United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Illinois Agricultural Experiment Station

Soil Survey of Knox County, Illinois

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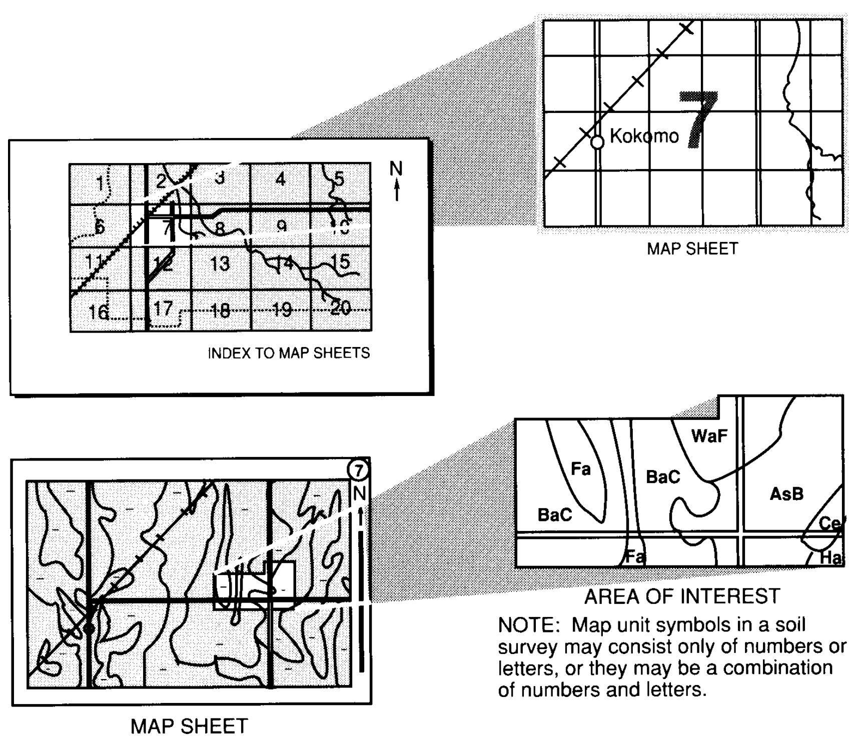
How To Use This Soil Survey

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 map symbols and names also appear as bookmarks, which link directly to the appropriate page in the publication.

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 Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Knox County Soil and Water Conservation District. Financial assistance was provided by Knox County and the Illinois Department of Agriculture.

Major fieldwork for this soil survey was completed in 2002. Soil names and descriptions were approved in 2003. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2003. 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

A protective cover of crop residue in an area of Fayette soils in Knox County, Illinois.

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

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Issued July 2005

Numerical Index to Map Units

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.

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Soil Survey of
Knox County, Illinois

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KNOX COUNTY is in west-central Illinois (fig. 1). It has an area of 461,675 acres, or about 721 square miles. In 2000, the county had a population of 55,836 (U.S. Department of Commerce, 2002). Galesburg, the county seat, had a population of 33,706. Knox County is bordered on the north by Henry County, on the east by Stark and Peoria Counties, on the west by Mercer and Warren Counties, and on the south by Fulton County. Knox County is a subset of Major Land Resource Area (MLRA) 108B, the Illinois and Iowa Deep Loess and Drift, and MLRA 115C, the Central Mississippi Valley Wooded Slopes (USDA, 1981).

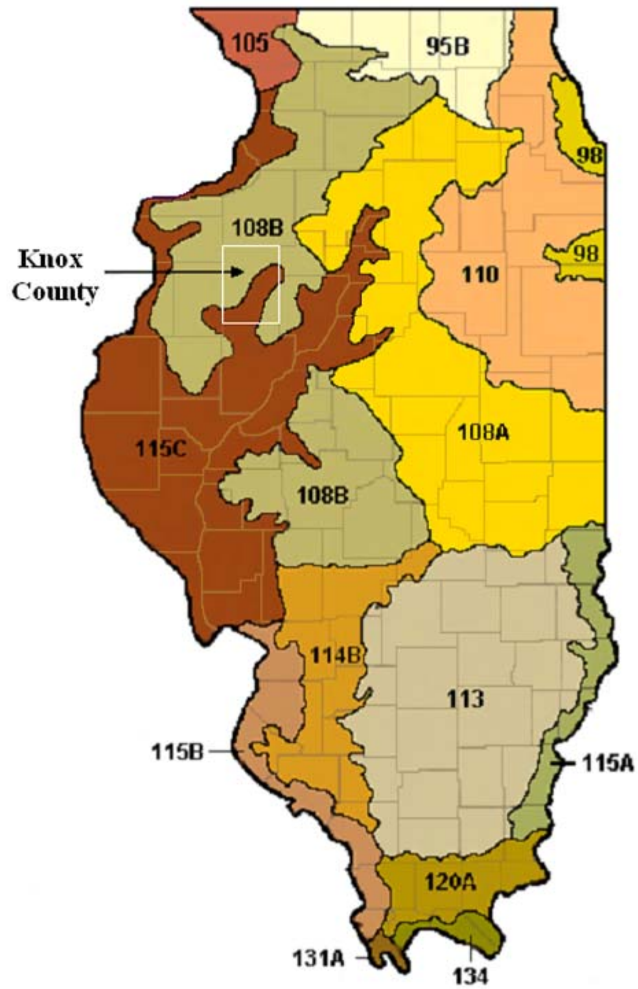
This soil survey updates the prior published surveys of Knox County (Coffey and others, 1904; Hopkins and others, 1913; Fehrenbacher and others, 1977; Windhorn, 1986). It provides additional information and has larger maps, which show the soils in greater detail.

General Nature of the County

This section provides some general information about Knox County. It describes farming; relief, physiography, and drainage; and climate.

Farming

Farming is a major enterprise in Knox County. In 1997, there were 928 operating farms in the county (Illinois Agricultural Statistics Service, 2003). The average farm size is about 420 acres. Much of the grain produced on the farms is fed to livestock. Corn, soybeans, and hay are the main crops produced in the county. In 2002, about 156,100 acres was used for corn, 135,200 acres was used for soybeans, and 14,900 acres was used for hay (Illinois Agricultural Statistics Service, 2003). Hogs and cattle are the main livestock. In 2002, the total number of swine was 113,600 and the total number of cattle was 24,900 (Illinois Agricultural Statistics Service, 2003).



LEGEND

95B—Southern Wisconsin and Northern Illinois Drift Plain
98—Southern Michigan and Northern Indiana Drift Plain
105—Northern Mississippi Valley Loess Hills
108A and 108B—Illinois and Iowa Deep Loess and Drift
110—Northern Illinois and Indiana Heavy Till Plain
113—Central Claypan Area
114B—Southern Illinois and Indiana Thin Loess and Till Plain
115A, 115B, and 115C—Central Mississippi Valley Wooded Slopes
120A—Kentucky and Indiana Sandstone and Shale Hills and Valleys
131A—Southern Mississippi Valley Alluvium
134—Southern Mississippi Valley Silty Uplands

Figure 1.—Location of Knox County and major land resource areas (MLRAs) in Illinois.

