-3.5	---	---	None	---	None
			April	0.5-2.0	2.0-3.5	---	---	None	---	None
			May	1.0-3.5	5.0-6.7	---	---	None	---	None
			June	2.0-3.5	5.0-6.7	---	---	None	---	None
			July	3.5-6.0	>6.0	---	---	None	---	None
			August	3.5-6.0	>6.0	---	---	None	---	None
			November	1.0-3.0	2.5-3.5	---	---	None	---	None
			December	0.5-2.0	2.0-3.5	---	---	None	---	None
CcaG:										
Caneyville----------------	C	Very high								
			Jan-Dec	---	---	---	---	None	---	None
Rock outcrop.										
CkkB2:										
Cincinnati----------------	C	Medium								
			January	1.7-3.0	2.5-3.5	---	---	None	---	None
			February	1.7-3.0	2.5-3.5	---	---	None	---	None
			March	1.7-3.0	2.5-3.5	---	---	None	---	None
			April	1.7-3.0	2.5-3.5	---	---	None	---	None
			May	2.5-3.0	3.0-4.0	---	---	None	---	None
			November	2.5-3.0	3.0-3.5	---	---	None	---	None
			December	1.7-3.0	2.5-3.5	---	---	None	---	None
CldC2:										
Cincinnati----------------	C	High								
			January	1.7-3.0	2.5-3.5	---	---	None	---	None
			February	1.7-3.0	2.5-3.5	---	---	None	---	None
			March	1.7-3.0	2.5-3.5	---	---	None	---	None
			April	1.7-3.0	2.5-3.5	---	---	None	---	None
			May	2.5-3.0	3.0-4.0	---	---	None	---	None
			November	2.5-3.0	3.0-3.5	---	---	None	---	None
			December	1.7-3.0	2.5-3.5	---	---	None	---	None
Blocher------------------	C	Very high								
			January	2.0-3.0	2.5-3.5	---	---	None	---	None
			February	2.0-3.0	2.5-3.5	---	---	None	---	None
			March	2.0-3.0	2.5-3.5	---	---	None	---	None
			April	2.0-3.0	2.5-3.5	---	---	None	---	None
			December	2.0-3.0	2.5-3.5	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
ConC3:										
Coolville-----------------	C	Very high								
			January	1.0-2.0	3.3-5.0	---	---	None	---	None
			February	1.0-2.0	3.3-5.0	---	---	None	---	None
			March	1.0-2.0	3.3-5.0	---	---	None	---	None
			April	1.0-2.0	3.3-5.0	---	---	None	---	None
			May	2.0-3.3	3.3-5.0	---	---	None	---	None
			June	2.5-3.3	3.3-5.0	---	---	None	---	None
			November	2.5-3.3	3.3-5.0	---	---	None	---	None
			December	1.0-2.0	3.3-5.0	---	---	None	---	None
Rarden--------------------	C	Very high								
			January	1.0-2.0	1.7-3.3	---	---	None	---	None
			February	1.0-2.0	1.7-3.3	---	---	None	---	None
			March	1.0-2.0	1.7-3.3	---	---	None	---	None
			April	1.0-2.0	1.7-3.3	---	---	None	---	None
			December	1.0-2.0	1.7-3.3	---	---	None	---	None
CtwB:										
Crider--------------------	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
Bedford-------------------	C	Medium								
			January	1.5-2.5	1.7-3.1	---	---	None	---	None
			February	1.5-2.5	1.7-3.1	---	---	None	---	None
			March	1.5-2.5	1.7-3.1	---	---	None	---	None
			April	1.5-2.5	2.0-3.1	---	---	None	---	None
			May	2.0-2.5	2.5-3.1	---	---	None	---	None
			November	2.0-2.5	2.5-3.1	---	---	None	---	None
			December	1.5-2.5	2.0-3.1	---	---	None	---	None
Navilleton----------------	C	Medium								
			Jan-Dec	---	---	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
CwaAQ:										
Cuba	B	Very low								
			January	---	---	---	---	None	Very brief	Rare
			February	---	---	---	---	None	Very brief	Rare
			March	---	---	---	---	None	Very brief	Rare
			April	---	---	---	---	None	Very brief	Rare
			May	---	---	---	---	None	Very brief	Rare
			June	---	---	---	---	None	Very brief	Rare
			July	---	---	---	---	None	Very brief	Very rare
			August	---	---	---	---	None	Very brief	Very rare
			September	---	---	---	---	None	Very brief	Very rare
			October	---	---	---	---	None	Very brief	Very rare
			November	---	---	---	---	None	Very brief	Very rare
			December	---	---	---	---	None	Very brief	Very rare
EepB:										
Elkinsville	B	Low								
			Jan-Dec	---	---	---	---	None	---	None
EepGQ:										
Elkinsville	B	High								
			January	---	---	---	---	None	Brief	Rare
			February	---	---	---	---	None	Brief	Rare
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Very rare
			August	---	---	---	---	None	Brief	Very rare
			September	---	---	---	---	None	Brief	Very rare
			October	---	---	---	---	None	Brief	Very rare
			November	---	---	---	---	None	Brief	Very rare
			December	---	---	---	---	None	Brief	Very rare
GgbG:										
Gilwood	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Brownstown	B	High								
			Jan-Dec	---	---	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
GgfE2:										
Gilwood	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Wrays	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
GmaG:										
Gnawbone	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Kurtz	C	High								
			Jan-Dec	---	---	---	---	None	---	None
HcbAQ:										
Hatfield	C	Low								
			January	0.5-2.0	2.0-3.5	---	---	None	Brief	Rare
			February	0.5-2.0	2.0-3.5	---	---	None	Brief	Rare
			March	0.5-2.0	2.0-3.5	---	---	None	Brief	Rare
			April	0.5-2.0	2.0-3.5	---	---	None	Brief	Rare
			May	1.0-3.5	5.0-6.7	---	---	None	Brief	Rare
			June	2.0-3.5	5.0-6.7	---	---	None	Brief	Rare
			July	3.5-6.0	>6.0	---	---	None	Brief	Very rare
			August	3.5-6.0	>6.0	---	---	None	Brief	Very rare
			September	---	---	---	---	None	Brief	Very rare
			October	---	---	---	---	None	Brief	Very rare
			November	1.0-3.0	2.5-3.5	---	---	None	Brief	Very rare
			December	0.5-2.0	2.0-3.5	---	---	None	Brief	Very rare
HcgAH:										
Haymond	B	Very low								
			January	---	---	---	---	None	Brief	Frequent
			February	---	---	---	---	None	Brief	Frequent
			March	---	---	---	---	None	Brief	Frequent
			April	---	---	---	---	None	Brief	Frequent
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Occasional
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
			November	---	---	---	---	None	Brief	Rare
			December	---	---	---	---	None	Brief	Occasional