Relief, Physiography, and Drainage

Knox County is mainly on a loess-covered Illinoian till plain. Glacial ice, running water, and windblown deposits are the main factors that have determined the landforms in the county (Russell, 1968). The northern and western parts of the county generally are gently rolling to nearly level, but the southern and southeastern parts are much more diverse. The landscape is especially diverse in areas along the Spoon River and its tributaries where erosion has caused a 50- to 200-foot drop in elevation below the general level of the adjacent uplands.

The highest point in the county is about 870 feet above sea level (fig. 2). It is on Pilot Knob in the northwestern part of the county. Pilot Knob is possibly a remnant of the Table Grove recessional moraine, which was deposited by the glacier. The lowest point, at a spot in London Mills where the Spoon River leaves the county, is about 520 feet above sea level.

Below the surface deposits of windblown silt and glacial till are extensive deposits of Pennsylvanian shale. This shale varies in composition and occurs as outcrops, generally near the base of steep slopes. Much of the county is underlain by bituminous coal, which is within the shale deposits. The upper two seams of coal have been surface mined, primarily in the eastern and southern parts of the county.

An elevated ridge cutting across the northwestern part divides the county into two main drainage areas (Russell, 1968). In areas southeast of this ridge, drainage is directed toward the basin of the Illinois River. The Spoon River and its tributaries drain about 588 square miles of the areas in the county that are within this basin. Walnut, French, Haw, Littlers, and Court Creeks are a few of the major tributaries. Kickapoo Creek, which also is in the basin of the Illinois River, drains about 12 square miles in the southeast corner of the county. It empties directly into the Illinois River.

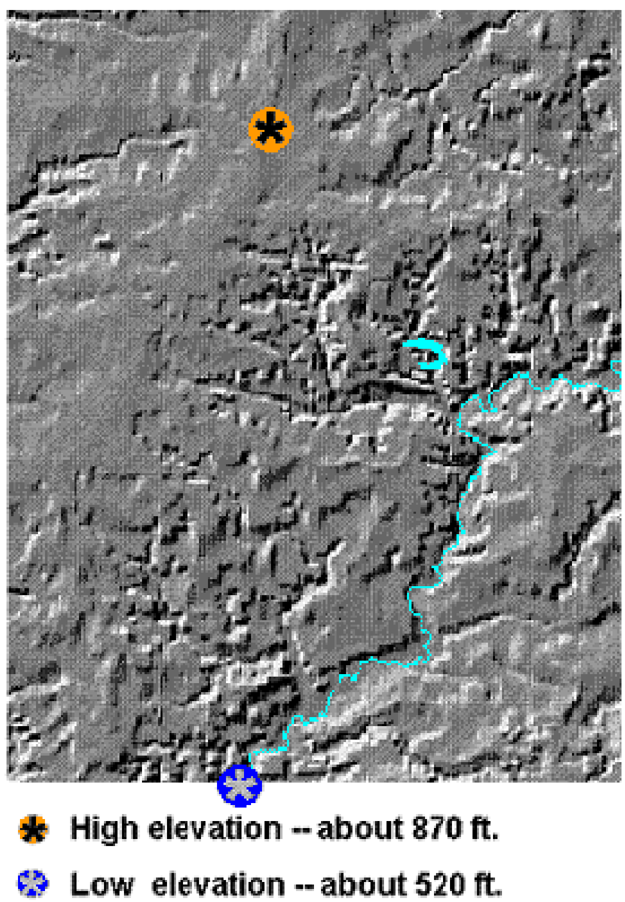


Figure 2.—A shaded relief map of Knox County, Illinois.

In areas northwest of the elevated ridge, drainage is directed toward the basin of the Mississippi River. Pope and Henderson Creeks drain the northwestern part of the county. They empty directly into the Mississippi River. Cedar Fork eventually empties into Henderson Creek outside the county boundaries.

The county has about 2,500 acres of impounded water. Spoon Lake, which is about 580 acres, is the largest impoundment. Lake Storey and Lake Bracken are the other major lakes. The rest of the impounded water is primarily in areas that formerly were surface mined.

Climate

Knox County is cold in winter and quite hot in summer. Occasional cool spells occur in summer. Precipitation during the winter frequently occurs as snowstorms. During the warm months, when warm moist air moves in from the south, the precipitation occurs chiefly in the form of showers, which are often heavy. The total annual rainfall is normally adequate for corn, soybeans, and small grain.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Galesburg, Illinois, in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is about 25 degrees F and the average daily minimum temperature is about 17 degrees. The lowest temperature on record, which occurred at Galesburg on January 10, 1982, is -25 degrees. In summer, the average temperature is almost 73 degrees and the average daily maximum temperature is almost 83 degrees. The highest recorded temperature, which occurred on July 22, 1983, is 102 degrees.

Growing degree days are shown in table 1. They are equivalent to “heat units.” During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual precipitation is about 37 inches. Of this total, about 24 inches, or about 64 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 13 inches. The heaviest 1-day rainfall on record was 7.7 inches at Galesburg on September 8, 1927. Thunderstorms occur on about 50 days each year.

The average seasonal snowfall is about 26 inches. The heaviest 1-day snowfall during the period of record was 11 inches at Galesburg on April 11, 1997. On the average, almost 43 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 60 percent. The sun shines 70 percent of the time possible in summer and 40 percent in winter. The prevailing wind is from the south. Average windspeed is highest, 12 miles per hour, in spring.

How This Survey Was Made

Soil surveys are updated as part of maintenance projects that are conducted for a major land resource area (MLRA) or other region. Maintaining and coordinating soil survey information within a broad area result in uniformly delineated and joined soil maps and in coordinated interpretations and map unit descriptions for areas that have similar physiography, climate, and land use.

Updated soil survey information is coordinated within the major land resource area or other region and meets the standards established and defined in the memorandum of understanding. Soil surveys that are consistent and uniform within a broad area enable the coordination of soil management recommendations and a uniform program application of soil information.

The current survey was made to provide updated information about the soils and miscellaneous areas in Knox County, which is a subset of MLRA 108B and MLRA 115C (fig. 1). Major land resource areas are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and vegetation (USDA, 1981). Map unit design and the detailed soil descriptions are based on the occurrence of each soil throughout the MLRA.

The information in this survey includes a description of the soils and miscellaneous areas and their location and a discussion of their properties and the subsequent effects on suitability, limitations, and management for specified uses.

Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind 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 soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, soil reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile (USDA, 1999). 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. Interpretations are modified as necessary to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a water table within certain depths in most years, but they cannot predict that the water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

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

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

Formation of the Soils

Soil-forming processes act on deposited or accumulated geologic material. The characteristics of the soil at any given point are determined by the parent material, living organisms on and in the soil, the climate, the topography, and the length of time that the forces of soil formation have acted on the soil material (Jenny, 1941).

Climate and living organisms are active factors of soil formation. As they act on the parent material that has accumulated through the weathering of rocks and that may have been relocated by water, glaciers, or wind, they slowly change the material into a natural body that has genetically related horizons. The effects of climate and living organisms are conditioned by topography. The parent material affects the kind of soil profile that forms. Finally, time is needed for changing the parent material into a soil. Usually, a long time is needed for the formation of distinct horizons. The importance of each factor differs from place to place, and each modifies the effect of the other four. In some areas one factor dominates the formation of a soil. Human activities, such as clearing forests, cultivating, and applying fertilizer, also affect soil formation.