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
HcgAV:										
Haymond-------------------	B	Very low								
			January	---	---	---	---	None	Very brief	Frequent
			February	---	---	---	---	None	Very brief	Frequent
			March	---	---	---	---	None	Very brief	Frequent
			April	---	---	---	---	None	Very brief	Frequent
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Very brief	Rare
			December	---	---	---	---	None	Very brief	Occasional
HcgAW:										
Haymond-------------------	B	Very low								
			January	---	---	---	---	None	Very brief	Occasional
			February	---	---	---	---	None	Very brief	Occasional
			March	---	---	---	---	None	Very brief	Occasional
			April	---	---	---	---	None	Very brief	Occasional
			May	---	---	---	---	None	Very brief	Occasional
			June	---	---	---	---	None	Very brief	Occasional
			July	---	---	---	---	None	Very brief	Rare
			August	---	---	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	---	---	---	---	None	Very brief	Rare
			December	---	---	---	---	None	Very brief	Rare
HufAK:										
Huntington----------------	B	Very low								
			January	---	---	---	---	None	Brief	Occasional
			February	---	---	---	---	None	Brief	Occasional
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
			November	---	---	---	---	None	Brief	Rare
			December	---	---	---	---	None	Brief	Rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
				Ft	Ft	Ft				
KxkC2:										
Knobcreek-----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Navilleton----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
KxlC3:										
Knobcreek-----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Haggatt-------------------	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Caneyville----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
KxlE3:										
Knobcreek-----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Haggatt-------------------	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Caneyville----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
KxmE2:										
Knobcreek-----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Haggatt-------------------	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Caneyville----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
KxoC2:										
Knobcreek-----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Navilleton----------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
KxoC2:										
Haggatt	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
KxpD2:										
Knobcreek	C	High								
			Jan-Dec	---	---	---	---	None	---	None
Haggatt	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Caneyville	C	High								
			Jan-Dec	---	---	---	---	None	---	None
LpoAK:										
Lindside	B	Negligible								
			January	1.5-2.5	>6.0	---	---	None	Brief	Occasional
			February	1.5-2.5	>6.0	---	---	None	Brief	Occasional
			March	1.5-2.5	>6.0	---	---	None	Brief	Occasional
			April	1.5-2.5	>6.0	---	---	None	Brief	Occasional
			May	2.5-4.5	>6.0	---	---	None	Brief	Occasional
			June	3.0-5.0	>6.0	---	---	None	Brief	Occasional
			July	3.5-6.0	>6.0	---	---	None	Brief	Rare
			August	3.5-6.0	>6.0	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
			November	2.5-4.5	>6.0	---	---	None	Brief	Rare
			December	1.5-2.5	>6.0	---	---	None	Brief	Rare
McnGQ:										
Markland	C	Very high								
			January	---	---	---	---	None	Brief	Rare
			February	---	---	---	---	None	Brief	Rare
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Very rare
			August	---	---	---	---	None	Brief	Very rare
			September	---	---	---	---	None	Brief	Very rare
			October	---	---	---	---	None	Brief	Very rare
			November	---	---	---	---	None	Brief	Very rare
			December	---	---	---	---	None	Brief	Very rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
McpC3:										
Markland------------------	C	High								
			Jan-Dec	---	---	---	---	None	---	None
McuDQ:										
Markland------------------	C	High								
			January	---	---	---	---	None	Brief	Rare
			February	---	---	---	---	None	Brief	Rare
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Very rare
			August	---	---	---	---	None	Brief	Very rare
			September	---	---	---	---	None	Brief	Very rare
			October	---	---	---	---	None	Brief	Very rare
			November	---	---	---	---	None	Brief	Very rare
			December	---	---	---	---	None	Brief	Very rare
MhuA:										
McGary--------------------	C	Medium								
			January	0.5-2.0	3.0-4.5	---	---	None	---	None
			February	0.5-2.0	3.0-4.5	---	---	None	---	None
			March	0.5-2.0	3.0-4.5	---	---	None	---	None
			April	0.5-2.0	3.0-4.5	---	---	None	---	None
			May	1.0-3.5	3.5-5.0	---	---	None	---	None
			June	1.0-3.5	3.5-5.0	---	---	None	---	None
			July	3.5-6.0	>6.0	---	---	None	---	None
			August	3.5-6.0	>6.0	---	---	None	---	None
			November	1.0-3.0	3.0-4.5	---	---	None	---	None
			December	0.5-2.0	3.0-4.5	---	---	None	---	None
MhyB2:										
Gatton--------------------	C	Medium								
			January	1.5-3.0	1.7-3.5	---	---	None	---	None
			February	1.5-3.0	1.7-3.5	---	---	None	---	None
			March	1.5-3.0	1.7-3.5	---	---	None	---	None
			April	1.5-3.0	1.7-3.5	---	---	None	---	None
			May	2.0-3.1	2.5-4.0	---	---	None	---	None
			November	2.5-3.0	3.0-3.5	---	---	None	---	None
			December	1.5-2.5	1.7-3.0	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
NaaA:										
Nabb----------------------	C	Medium								
			January	1.5-2.0	2.0-3.3	---	---	None	---	None
			February	1.5-2.0	2.0-3.3	---	---	None	---	None
			March	1.5-2.0	2.0-3.3	---	---	None	---	None
			April	1.5-2.0	2.0-3.3	---	---	None	---	None
			May	2.0-3.5	5.0-6.7	---	---	None	---	None
			June	3.0-4.0	5.0-6.7	---	---	None	---	None
			July	4.0-6.0	>6.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.3	---	---	None	---	None
			December	1.5-2.0	2.0-3.3	---	---	None	---	None
NaaB2:										
Nabb----------------------	C	Medium								
			January	1.5-2.0	2.0-3.3	---	---	None	---	None
			February	1.5-2.0	2.0-3.3	---	---	None	---	None
			March	1.5-2.0	2.0-3.3	---	---	None	---	None
			April	1.5-2.0	2.0-3.3	---	---	None	---	None
			May	2.0-3.5	5.0-6.7	---	---	None	---	None
			June	3.0-4.0	5.0-6.7	---	---	None	---	None
			July	4.0-6.0	>6.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.3	---	---	None	---	None
			December	1.5-2.0	2.0-3.3	---	---	None	---	None
NbhAK:										
Newark--------------------	C	Negligible								
			January	0.5-2.0	>6.0	---	---	None	Brief	Occasional
			February	0.5-2.0	>6.0	---	---	None	Brief	Occasional
			March	0.5-2.0	>6.0	---	---	None	Brief	Occasional
			April	0.5-2.0	>6.0	---	---	None	Brief	Occasional
			May	2.0-4.0	>6.0	---	---	None	Brief	Occasional
			June	2.5-5.0	>6.0	---	---	None	Brief	Occasional
			July	3.0-6.0	>6.0	---	---	None	Brief	Rare
			August	3.0-6.0	>6.0	---	---	None	Brief	Rare
			September	4.0-6.0	>6.0	---	---	None	Brief	Rare
			October	4.0-6.0	>6.0	---	---	None	Brief	Rare
			November	1.5-4.0	>6.0	---	---	None	Brief	Rare
			December	0.5-2.0	>6.0	---	---	None	Brief	Rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
PcrA:										
Pekin---------------------	C	Medium								
			January	1.5-2.0	2.0-3.0	---	---	None	---	None
			February	1.5-2.0	2.0-3.0	---	---	None	---	None
			March	1.5-2.0	2.0-3.0	---	---	None	---	None
			April	1.5-2.0	2.0-3.0	---	---	None	---	None
			May	2.0-3.5	5.0-6.7	---	---	None	---	None
			June	3.0-4.0	5.0-6.7	---	---	None	---	None
			July	4.0-6.0	>6.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.0	---	---	None	---	None
			December	1.5-2.0	2.0-3.0	---	---	None	---	None
PcrB2:										
Pekin---------------------	C	Medium								
			January	1.5-2.0	2.0-3.0	---	---	None	---	None
			February	1.5-2.0	2.0-3.0	---	---	None	---	None
			March	1.5-2.0	2.0-3.0	---	---	None	---	None
			April	1.5-2.0	2.0-3.0	---	---	None	---	None
			May	2.0-3.5	5.0-6.7	---	---	None	---	None
			June	3.0-4.0	5.0-6.7	---	---	None	---	None
			July	4.0-6.0	>6.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.0	---	---	None	---	None
			December	1.5-2.0	2.0-3.0	---	---	None	---	None
PhaA:										
Peoga---------------------	C	Low								
			January	0.0-1.0	3.5-5.0	0.0-0.5	Very brief	Frequent	---	None
			February	0.0-1.0	3.5-5.0	0.0-0.5	Very brief	Frequent	---	None
			March	0.0-1.0	3.5-5.0	0.0-0.5	Very brief	Frequent	---	None
			April	0.0-1.0	3.5-5.0	0.0-0.5	Very brief	Frequent	---	None
			May	0.0-1.5	5.0-6.7	0.0-0.5	Very brief	Frequent	---	None
			June	1.0-3.5	5.0-6.7	0.0-0.5	Very brief	Occasional	---	None
			July	3.5-6.0	>6.0	0.0-0.5	Very brief	Occasional	---	None
			August	3.5-6.0	>6.0	0.0-0.5	Very brief	Occasional	---	None
			September	---	---	0.0-0.5	Very brief	Rare	---	None
			October	---	---	0.0-0.5	Very brief	Rare	---	None
			November	0.0-1.5	3.5-5.0	0.0-0.5	Very brief	Occasional	---	None
			December	0.0-1.0	3.5-5.0	0.0-0.5	Very brief	Frequent	---	None
Pml.										
Pits, quarry										
Ppu.										
Pits, sand and gravel										