Parent Material

Parent material is the geologic material in which a soil forms. Most of the parent materials in Knox County are a direct result of glaciers and sediments of the Wisconsinan and Illinoian Stages (Willman and Frye, 1970). Although the parent materials are all of glacial origin, their properties vary greatly, depending on the method of deposition. The dominant parent materials in the county are till, outwash, alluvium, and loess. In dissected areas where the overlying deposits have been removed, the soils formed in material weathered from shale and siltstone. In recent times surface mining has created a new parent material.

Till is material laid down directly by glaciers with a minimum of water action. It consists of particles of different sizes mixed together. The small pebbles in till generally have distinct edges and corners, indicating that they have not been subject to intense washing by water. The till in Knox County was deposited during the Illinoian Stage. It is generally loam or clay loam. Soils that formed in this material generally are on strongly sloping to very steep side slopes. Hickory soils are examples.

In some areas a very firm layer that has a higher content of clay is in the upper few feet of the Illinoian till. This layer is a paleosol, which formed during the Sangamonian Stage, between the Illinoian and Wisconsinan Stages (Willman and Frye, 1970). During the Sangamonian Stage, the till was the surface deposit. It was subject to soil-forming processes. During the Wisconsinan Stage, these soils were buried by loess deposits. Atlas and Assumption soils are examples of soils that formed in a thin layer of loess and in the underlying till that has a paleosol.

Loess was deposited directly by the wind. It consists of very uniform, calcareous, silt-sized particles. In Knox County the major source of this loess was the Mississippi

River Valley, although many smaller streams also could have been sources. These sediments were exposed to the wind when rivers swollen with glacial meltwater from the Wisconsinan glaciers dried seasonally and the glaciers retreated. Since the sediments in the river valleys were exposed, the predominantly northeasterly winds picked up the loess and transported it many miles. The loess covered the Illinoian till in a relatively uniform layer. In Knox County the loess ranges from 7 to 16 feet in thickness, becoming thinner from the northeast to the southwest (Wascher and others, 1971). Most of the upland soils in the county formed in loess. Examples are Fayette, Ipava, Osco, and Sable soils.

Outwash was deposited by running water from melting glaciers. The size of the particles that make up outwash varies according to the speed of the streams that carried them. When the water slowed down, the coarser textured material was deposited first. The finer particles were carried a greater distance by more slowly moving water. Outwash deposits in Knox County generally occur as layers of loamy sand, sandy loam, and loam. Most of the areas of outwash have been covered by loess. Camden and Harvard soils are examples of soils that formed in loess and in the underlying outwash. They are predominantly in the valley along the Spoon River, where waterflow has been concentrated.

In some areas, outwash has been reworked and translocated by the wind after the initial deposition. These areas are on side slopes in the major river valleys. Alvin soils are examples of soils that formed in sandy windblown material.

Alluvial sediments were deposited mainly during periods of stream overflow. They generally have a silty texture; this texture indicates that uplands were the source of the sediments. The alluvial areas are throughout the county. Their width ranges from 1½ miles along the Spoon River to less than ⅛ mile along the minor streams. In some areas the sediments have buried horizons of darker soil material.

Pennsylvanian shale, sandstone, and siltstone underlie most of the unconsolidated deposits throughout the county (Piskin and Bergstrom, 1975). The thickness of the overlying glacial and alluvial deposits ranges from 200 feet in ancient valleys to less than 1 foot on upland side slopes along the major drainageways where erosion has been intense. In places sandstone is at the top of the bedrock sequence. The shale commonly is relatively soft and can be penetrated with a shovel. It is generally silt loam or silty clay loam and commonly is calcareous (fig. 3). Soils that formed in material weathered from shale are weakly developed. Marseilles soils are examples.

Mine spoil is mixed and reworked overburden material deposited in the surface-mined areas. It is a heterogeneous mixture of till, loess, shale, and siltstone. In some areas layers of replaced soil material overlie the mixed material. The soil material is loam, silt loam, silty clay loam, or clay loam; generally, it is firm or very firm. Commonly, it is calcareous directly below the surface layer. Lenzburg and Rapatee soils formed in the spoil.

Living Organisms

Plants are the principal living organisms affecting the formation of the soils in Knox County. Bacteria, fungi, and earthworms, however, also have affected soil formation. The chief contribution of plant and animal life is the addition of organic matter and nitrogen to the soil. The kind of organic material on and in the soil depends on the kind of plants that grew on the soil. The remains of these plants accumulate in the surface layer, decay, and eventually become organic matter. The roots of the plants provide channels for the downward movement of water through the soil and add organic matter as they decay. Bacteria in the soil help to break down the organic matter and thus help to provide plant nutrients.

The native vegetation in the county was trees and prairie grasses. The sloping soils formed mainly under forests of oak, hickory, and similar trees. The nearly level soils