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
RctD3:										
Rarden----------------------	C	Very high								
			January	1.0-2.0	1.7-3.3	---	---	None	---	None
			February	1.0-2.0	1.7-3.3	---	---	None	---	None
			March	1.0-2.0	1.7-3.3	---	---	None	---	None
			April	1.0-2.0	1.7-3.3	---	---	None	---	None
			December	1.0-2.0	1.7-3.3	---	---	None	---	None
Coolville-------------------	C	Very high								
			January	1.0-2.0	3.3-5.0	---	---	None	---	None
			February	1.0-2.0	3.3-5.0	---	---	None	---	None
			March	1.0-2.0	3.3-5.0	---	---	None	---	None
			April	1.0-2.0	3.3-5.0	---	---	None	---	None
			May	2.0-3.3	3.3-5.0	---	---	None	---	None
			June	2.5-3.3	3.3-5.0	---	---	None	---	None
			November	2.5-3.3	3.3-5.0	---	---	None	---	None
			December	1.0-2.0	3.3-5.0	---	---	None	---	None
ScbA:										
Sciotoville-----------------	C	Medium								
			January	1.5-2.0	2.0-3.0	---	---	None	---	None
			February	1.5-2.0	2.0-3.0	---	---	None	---	None
			March	1.5-2.0	2.0-3.0	---	---	None	---	None
			April	1.5-2.0	2.0-3.0	---	---	None	---	None
			May	2.0-3.5	5.0-6.7	---	---	None	---	None
			June	3.0-4.0	5.0-6.7	---	---	None	---	None
			July	4.0-6.0	>6.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.0	---	---	None	---	None
			December	1.5-2.0	2.0-3.0	---	---	None	---	None
ScbB2:										
Sciotoville-----------------	C	Medium								
			January	1.5-2.0	2.0-3.0	---	---	None	---	None
			February	1.5-2.0	2.0-3.0	---	---	None	---	None
			March	1.5-2.0	2.0-3.0	---	---	None	---	None
			April	1.5-2.0	2.0-3.0	---	---	None	---	None
			May	2.0-3.5	5.0-6.7	---	---	None	---	None
			June	3.0-4.0	5.0-6.7	---	---	None	---	None
			July	4.0-6.0	>6.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.0	---	---	None	---	None
			December	1.5-2.0	2.0-3.0	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
SceB2:										
Scottsburg----------------	C	Medium								
			January	1.5-3.0	2.0-3.5	---	---	None	---	None
			February	1.5-3.0	2.0-3.5	---	---	None	---	None
			March	1.5-3.0	2.0-3.5	---	---	None	---	None
			April	1.5-3.0	2.0-3.5	---	---	None	---	None
			May	2.0-4.0	2.5-6.7	---	---	None	---	None
			June	2.0-4.0	2.5-6.7	---	---	None	---	None
			November	2.0-3.5	2.5-4.0	---	---	None	---	None
			December	1.5-3.0	2.0-3.5	---	---	None	---	None
SfyB:										
Shircliff-----------------	C	Medium								
			January	1.5-2.5	3.3-5.0	---	---	None	---	None
			February	1.5-2.5	3.3-5.0	---	---	None	---	None
			March	1.5-2.5	3.3-5.0	---	---	None	---	None
			April	1.5-2.5	3.3-5.0	---	---	None	---	None
			May	2.0-3.5	5.0-6.7	---	---	None	---	None
			June	2.5-4.0	5.0-6.7	---	---	None	---	None
			July	4.0-6.0	>6.0	---	---	None	---	None
			November	2.5-3.5	3.3-5.0	---	---	None	---	None
			December	1.5-2.5	3.3-5.0	---	---	None	---	None
SoaB:										
Spickert------------------	C	Medium								
			January	1.5-2.5	1.7-3.0	---	---	None	---	None
			February	1.5-2.5	1.7-3.0	---	---	None	---	None
			March	1.5-2.5	1.7-3.0	---	---	None	---	None
			April	1.5-2.5	1.7-3.0	---	---	None	---	None
			May	2.0-2.5	2.5-3.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.0	---	---	None	---	None
			December	1.5-2.5	1.7-3.0	---	---	None	---	None
SodB:										
Spickert------------------	C	Medium								
			January	1.5-2.5	1.7-3.0	---	---	None	---	None
			February	1.5-2.5	1.7-3.0	---	---	None	---	None
			March	1.5-2.5	1.7-3.0	---	---	None	---	None
			April	1.5-2.5	1.7-3.0	---	---	None	---	None
			May	2.0-2.5	2.5-3.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.0	---	---	None	---	None
			December	1.5-2.5	1.7-3.0	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
SolC2:										
Spickert------------------	C	High								
			January	1.5-2.5	1.7-3.0	---	---	None	---	None
			February	1.5-2.5	1.7-3.0	---	---	None	---	None
			March	1.5-2.5	1.7-3.0	---	---	None	---	None
			April	1.5-2.5	1.7-3.0	---	---	None	---	None
			May	2.0-2.5	2.5-3.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.0	---	---	None	---	None
			December	1.5-2.5	1.7-3.0	---	---	None	---	None
Wrays---------------------	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
StaAQ:										
Steff---------------------	B	Negligible								
			January	1.5-2.5	>6.0	---	---	None	Very brief	Rare
			February	1.5-2.5	>6.0	---	---	None	Very brief	Rare
			March	1.5-2.5	>6.0	---	---	None	Very brief	Rare
			April	1.5-2.5	>6.0	---	---	None	Very brief	Rare
			May	2.5-4.5	>6.0	---	---	None	Very brief	Rare
			June	3.0-5.0	>6.0	---	---	None	Very brief	Rare
			July	3.5-6.0	>6.0	---	---	None	Very brief	Very rare
			August	3.5-6.0	>6.0	---	---	None	Very brief	Very rare
			September	---	---	---	---	None	Very brief	Very rare
			October	---	---	---	---	None	Very brief	Very rare
			November	2.5-4.5	>6.0	---	---	None	Very brief	Very rare
			December	1.5-2.5	>6.0	---	---	None	Very brief	Very rare
StdAQ:										
Stendal-------------------	C	Negligible								
			January	0.5-2.0	>6.0	---	---	None	Very brief	Rare
			February	0.5-2.0	>6.0	---	---	None	Very brief	Rare
			March	0.5-2.0	>6.0	---	---	None	Very brief	Rare
			April	0.5-2.0	>6.0	---	---	None	Very brief	Rare
			May	2.0-4.0	>6.0	---	---	None	Very brief	Rare
			June	2.5-5.0	>6.0	---	---	None	Very brief	Rare
			July	3.0-6.0	>6.0	---	---	None	Very brief	Very rare
			August	3.0-6.0	>6.0	---	---	None	Very brief	Very rare
			September	4.0-6.0	>6.0	---	---	None	Very brief	Very rare
			October	4.0-6.0	>6.0	---	---	None	Very brief	Very rare
			November	1.5-4.0	>6.0	---	---	None	Very brief	Very rare
			December	0.5-2.0	>6.0	---	---	None	Very brief	Very rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
Uaa.										
Udorthents, cut and filled										
UaoAK:										
Udifluvents, cut and filled	---	---								
			January	---	---	---	---	None	Brief	Occasional
			February	---	---	---	---	None	Brief	Occasional
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
			November	---	---	---	---	None	Brief	Rare
			December	---	---	---	---	None	Brief	Rare
Urban land	---	---								
			January	---	---	---	---	None	Brief	Occasional
			February	---	---	---	---	None	Brief	Occasional
			March	---	---	---	---	None	Brief	Occasional
			April	---	---	---	---	None	Brief	Occasional
			May	---	---	---	---	None	Brief	Occasional
			June	---	---	---	---	None	Brief	Occasional
			July	---	---	---	---	None	Brief	Rare
			August	---	---	---	---	None	Brief	Rare
			September	---	---	---	---	None	Brief	Rare
			October	---	---	---	---	None	Brief	Rare
			November	---	---	---	---	None	Brief	Rare
			December	---	---	---	---	None	Brief	Rare
UedA:										
Urban land.										
Aquents, clayey substratum.										

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
UndAY:										
Urban land----------------	---	---								
			January	---	---	---	---	None	Brief	Rare
			February	---	---	---	---	None	Brief	Rare
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Very rare
			August	---	---	---	---	None	Brief	Very rare
			September	---	---	---	---	None	Brief	Very rare
			October	---	---	---	---	None	Brief	Very rare
			November	---	---	---	---	None	Brief	Very rare
			December	---	---	---	---	None	Brief	Very rare
Udifluvents---------------	---	---								
			January	---	---	---	---	None	Brief	Rare
			February	---	---	---	---	None	Brief	Rare
			March	---	---	---	---	None	Brief	Rare
			April	---	---	---	---	None	Brief	Rare
			May	---	---	---	---	None	Brief	Rare
			June	---	---	---	---	None	Brief	Rare
			July	---	---	---	---	None	Brief	Very rare
			August	---	---	---	---	None	Brief	Very rare
			September	---	---	---	---	None	Brief	Very rare
			October	---	---	---	---	None	Brief	Very rare
			November	---	---	---	---	None	Brief	Very rare
			December	---	---	---	---	None	Brief	Very rare
UneC:										
Urban land.										
Udarents, clayey substratum.										
UngB:										
Urban land.										
Udarents, fragipan substratum.										

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
UnkB:										
Urban land.										
Udarents, silty substratum.										
UnlC:										
Urban land.										
Udarents, hard bedrock substratum.										
UnpA:										
Urban land.										
Udarents, loamy substratum.										
UnrD:										
Urban land.										
Udarents, soft bedrock substratum.										
W.										
Water										
WaaAV:										
Wakeland	C	Negligible								
			January	0.5-2.0	>6.0	---	---	None	Very brief	Frequent
			February	0.5-2.0	>6.0	---	---	None	Very brief	Frequent
			March	0.5-2.0	>6.0	---	---	None	Very brief	Frequent
			April	0.5-2.0	>6.0	---	---	None	Very brief	Frequent
			May	2.0-4.0	>6.0	---	---	None	Very brief	Occasional
			June	2.5-5.0	>6.0	---	---	None	Very brief	Occasional
			July	3.0-6.0	>6.0	---	---	None	Very brief	Rare
			August	3.0-6.0	>6.0	---	---	None	Very brief	Rare
			September	4.0-6.0	>6.0	---	---	None	Very brief	Rare
			October	4.0-6.0	>6.0	---	---	None	Very brief	Rare
			November	1.5-4.0	>6.0	---	---	None	Very brief	Rare
			December	0.5-2.0	>6.0	---	---	None	Very brief	Occasional

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
WaaAW:										
Wakeland------------------	C	Negligible								
			January	0.5-2.0	>6.0	---	---	None	Very brief	Occasional
			February	0.5-2.0	>6.0	---	---	None	Very brief	Occasional
			March	0.5-2.0	>6.0	---	---	None	Very brief	Occasional
			April	0.5-2.0	>6.0	---	---	None	Very brief	Occasional
			May	2.0-4.0	>6.0	---	---	None	Very brief	Occasional
			June	2.5-5.0	>6.0	---	---	None	Very brief	Occasional
			July	3.0-6.0	>6.0	---	---	None	Very brief	Rare
			August	3.0-6.0	>6.0	---	---	None	Very brief	Rare
			September	4.0-6.0	>6.0	---	---	None	Very brief	Rare
			October	4.0-6.0	>6.0	---	---	None	Very brief	Rare
			November	1.5-4.0	>6.0	---	---	None	Very brief	Rare
			December	0.5-2.0	>6.0	---	---	None	Very brief	Rare
WhdD2:										
Wellrock------------------	B	Medium								
			Jan-Dec	---	---	---	---	None	---	None
Gnawbone------------------	B	High								
			Jan-Dec	---	---	---	---	None	---	None
Spickert, soft bedrock substratum---------------	C	High								
			January	1.5-2.5	1.7-3.0	---	---	None	---	None
			February	1.5-2.5	1.7-3.0	---	---	None	---	None
			March	1.5-2.5	1.7-3.0	---	---	None	---	None
			April	1.5-2.5	1.7-3.0	---	---	None	---	None
			May	2.0-2.5	2.5-3.0	---	---	None	---	None
			November	2.0-2.5	2.5-3.0	---	---	None	---	None
			December	1.5-2.5	1.7-3.0	---	---	None	---	None