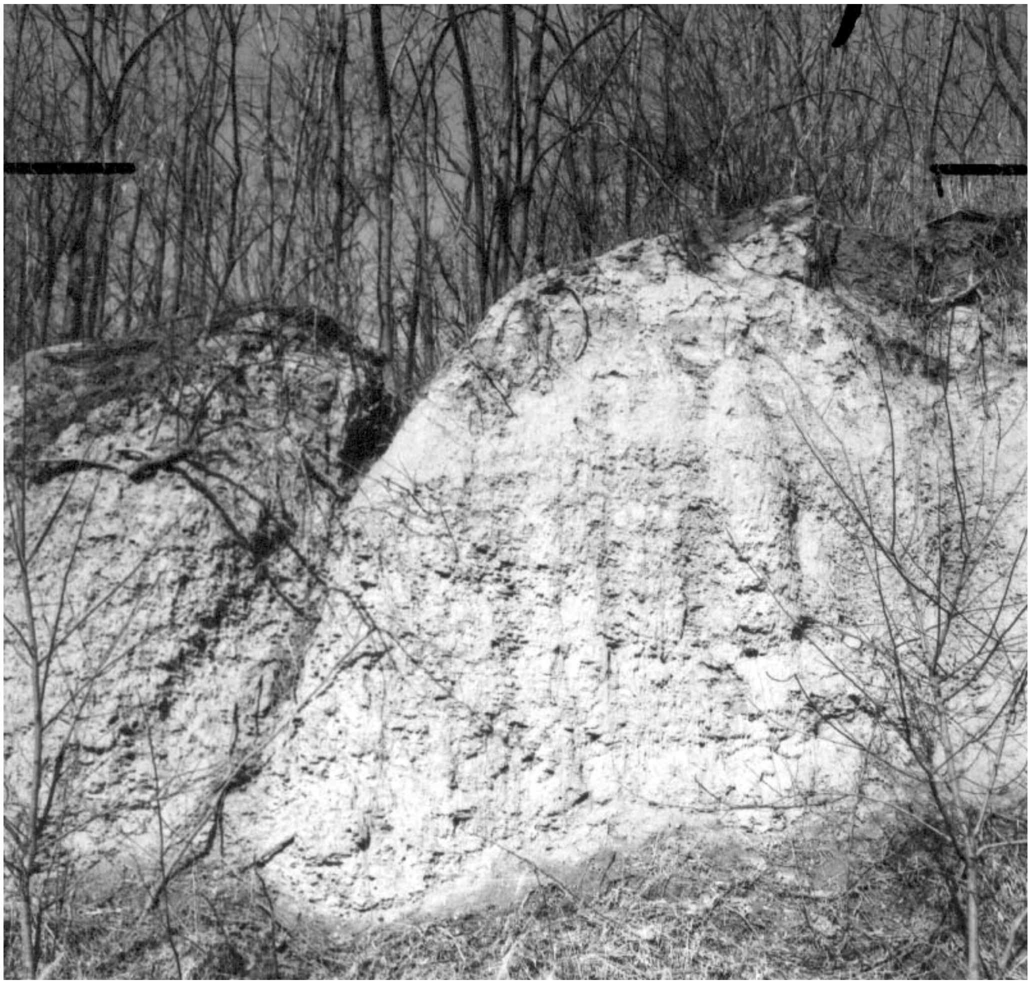


Figure 3.—Loess and till overlying soft, calcareous shale bedrock.

formed under prairie grasses. These soils have a darker and thicker surface layer than that of the soils that formed under forest vegetation. Also, they have a higher content of organic matter. Fayette soils are examples of soils that formed under forest vegetation. Ipava soils are examples of soils that formed under prairie vegetation.

Climate

Climate is an important factor in the formation of soils. It influences the kind of plant and animal life on and in the soil. Precipitation affects the weathering of minerals and the transporting of soil material. Temperature determines the rate of chemical reaction that occurs in the soil. The general climate has had an important overall influence on the characteristics of the soils, but it does not cause major differences among soils in a relatively small area, such as a county.

The climate in Knox County is temperate and humid. It is probably similar to the climate under which the soils formed.

Topography

Topography, or relief, has a marked influence on the soils through its effect on natural drainage, erosion, plant cover, and soil temperature. In Knox County, the slopes dominantly range from 0 to 60 percent. Natural soil drainage ranges from well drained on upland ridgetops to very poorly drained in depressions.

Topography influences the formation of soils by affecting runoff and drainage. Drainage in turn, through its effect on aeration of the soils, determines the color of the soil. Runoff is most rapid on the steeper slopes, but in low areas, water is temporarily ponded. Water and air move freely through well drained soils but slowly through poorly drained soils. In well aerated soils, the iron compounds that give most soils their color are brightly colored. In poorly aerated soils, the colors are gleyed and mottled. Fayette soils are examples of well drained, well aerated soils. Sable soils are examples of poorly drained, poorly aerated soils.

Time

The length of time needed for the formation of a soil depends on the other factors of soil formation. Differences in the length of time that the parent materials have been in place are commonly reflected in the degree of profile development. Soils form more rapidly and are more acid if the parent material is low in the content of calcium (lime). The more rapidly permeable soils form more readily than slowly permeable soils because calcium and other soluble minerals are leached more quickly. Soils form more quickly under forest vegetation than under prairie vegetation because grasses are more efficient in recycling calcium and other bases from the subsoil to the surface layer. Soils generally form more quickly in a humid climate than in a dry climate.

The soils in Knox County range from young to mature. Most of the soils on uplands are moderately developed. The soils in the northern part of the county and on terraces are weakly developed.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. 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 Mollisol.

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 Aquoll (*Aqu*, meaning water, plus *oll*, from Mollisol).

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 Endoaquolls (*Endo*, meaning within, plus *aquoll*, the suborder of the Mollisols 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. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Endoaquolls.

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, superactive, mesic Typic Endoaquolls.

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. The Sable series is a soil series in this survey area.

Table 4 indicates the order, suborder, great group, subgroup, and family of the soil series in the survey area.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each soil series recognized in the survey area is described. Each series description is followed by descriptions of the associated detailed soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 1998). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units 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. More information about each map unit is given under the headings "Use and Management of the Soils" and "Soil Properties."

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

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

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

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

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Hickory silt loam, 10 to 18 percent slopes, eroded, is a phase of the Hickory series.

A map unit is named for the component or components that make up a dominant percentage of the map unit. Many map units consist of one dominant component. These map units are consociations. Sable silty clay loam, 0 to 2 percent slopes, is an example.

Some map units are made up of two or more dominant components. These map units are called complexes. A *complex* consists of two or more components in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The components of a complex cannot be mapped separately at the scale of mapping. Attempting to delineate the individual components of a complex would result in excessive clutter that could make the map illegible. The pattern and proportion of the components in a complex are somewhat similar in all areas. Ipava-Sable complex, 0 to 2 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, gravel, is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables (see Contents) 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.

Alvin Series

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Alvin fine sandy loam, 1 to 5 percent slopes, at an elevation of about 660 feet; Vermilion County, Illinois; about 2,320 feet south and 1,760 feet east of the northwest corner of sec. 32, T. 21 N., R. 11 W.; USGS Danville NE topographic quadrangle; lat. 40 degrees 14 minutes 08 seconds N. and long. 87 degrees 36 minutes 58 seconds W., NAD 27:

Ap—0 to 8 inches; brown (10YR 4/3) fine sandy loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; moderately acid; abrupt smooth boundary.

BE—8 to 11 inches; dark yellowish brown (10YR 4/4) fine sandy loam; weak fine subangular blocky structure; very friable; few distinct grayish brown (10YR 5/2) silt coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—11 to 15 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate fine subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—15 to 25 inches; dark yellowish brown (10YR 4/4) fine sandy loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

E and Bt—25 to 74 inches; yellowish brown (10YR 5/4) loamy fine sand (E); weak medium subangular blocky structure; very friable; dark yellowish brown (10YR 4/6) fine sandy loam (Bt); 3 to 10 percent of volume; occurs as common or many thin lamellae; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; strongly acid; clear smooth boundary.

C—74 to 80 inches; 80 percent brown (10YR 4/3) and 20 percent yellowish brown (10YR 5/6), stratified fine sandy loam; massive; friable; moderately acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to more than 80 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4; value of 3 where the A horizon is less than 6 inches thick
Chroma—1 to 4
Texture—fine sandy loam, sandy loam, or very fine sandy loam

E, EB, or BE horizon (if it occurs):
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 4
Texture—very fine sandy loam, fine sandy loam, sandy loam, or loamy fine sand

Bt horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—very fine sandy loam, loam, fine sandy loam, or sandy loam; includes thin layers of sandy clay loam

E part of E and Bt or Bt and E horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—2 to 6
Texture—sandy loam, loamy sand, or sand or the fine or very fine analogs of these textures

Bt part of E and Bt or Bt and E horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, fine sandy loam, very fine sandy loam, loamy sand, fine loamy sand, very fine loamy sand, or loam

BC or C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—sandy loam, loamy sand, or sand or the fine or very fine analogs of these textures