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
WokAV:										
Wilbur--------------------	B	Negligible								
			January	1.5-2.5	>6.0	---	---	None	Very brief	Frequent
			February	1.5-2.5	>6.0	---	---	None	Very brief	Frequent
			March	1.5-2.5	>6.0	---	---	None	Very brief	Frequent
			April	1.5-2.5	>6.0	---	---	None	Very brief	Frequent
			May	2.5-4.5	>6.0	---	---	None	Very brief	Occasional
			June	3.0-5.0	>6.0	---	---	None	Very brief	Occasional
			July	3.5-6.0	>6.0	---	---	None	Very brief	Rare
			August	3.5-6.0	>6.0	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	2.5-4.5	>6.0	---	---	None	Very brief	Rare
			December	1.5-2.5	>6.0	---	---	None	Very brief	Occasional
WokAW:										
Wilbur--------------------	B	Negligible								
			January	1.5-2.5	>6.0	---	---	None	Very brief	Occasional
			February	1.5-2.5	>6.0	---	---	None	Very brief	Occasional
			March	1.5-2.5	>6.0	---	---	None	Very brief	Occasional
			April	1.5-2.5	>6.0	---	---	None	Very brief	Occasional
			May	2.5-4.5	>6.0	---	---	None	Very brief	Occasional
			June	3.0-5.0	>6.0	---	---	None	Very brief	Occasional
			July	3.5-6.0	>6.0	---	---	None	Very brief	Rare
			August	3.5-6.0	>6.0	---	---	None	Very brief	Rare
			September	---	---	---	---	None	Very brief	Rare
			October	---	---	---	---	None	Very brief	Rare
			November	2.5-4.5	>6.0	---	---	None	Very brief	Rare
			December	1.5-2.5	>6.0	---	---	None	Very brief	Rare

Table 20.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Surface runoff	Months	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
				Ft	Ft	Ft				
WomAK:										
Wilhite-------------------	C	Negligible								
			January	0.0-1.0	>6.0	0.0-0.5	Very brief	Frequent	Brief	Occasional
			February	0.0-1.0	>6.0	0.0-0.5	Very brief	Frequent	Brief	Occasional
			March	0.0-1.0	>6.0	0.0-0.5	Very brief	Frequent	Brief	Occasional
			April	0.0-1.0	>6.0	0.0-0.5	Very brief	Frequent	Brief	Occasional
			May	1.5-3.5	>6.0	0.0-0.5	Very brief	Frequent	Brief	Occasional
			June	2.0-4.0	>6.0	0.0-0.5	Very brief	Occasional	Brief	Occasional
			July	3.0-5.0	>6.0	0.0-0.5	Very brief	Occasional	Brief	Rare
			August	3.5-6.0	>6.0	0.0-0.5	Very brief	Occasional	Brief	Rare
			September	5.0-6.0	>6.0	0.0-0.5	Very brief	Rare	Brief	Rare
			October	5.0-6.0	>6.0	0.0-0.5	Very brief	Rare	Brief	Rare
			November	0.5-1.5	>6.0	0.0-0.5	Very brief	Occasional	Brief	Rare
			December	0.0-1.0	>6.0	0.0-0.5	Very brief	Frequent	Brief	Rare

Table 21.--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	Soil slippage potential	Risk of corrosion	
	Kind	Depth to top	Hardness			Uncoated steel	Concrete
		In					
BbhA:							
Bartle-----------	---	---	---	High	---	High	High
BcrAQ:							
Beanblossom------	Paralithic bedrock	40-60	Moderately cemented	High	---	Moderate	Moderate
BcrAW:							
Beanblossom------	Paralithic bedrock	40-60	Moderately cemented	High	---	Moderate	Moderate
BgeAZ:							
Birds------------	---	---	---	High	---	High	Moderate
BlvAW:							
Kintner----------	Lithic bedrock	40-60	Indurated	Moderate	---	Moderate	Moderate
BuoA:							
Bromer-----------	---	---	---	High	---	High	High
CcaG:							
Caneyville-------	Lithic bedrock	20-40	Indurated	Moderate	Medium	High	Moderate
Rock outcrop-----	Lithic bedrock	0	Indurated	---	---	---	---
CkkB2:							
Cincinnati-------	Fragipan	20-36	Noncemented	High	---	Moderate	High
CldC2:							
Cincinnati-------	Fragipan	20-36	Noncemented	High	Low	Moderate	High
Blocher----------	---	---	---	High	Low	High	High
ConC3:							
Coolville--------	Paralithic bedrock	40-60	Moderately cemented	High	Medium	High	High
Rarden-----------	Paralithic bedrock	20-40	Moderately cemented	High	Medium	High	High
CtwB:							
Crider-----------	Lithic bedrock	60-120	Indurated	High	---	Moderate	High
Bedford----------	Fragipan	20-38	Noncemented	High	---	High	High
	Lithic bedrock	80-120	Indurated				
Navilleton-------	Lithic bedrock	60-120	Indurated	High	---	Moderate	High
CwaAQ:							
Cuba-------------	---	---	---	High	---	Moderate	High

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Soil slippage potential	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In					
EepB:							
Elkinsville------	---	---	---	High	---	Moderate	High
EepGQ:							
Elkinsville------	---	---	---	High	Medium	Moderate	High
GgbG:							
Gilwood----------	Lithic bedrock	20-40	Very strongly cemented	Moderate	Medium	Moderate	High
Brownstown-------	Lithic bedrock	20-40	Strongly cemented	Moderate	Medium	Low	High
GgfE2:							
Gilwood----------	Lithic bedrock	20-40	Very strongly cemented	High	Medium	Moderate	High
Wrays------------	Lithic bedrock	40-60	Very strongly cemented	High	Medium	High	High
GmaG:							
Gnawbone---------	Paralithic bedrock	20-40	Moderately cemented	Moderate	High	Moderate	High
Kurtz------------	Paralithic bedrock	40-60	Moderately cemented	High	High	Moderate	High
HcbAQ:							
Hatfield---------	---	---	---	High	---	High	High
HcgAH:							
Haymond----------	---	---	---	High	---	Low	Low
HcgAV:							
Haymond----------	---	---	---	High	---	Low	Low
HcgAW:							
Haymond----------	---	---	---	High	---	Low	Low
HufAK:							
Huntington-------	---	---	---	High	---	Low	Moderate
KxkC2:							
Knobcreek--------	Lithic bedrock	60-120	Indurated	High	Low	High	High
Navilleton-------	Lithic bedrock	60-120	Indurated	High	Low	Moderate	High
KxlC3:							
Knobcreek--------	Lithic bedrock	60-120	Indurated	High	Low	High	High
Haggatt----------	Lithic bedrock	40-60	Indurated	High	Low	High	Moderate
Caneyville-------	Lithic bedrock	20-40	Indurated	Moderate	Low	High	Moderate

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Soil slippage potential	Risk of corrosion	
	Kind	Depth to top	Hardness			Uncoated steel	Concrete
		In					
KxlE3:							
Knobcreek	Lithic bedrock	60-120	Indurated	High	Medium	High	High
Haggatt	Lithic bedrock	40-60	Indurated	High	Medium	High	Moderate
Caneyville	Lithic bedrock	20-40	Indurated	Moderate	Medium	High	Moderate
KxmE2:							
Knobcreek	Lithic bedrock	60-120	Indurated	High	Medium	High	High
Haggatt	Lithic bedrock	40-60	Indurated	High	Medium	High	Moderate
Caneyville	Lithic bedrock	20-40	Indurated	Moderate	Medium	High	Moderate
KxoC2:							
Knobcreek	Lithic bedrock	60-120	Indurated	High	Low	High	High
Navilleton	Lithic bedrock	60-120	Indurated	High	Low	Moderate	High
Haggatt	Lithic bedrock	40-60	Indurated	High	Low	High	Moderate
KxpD2:							
Knobcreek	Lithic bedrock	60-120	Indurated	High	Medium	High	High
Haggatt	Lithic bedrock	40-60	Indurated	High	Medium	High	Moderate
Caneyville	Lithic bedrock	20-40	Indurated	Moderate	Medium	High	Moderate
LpoAK:							
Lindside	---	---	---	High	---	Moderate	Low
McnGQ:							
Markland	---	---	---	High	Medium	High	Moderate
McpC3:							
Markland	---	---	---	Moderate	Medium	High	Moderate
McuDQ:							
Markland	---	---	---	Moderate	Medium	High	Moderate
MhuA:							
McGary	---	---	---	High	---	High	Low
MhyB2:							
Gatton	Fragipan	20-36	Noncemented	High	---	Moderate	High
NaaA:							
Nabb	Fragipan	24-40	Noncemented	High	---	High	High

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer			Potential for frost action	Soil slippage potential	Risk of corrosion	
	Kind	Depth to top	Hardness			Uncoated steel	Concrete
		In					
NaaB2:							
Nabb-------------	Fragipan	24-40	Noncemented	High	---	High	High
NbhAK:							
Newark-----------	---	---	---	High	---	High	Low
PcrA:							
Pekin------------	---	---	---	High	---	High	High
PcrB2:							
Pekin------------	---	---	---	High	---	High	High
PhaA:							
Peoga------------	---	---	---	High	---	High	High
Pml. Pits, quarry							
Ppu. Pits, sand and gravel							
RctD3:							
Rarden-----------	Paralithic bedrock	20-40	Moderately cemented	High	High	High	High
Coolville--------	Paralithic bedrock	40-60	Moderately cemented	High	High	High	High
ScbA:							
Sciotoville------	---	---	---	High	---	Moderate	High
ScbB2:							
Sciotoville------	---	---	---	High	---	Moderate	High
SceB2:							
Scottsburg-------	Lithic bedrock	60-80	Very strongly cemented	High	---	High	High
	Paralithic bedrock	60-72	Weakly cemented				
SfyB:							
Shircliff--------	---	---	---	High	---	High	Moderate
SoaB:							
Spickert---------	Fragipan	20-36	Noncemented	High	---	High	High
	Lithic bedrock	60-80	Very strongly cemented				
SodB:							
Spickert---------	Fragipan	24-36	Noncemented	High	---	High	High
	Lithic bedrock	60-90	Very strongly cemented				

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Hardness	Potential for frost action	Soil slippage potential	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In					
SolC2:							
Spickert	Fragipan	20-36	Noncemented	High	Low	High	High
	Lithic bedrock	50-80	Very strongly cemented				
Wrays	Lithic bedrock	40-60	Very strongly cemented	High	Low	High	High
StaAQ:							
Steff	---	---	---	High	---	Moderate	High
StdAQ:							
Stendal	---	---	---	High	---	High	High
Uaa.							
Udorthents, cut and filled							
UaoAK:							
Udifluvents, cut and filled.							
Urban land.							
UedA:							
Urban land.							
Aquents, clayey substratum.							
UndAY:							
Urban land.							
Udifluvents.							
UneC:							
Urban land.							
Udarents, clayey substratum	---	---	---	---	Low	---	---
UngB:							
Urban land.							
Udarents, fragipan substratum	Fragipan	20-40	Noncemented	---	---	---	---
UnkB:							
Urban land.							
Udarents, silty substratum.							
UnlC:							
Urban land.							