131B—Alvin sandy loam, 2 to 5 percent slopes

Setting

Landform: Terraces, hills, and dunes
Position on the landform: Shoulders and summits

Map Unit Composition

Alvin and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner subsoil than that of the Alvin soil and contain less clay
- Soils underlain by material containing more silt and less clay than that underlying the Alvin soil
- Soils that have a thicker and darker surface layer than that of the Alvin soil
- Soils that have slopes of more than 5 percent

Dissimilar soils:
- Soils that have a darker surface layer than that of the Alvin soil and have a seasonal high water table within 6 feet of the surface

Properties and Qualities of the Alvin Soil

Parent material: Eolian and alluvial loamy and sandy materials
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 8.9 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Very low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

131D—Alvin sandy loam, 10 to 18 percent slopes

Setting

Landform: Terraces, hills, and dunes
Position on the landform: Shoulders and backslopes

Map Unit Composition

Alvin and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner subsoil than that of the Alvin soil and contain less clay
- Soils underlain by material containing more silt and less sand than that underlying the Alvin soil
- Soils underlain by till

Dissimilar soils:
- The moderately well drained Elco soils in positions similar to those of the Alvin soil

Properties and Qualities of the Alvin Soil

Parent material: Eolian and alluvial loamy and sandy materials
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 8.8 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Low
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

131F—Alvin sandy loam, 18 to 35 percent slopes

Setting

Landform: Dunes, hills, and terraces
Position on the landform: Backslopes

Map Unit Composition

Alvin and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner subsoil than that of the Alvin soil and contain less clay
- Soils underlain by material containing more silt and less sand than that underlying the Alvin soil

Dissimilar soils:
- The moderately well drained Elco soils in positions similar to those of the Alvin soil

Properties and Qualities of the Alvin Soil

Parent material: Eolian and alluvial loamy and sandy materials
Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 8.9 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Low
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Assumption Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Taxadjunct features: The Assumption soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils.

Typical Pedon

Assumption silt loam, 2 to 5 percent slopes, at an elevation of 720 feet; Henry County, Illinois; 100 feet north and 300 feet east of the southwest corner of sec. 29, T. 15 N., R. 2 E.; USGS Andover topographic quadrangle; lat. 41 degrees 15 minutes 00 seconds N. and long. 90 degrees 17 minutes 57 seconds W., NAD 27:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; many fine roots throughout; neutral; abrupt smooth boundary.
A—6 to 13 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many fine roots throughout; slightly acid; clear smooth boundary.
AB—13 to 16 inches; very dark grayish brown (10YR 3/2) silt loam mixed with some brown (10YR 4/3) in the lower 2 inches, grayish brown (10YR 5/2) and brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; many fine roots throughout; neutral; clear wavy boundary.
Bt1—16 to 26 inches; brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots between peds; many faint brown (10YR 5/3) clay films on faces of peds; slightly acid; clear wavy boundary.
Bt2—26 to 35 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots between peds; many faint brown (10YR 4/3) clay films on faces of peds; many medium distinct brownish yellow (10YR 6/6) masses of iron accumulation and common faint grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; abrupt wavy boundary.

2Bt3—35 to 51 inches; yellowish brown (10YR 5/4) clay loam; weak medium subangular blocky structure; firm; common fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; many coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation; common medium prominent light olive gray (5Y 6/2) iron depletions; slightly acid; clear wavy boundary.

2Bt4—51 to 60 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots between peds; many faint brown (10YR 4/3) clay films on faces of peds; many medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; slightly acid; clear wavy boundary.

2C—60 to 80 inches; brown (10YR 5/3) clay loam; massive; firm; common coarse faint grayish brown (2.5Y 5/2) iron depletions and common coarse faint brown (7.5YR 4/4) masses of iron accumulations in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Thickness of the solum: 48 to more than 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

Bt horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—silty clay loam or silt loam
Reaction—strongly acid to neutral

2Btg or 2Bt horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 6
Texture—clay loam, silty clay loam, loam, clay, or silty clay
Reaction—strongly acid to neutral

2C or 2Cg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 6
Texture—clay loam, silty clay loam, loam, clay, or silty clay
Reaction—slightly acid to moderately alkaline

259C2—Assumption silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Assumption and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer than that of the Assumption soil
- Soils that formed entirely in loess or entirely in loamy till
- Soils in which the loess is less than 20 inches thick
- Soils in which the lower part of the loess mantle above the till is calcareous

Dissimilar soils:
- The poorly drained Coatsburg soils in positions similar to those of the Assumption soil
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Assumption Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.6 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
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

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

259D2—Assumption silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Assumption and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer than that of the Assumption soil
- Soils that formed entirely in loess or entirely in loamy till
- Soils in which the loess is less than 20 inches thick
- Soils in which the lower part of the loess mantle above the till is calcareous

Dissimilar soils:
- The poorly drained Coatsburg soils in positions similar to those of the Assumption soil
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Assumption Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
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

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

259D3—Assumption silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders, backslopes

Map Unit Composition

Assumption and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer than that of the Assumption soil

- Soils that formed entirely in loess or entirely in loamy till
- Soils in which the loess is less than 20 inches thick
- Soils in which the lower part of the loess mantle above the till is calcareous

Dissimilar soils:
- The poorly drained Coatsburg soils in positions similar to those of the Assumption soil
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Assumption Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.8 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost more than 75 percent of the original surface layer. The plow layer consists largely of 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

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Atlas Series

Taxonomic classification: Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs

Typical Pedon

Atlas silt loam, 5 to 10 percent slopes, eroded, at an elevation of 665 feet; Adams County, Illinois; 1,200 feet west and 50 feet south of the northeast corner of sec. 7, T. 1 N., R. 6 W.; USGS Coatsburg topographic quadrangle; lat. 40 degrees 05 minutes 40 seconds N. and long. 91 degrees 07 minutes 52 seconds W., NAD 27:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable; common very fine and fine roots; common medium prominent strong brown (7.5YR 5/8) and few fine distinct yellowish brown (10YR 5/6) masses of iron throughout; few fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout; slightly acid; clear smooth boundary.

BE—7 to 13 inches; brown (10YR 5/3) silty clay loam, light brownish gray (10YR 6/2) dry; weak medium subangular blocky structure; friable; common fine roots; few fine distinct light brownish gray (10YR 6/2) clay depletions throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron throughout; slightly acid; clear wavy boundary.

2Btg1—13 to 26 inches; dark gray (10YR 4/1) silty clay loam; moderate thick platy structure parting to weak fine subangular blocky; firm; common fine and few medium roots; common distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) masses of iron and few fine distinct white (10YR 8/1) masses of barite throughout; moderately acid; clear wavy boundary.

2Btg2—26 to 37 inches; 87 percent dark gray (10YR 4/1) and 10 percent gray (10YR 5/1) silty clay; weak medium prismatic structure; firm; common fine and medium roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine prominent yellowish brown (10YR 5/6) masses of iron and few fine distinct white (10YR 8/1) masses of barite throughout; 1 percent rounded gravel and 1 percent subangular limestone-cherty gravel; neutral; clear wavy boundary.