Table 21.--Soil Features--Continued

Map symbol and soil name	Restrictive layer: Kind	Depth to top	Hardness	Potential for frost action	Soil slippage potential	Risk of corrosion: Uncoated steel	Concrete
		In					
UnlC:							
Udarents, hard bedrock substratum	Lithic bedrock	20-80	Strongly cemented	---	Low	---	---
UnpA:							
Urban land.							
Udarents, loamy substratum.							
UnrD:							
Urban land.							
Udarents, soft bedrock substratum	Paralithic bedrock	20-60	Moderately cemented	---	High	---	---
W.							
Water							
WaaAV:							
Wakeland	---	---	---	High	---	Moderate	Low
WaaAW:							
Wakeland	---	---	---	High	---	Moderate	Low
WhdD2:							
Wellrock	Paralithic bedrock	40-60	Moderately cemented	High	High	High	High
Gnawbone	Paralithic bedrock	20-40	Moderately cemented	High	High	Moderate	High
Spickert, soft bedrock substratum	Fragipan	20-36	Noncemented	High	Low	High	High
	Paralithic bedrock	60-90	Moderately cemented				
WokAV:							
Wilbur	---	---	---	High	---	Moderate	Low
WokAW:							
Wilbur	---	---	---	High	---	Moderate	Low
WomAK:							
Wilhite	---	---	---	High	---	High	Moderate

Table 22.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Aquents	Aquents
*Bartle	Fine-silty, mixed, active, mesic Aeric Fragic Epiaqualfs
Beanblossom	Loamy-skeletal, mixed, active, mesic Fluventic Dystrudepts
Bedford	Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs
Birds	Fine-silty, mixed, superactive, nonacid, mesic Typic Fluvaquents
Blocher	Fine-silty, mixed, active, mesic Oxyaquic Hapludalfs
Bromer	Fine-silty, mixed, active, mesic Aeric Fragic Epiaqualfs
Brownstown	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Caneyville	Fine, mixed, active, mesic Typic Hapludalfs
Cincinnati	Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs
Coolville	Fine, mixed, active, mesic Aquultic Hapludalfs
Crider	Fine-silty, mixed, active, mesic Typic Paleudalfs
Cuba	Fine-silty, mixed, active, mesic Fluventic Dystrudepts
Elkinsville	Fine-silty, mixed, active, mesic Ultic Hapludalfs
*Gatton	Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs
Gilwood	Fine-loamy, mixed, semiactive, mesic Typic Hapludults
Gnawbone	Fine-silty, mixed, semiactive, mesic Typic Hapludults
Haggatt	Fine, mixed, active, mesic Typic Hapludalfs
Hatfield	Fine-silty, mixed, active, mesic Aeric Fragic Epiaqualfs
Haymond	Coarse-silty, mixed, superactive, mesic Dystric Fluventic Eutrudepts
Huntington	Fine-silty, mixed, active, mesic Fluventic Hapludolls
Kintner	Loamy-skeletal, mixed, active, mesic Oxyaquic Eutrudepts
Knobcreek	Fine-silty over clayey, mixed, active, mesic Typic Paleudalfs
Kurtz	Fine-silty, mixed, semiactive, mesic Ultic Hapludalfs
Lindside	Fine-silty, mixed, active, mesic Fluvaquentic Eutrudepts
Markland	Fine, mixed, active, mesic Typic Hapludalfs
McGary	Fine, mixed, active, mesic Aeric Epiaqualfs
Nabb	Fine-silty, mixed, active, mesic Aquic Fragiudalfs
Navilleton	Fine-silty, mixed, active, mesic Typic Paleudalfs
Newark	Fine-silty, mixed, active, nonacid, mesic Fluventic Endoaquepts
*Pekin	Fine-silty, mixed, active, mesic Fragiaquic Hapludults
Peoga	Fine-silty, mixed, superactive, mesic Fragic Epiaqualfs
Rarden	Fine, mixed, active, mesic Aquultic Hapludalfs
*Sciotoville	Fine-silty, mixed, active, mesic Fragiaquic Hapludalfs
Scottsburg	Fine-silty, mixed, semiactive, mesic Aquic Hapludults
Shircliff	Fine, mixed, active, mesic Oxyaquic Hapludalfs
Spickert	Fine-silty, mixed, active, mesic Typic Fragiudults
Steff	Fine-silty, mixed, active, mesic Fluvaquentic Dystrudepts
Stendal	Fine-silty, mixed, active, acid, mesic Fluventic Endoaquepts
Udarents	Udarents
Udifluvents	Udifluvents
Udorthents	Udorthents
Wakeland	Coarse-silty, mixed, superactive, nonacid, mesic Aeric Fluvaquents
Wellrock	Fine-silty, mixed, active, mesic Ultic Hapludalfs
Wilbur	Coarse-silty, mixed, superactive, mesic Fluvaquentic Eutrudepts
Wilhite	Fine, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Wrays	Fine-silty, mixed, active, mesic Typic Hapludults

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