2Btg3—37 to 47 inches; gray (2.5Y 5/1) silty clay; weak coarse prismatic structure; firm; common fine roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) masses of iron throughout and few fine faint gray (10YR 6/1) iron depletions and few fine distinct white (10YR 8/1) masses of barite throughout; 1 percent angular gravel; neutral; clear wavy boundary.

2Btg4—47 to 61 inches; gray (2.5Y 5/1) clay loam; weak coarse prismatic structure; firm; common very fine roots; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; few fine distinct black (2.5Y 2.5/1) masses of iron and manganese and few fine distinct white (10YR 8/1) barite crystals throughout; 1 percent limestone-cherty gravel and 1 percent rounded igneous-granite gravel; neutral; clear wavy boundary.

2BCg—61 to 80 inches; light brownish gray (2.5Y 6/2) clay loam; weak coarse prismatic structure; firm; few fine distinct yellowish brown (10YR 5/6) and common medium prominent brownish yellow (10YR 6/8) masses of iron throughout; 2 percent limestone-cherty gravel; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: More than 42 inches

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—1 to 4
Texture—silt loam, loam, silty clay loam, or clay loam

E or BE horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 4
Texture—silt loam or silty clay loam

Bt, Btg, or 2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 3
Texture—clay loam, clay, silty clay loam, or silty clay
Content of rock fragments—0 to 5 percent

2Cg horizon (if it occurs):
Hue—10YR, 7.5YR, 5Y, or N
Value—4 to 6
Chroma—0 to 6
Texture—silty clay loam, clay loam, or loam
Content of rock fragments—2 to 15 percent

7D3—Atlas silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Atlas and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Atlas soil
- Soils that have slopes of less than 10 percent

Dissimilar soils:
- The moderately well drained Elco soils in positions similar to those of the Atlas soil
- The well drained Hickory soils on the lower backslopes

Properties and Qualities of the Atlas Soil

Parent material: Paleosol that formed in till
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow or slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 7.9 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 0.5 foot, January through May
Flooding: None
Accelerated erosion: This soil has lost more than 75 percent of the original surface layer. The plow layer consists largely of subsoil material.
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: Moderate

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Camden Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Camden silt loam, 0 to 2 percent slopes, at an elevation of 560 feet; Bureau County, Illinois; 1,280 feet west and 1,740 feet south of the northeast corner of sec. 12, T. 15 N., R. 8 E.; USGS Wyanet topographic quadrangle; lat. 41 degrees 18 minutes 05 seconds N. and long. 89 degrees 30 minutes 52 seconds W., NAD 27:

Ap—0 to 7 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; few fine roots; slightly acid; abrupt smooth boundary.

E—7 to 12 inches; yellowish brown (10YR 5/4) silt loam; weak medium platy structure parting to weak fine subangular blocky; friable; few fine roots; neutral; clear smooth boundary.

Bt1—12 to 18 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; neutral; clear smooth boundary.

Bt2—18 to 26 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt3—26 to 34 inches; yellowish brown (10YR 5/6) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt4—34 to 37 inches; strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; friable; few fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; about 7 percent gravel; slightly acid; clear smooth boundary.

2Bt5—37 to 48 inches; strong brown (7.5YR 5/6) sandy clay loam; 1-inch strata of yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay films on faces of peds; about 5 percent gravel; slightly acid; clear smooth boundary.

2Bt6—48 to 53 inches; strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay films bridging sand grains; about 2 percent gravel; neutral; clear wavy boundary.

2C—53 to 60 inches; brown (7.5YR 4/4) sandy loam that has thin strata of loamy sand; single grain; loose; about 5 percent gravel; neutral.

Range in Characteristics

Thickness of the loess: 24 to 40 inches
Depth to the base of the diagnostic horizon: 30 to 65 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5; value of 3 where the horizon is less than 6 inches thick
Chroma—2 or 3
Texture—silt loam

E horizon:
Hue—10YR
Value—4 to 6

Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—10YR or 7.5YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

2Bt or 2BC horizon:
Hue—10YR, 7.5YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam, clay loam, loam, sandy loam, sandy clay loam, or silt loam
Content of rock fragments—0 to 10 percent

2C horizon:
Hue—10YR or 7.5YR
Value—4 to 6
Chroma—3 to 6
Texture—stratified sandy loam, loam, silt loam, loamy sand, sandy clay loam, and clay loam
Content of rock fragments—0 to 10 percent

134B—Camden silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits

Map Unit Composition

Camden and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Camden soil
- Soils that have slopes of less than 2 percent
- Soils that have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- Poorly drained, nearly level or depressional soils

Properties and Qualities of the Camden Soil

Parent material: Loess and outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.4 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Flooding: None

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

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

134C2—Camden silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Shoulders and backslopes

Map Unit Composition

Camden and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Camden soil
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have more clay in the surface layer than the Camden soil
- Soils that formed entirely in loess

Dissimilar soils:
- The somewhat poorly drained Virgil soils on summits or in low areas

Properties and Qualities of the Camden Soil

Parent material: Loess and outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 9.4 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost more than 75 percent of the original surface layer. The plow layer consists largely of subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

134D2—Camden silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Backslopes and shoulders

Map Unit Composition

Camden and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have slopes of more than 18 percent
- Soils in which the loess mantle is less than 20 inches thick over the loamy material

Dissimilar soils:
- The moderately well drained Elco soils in positions similar to those of the Camden soil

Properties and Qualities of the Camden Soil

Parent material: Loess and outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 9.4 inches
Content of organic matter in the surface layer: 1.0 to 2.5 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost more than 75 percent of the original surface layer. The plow layer consists largely of subsoil material.
Potential for frost action: High
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Clarksdale Series

Taxonomic classification: Fine, smectitic, mesic Udollic Endoaqualfs

Typical Pedon

Clarksdale silt loam, 0 to 2 percent slopes, at an elevation of 650 feet; Adams County, Illinois; 800 feet south and 550 feet east of the northwest corner of sec. 16, T. 2 N., R. 7 W.; USGS Lorraine topographic quadrangle; lat. 40 degrees 09 minutes 55 seconds N. and long. 91 degrees 13 minutes 18 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thin platy structure parting to weak fine subangular blocky; friable; common fine roots throughout; neutral; abrupt smooth boundary.

E—8 to 12 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots throughout; many faint very dark grayish brown (10YR 3/2) organic coats on faces of peds and in pores; few fine prominent yellowish brown (10YR 5/6) iron concentrations lining root channels and/or pores; few fine distinct black (2.5Y 2.5/1) masses of iron and manganese throughout; many fine distinct light gray (10YR 7/1 and 7/2) clay depletions between peds; neutral; clear smooth boundary.

BE—12 to 16 inches; grayish brown (10YR 5/2) silt loam; moderate fine subangular blocky structure; friable; few fine roots throughout; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pores; few fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout; common fine prominent yellowish brown (10YR 5/6) masses of iron throughout; common fine faint light gray (10YR 7/1) clay depletions between peds; moderately acid; clear smooth boundary.

Bt1—16 to 23 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine and fine roots throughout; many faint dark grayish brown (10YR 4/2) clay films on faces of peds and many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; common fine prominent black (2.5Y 2.5/1) masses of iron and manganese and common fine distinct yellowish brown (10YR 5/6) masses of iron throughout; moderately acid; clear smooth boundary.

Bt2—23 to 31 inches; brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots throughout; many faint grayish brown (10YR 5/2) clay films on faces of peds and many distinct very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; many fine distinct yellowish brown (10YR 5/6) and few fine prominent strong brown (7.5YR 5/6) masses of iron throughout; common fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout and common fine faint light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; gradual wavy boundary.

Btg1—31 to 47 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; few fine roots throughout; common faint grayish brown (10YR 5/2) clay films on faces of peds and many prominent very dark gray (10YR 3/1) organo-clay films on faces of peds and in pores; many fine and medium prominent strong brown (7.5YR 5/6) masses of iron throughout; few fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout; few fine faint light brownish gray (10YR 6/2) iron depletions lining root channels and/or pores; neutral; gradual wavy boundary.

Btg2—47 to 57 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; firm; few fine roots throughout; common distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium prominent strong brown (7.5YR 5/6) masses of iron; few fine prominent black (2.5Y 2.5/1) masses of iron and manganese throughout; neutral; clear wavy boundary.

BCg—57 to 67 inches; light brownish gray (2.5Y 6/2) silt loam; weak coarse subangular blocky structure; firm; common distinct dark grayish brown (10YR 4/2) clay films in root channels and/or pores; common medium prominent strong brown (7.5YR 5/6) and common medium prominent yellowish red (5YR 5/6) masses of iron throughout; neutral; clear wavy boundary.

Cg—67 to 80 inches; light brownish gray (10YR 6/2) silt loam; massive; friable; few faint dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many medium prominent yellowish red (5YR 4/6) and common medium prominent strong brown (7.5YR 5/6) masses of iron throughout; neutral.

Range in Characteristics

Depth to carbonates: More than 40 inches
Depth to the base of the argillic horizon: 40 to 60 inches

Ap or A horizon:
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

E or BE horizon:
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silty clay loam or silty clay

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam, silty clay, or silt loam

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2

257A—Clarksdale silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Map Unit Composition

Clarksdale and similar soils: 93 percent
Dissimilar soils: 7 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer than that of the Clarksdale soil
- Soils that have a thicker surface layer than that of the Clarksdale soil and a darker subsurface layer
- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Denny soils, which are subject to ponding; in depressions

Properties and Qualities of the Clarksdale Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

9257A—Clarksdale silt loam, terrace, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Map Unit Composition

Clarksdale and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer than that of the Clarksdale soil
- Soils that have a thicker surface layer than that of the Clarksdale soil and a darker subsurface layer
- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Denny soils, which are subject to ponding; in depressions
- Soils that are subject to rare flooding; on footslopes

Properties and Qualities of the Clarksdale Soil

Parent material: Loess or other silty material
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate

Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.4 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Coatsburg Series

Taxonomic classification: Fine, smectitic, mesic Vertic Argiaquolls

Typical Pedon

Coatsburg silt loam, 5 to 10 percent slopes, eroded, at an elevation of 700 feet; Adams County, Illinois; 2,550 feet east and 2,400 feet north of the southwest corner of sec. 20, T. 2 N., R. 5 W.; USGS Augusta topographic quadrangle; lat. 40 degrees 08 minutes 31 seconds N. and long. 91 degrees 70 minutes 25 seconds W., NAD 27:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many fine and medium roots; moderately acid; abrupt smooth boundary.

AB—6 to 10 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium subangular blocky structure parting to moderate fine subangular blocky; firm; common fine roots; few patchy prominent light gray (10YR 7/1) (dry) clay depletions on faces of peds; common fine prominent irregular strong brown (7.5YR 5/6) masses of iron oxide throughout; many fine prominent irregular light olive brown (2.5Y 5/4) masses of iron oxide throughout; moderately acid; clear wavy boundary.

2Btg1—10 to 14 inches; dark grayish brown (10YR 4/2) silty clay loam; weak medium subangular blocky structure; firm; few fine roots; common continuous distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common discontinuous distinct dark gray (10YR 4/1) clay films on faces of peds; common fine prominent irregular strong brown (7.5YR 5/6) and many fine prominent irregular light olive brown (2.5Y 5/4) masses of iron oxide throughout; moderately acid; clear wavy boundary.

2Btg2—14 to 19 inches; grayish brown (10YR 5/2) silty clay; weak coarse prismatic structure parting to weak medium subangular blocky; firm; few fine and medium roots; common discontinuous distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; many fine prominent irregular strong brown (7.5YR 5/6) masses of iron oxide throughout; common fine faint irregular light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear wavy boundary.

2Btg3—19 to 26 inches; grayish brown (10YR 5/2) silty clay loam; weak very coarse prismatic structure; firm; few fine roots; few patchy distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; common discontinuous distinct gray

(10YR 5/1) clay films on faces of peds; common fine and medium prominent irregular strong brown (7.5YR 5/6) masses of iron oxide throughout; many fine faint irregular light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear wavy boundary.

2Btg4—26 to 38 inches; grayish brown (10YR 5/2) silty clay loam; weak very coarse prismatic structure; firm; few very fine roots; few discontinuous distinct gray (10YR 5/1) clay films on faces of peds and in pores; common fine and medium prominent irregular black (2.5Y 2.5/1) masses of iron and manganese oxide throughout; common fine and medium prominent irregular strong brown (7.5YR 5/6) masses of iron oxide throughout; many fine and medium faint irregular light brownish gray (10YR 6/2) iron depletions throughout; moderately acid; clear wavy boundary.

2Btg5—38 to 45 inches; light brownish gray (10YR 6/2) silty clay loam; moderate very coarse prismatic structure; firm; few discontinuous distinct dark gray (10YR 4/1) clay films lining root channels and pores; common discontinuous distinct grayish brown (10YR 5/2) clay films on faces of peds; common patchy prominent light gray (10YR 7/2) clay depletions on faces of peds; common medium prominent irregular brownish yellow (10YR 6/8) masses of iron oxide throughout; slightly acid; clear wavy boundary.

2Btg6—45 to 62 inches; gray (10YR 6/1) silty clay loam; moderate very coarse prismatic structure; firm; many continuous prominent light gray (10YR 7/2) clay depletions on faces of peds; common continuous distinct gray (10YR 5/1) clay films on faces of peds; few medium prominent irregular black (2.5Y 2.5/1) masses of iron and manganese oxide throughout; common medium and coarse prominent irregular brownish yellow (10YR 6/6) masses of iron oxide throughout; slightly acid; clear wavy boundary.

2Btg7—62 to 70 inches; light brownish gray (10YR 6/2) silty clay; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few continuous distinct gray (10YR 6/1) clay films on faces of peds and in pores; common fine prominent irregular black (2.5Y 2.5/1) masses of iron and manganese oxide throughout; many medium prominent irregular strong brown (7.5YR 5/6) masses of iron oxide throughout; 2 percent pressure faces throughout; slightly acid; gradual wavy boundary.

2BCg—70 to 80 inches; gray (10YR 6/1) silty clay; weak very coarse prismatic structure; firm; common fine prominent irregular black (2.5Y 2.5/1) masses of iron and manganese oxide throughout; many coarse prominent irregular brownish yellow (10YR 6/6) masses of iron oxide throughout; slightly acid.

Range in Characteristics

Thickness of the loess: Less than 20 inches
Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of the argillic horizon: 50 to 80 inches

Ap, A, or AB horizon:
Value—2 or 3
Chroma—1 or 2
Texture—silt loam, silty clay loam, or clay loam
Reaction—strongly acid to slightly alkaline (where limed)

Bt, Btg, 2Bt, or 2Btg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2
Texture—clay, clay loam, silty clay, or silty clay loam
Reaction—strongly acid to slightly acid

2BCg or 2Cg horizon (if it occurs):
Hue—10YR, 7.5YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—clay, clay loam, silty clay, silty clay loam, or loam
Reaction—moderately acid to slightly alkaline

660C2—Coatsburg silty clay loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Coatsburg and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner and lighter colored surface layer than that of the Coatsburg soils
- Soils that have slopes of more than 10 percent

Dissimilar soils:
- The moderately well drained Assumption soils in positions similar to those of the Coatsburg soil
- The well drained Hickory soils on the lower backslopes

Properties and Qualities of the Coatsburg Soil

Parent material: Loess and a strongly developed paleosol
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 7.8 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: At the surface, January through May
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Very high
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Hydric

Denny Series

Taxonomic classification: Fine, smectitic, mesic Mollic Albaqualfs

Typical Pedon

Denny silt loam, 0 to 2 percent slopes, at an elevation of 720 feet; McDonough County, Illinois; 225 feet north and 1,680 feet east of the southwest corner of sec. 25, T. 7 N., R. 3 W.; USGS Good Hope topographic quadrangle; lat. 40 degrees 33 minutes 31 seconds N. and long. 90 degrees 41 minutes 14 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine granular structure; very friable; few very fine roots throughout; moderately acid; abrupt smooth boundary.

Eg1—8 to 14 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak thin platy; very friable; few very fine roots throughout; few very fine vesicular pores throughout; few faint very dark gray (10YR 3/1) organic coatings in root channels; common faint grayish brown (10YR 5/2) clay depletions on faces of peds; common fine distinct dark yellowish brown (10YR 3/6) masses of iron and manganese accumulation throughout; few fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; clear smooth boundary.

Eg2—14 to 21 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak thick platy structure parting to moderate medium platy; friable; few very fine roots throughout; few fine tubular pores and few very fine vesicular pores throughout; few faint very dark gray (10YR 3/1) organic coatings in root channels; common fine faint dark brown (10YR 3/3) masses of iron and manganese accumulation throughout; common fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; abrupt smooth boundary.

Btg1—21 to 29 inches; grayish brown (10YR 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots between peds; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few faint very dark gray (10YR 3/1) organic coats in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine distinct yellowish brown (10YR 5/4) masses of iron and manganese accumulation throughout; common fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; clear smooth boundary.

Btg2—29 to 38 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots between peds; common faint dark grayish brown (10YR 4/2) clay films on faces of peds; few faint very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent yellowish brown (10YR 5/8) masses of iron and manganese accumulation throughout; common fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; gradual smooth boundary.

Btg3—38 to 46 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure parting to moderate coarse subangular blocky; firm; very few fine roots between peds; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few prominent very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron and manganese accumulation throughout; common fine prominent black (N 2.5/) iron and manganese concretions in the matrix; moderately acid; gradual wavy boundary.

Cg1—46 to 63 inches; light brownish gray (2.5Y 6/2) silty clay loam; massive; firm; few very fine roots between peds; few very fine vesicular pores throughout; very few prominent very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron and manganese accumulation throughout; few medium prominent black (N 2.5/) iron and manganese concretions in the matrix; slightly acid; diffuse wavy boundary.

Cg2—63 to 80 inches; light brownish gray (2.5Y 6/2) silt loam; massive; firm; many very fine vesicular pores throughout; very few prominent very dark gray (10YR 3/1) organic coatings in root channels; many fine prominent dark yellowish brown (10YR 4/6) and common fine prominent strong brown (7.5YR 5/6) masses of iron and manganese accumulation throughout; few medium prominent black (N 2.5/) iron and manganese concretions in the matrix; slightly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 65 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam or silty clay loam

45A—Denny silt loam, 0 to 2 percent slopes

Setting

Landform: Depressions on ground moraines

Map Unit Composition

Denny and similar soils: 98 percent
Dissimilar soils: 2 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Denny soil and do not have a light-colored subsurface layer
- Soils that have a thinner or lighter colored surface layer than that of the Denny soil

Dissimilar soils:
- The poorly drained Sable soils on summits
- The somewhat poorly drained Clarksdale and Keomah soils on summits

Properties and Qualities of the Denny Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.6 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 0.5 foot during wet periods
Flooding: None
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

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Dorchester Series

Taxonomic classification: Fine-silty, mixed, superactive, calcareous, mesic Typic Udifluvents

Typical Pedon

Dorchester silt loam, at an elevation of 540 feet; Peoria County, Illinois; 1,600 feet east and 1,650 feet south of the northwest corner of sec. 36, T. 10 N., R. 6 E.; USGS Oak Hill topographic quadrangle; lat. 40 degrees 48 minutes 31 seconds N. and long. 89 degrees 46 minutes 11 seconds W., NAD 27:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 6/1) dry; weak medium platy structure parting to weak very fine subangular blocky; friable; few very fine roots; few faint very dark grayish brown (10YR 3/2) organic stains on faces of peds; slightly effervescent; slightly alkaline; abrupt smooth boundary.

C—9 to 32 inches; stratified dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), brown (10YR 5/3), very dark gray (10YR 3/1), and very dark grayish brown (10YR 3/2) silt loam; few thin strata of loam; massive with moderate thin bedding planes resulting from stratification; friable; few very fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.

2Ab1—32 to 43 inches; black (10YR 2/1) silt loam; weak fine subangular blocky structure parting to weak very fine granular; friable; slightly alkaline; gradual smooth boundary.

2Ab2—43 to 60 inches; very dark gray (10YR 3/1) silt loam; moderate fine subangular blocky structure; friable; many faint black (10YR 2/1) organic stains on faces of peds; few fine distinct brown (10YR 4/3) redoximorphic features below a depth of 48 inches; slightly alkaline.

Range in Characteristics

Thickness of the solum: Less than 10 inches
Depth to the 2Ab horizon: 20 to 45 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—2 or 3
Texture—silt loam, loam, or silty clay loam

C horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam; thin strata of loam in some pedons

2Ab horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—clay loam, silt loam, or silty clay loam

8239A—Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Dorchester and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils that have a thicker surface layer than that of the Dorchester soil
- Soils that are not calcareous in all or part of the profile

Dissimilar soils:
- The poorly drained Sawmill soils in the slightly lower positions on flood plains

Properties and Qualities of the Dorchester Soil

Parent material: Alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 13.6 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

536—Dumps, mine

- This map unit consists of nearly level to very steep accumulations of refuse derived from the washing and separation of coal. The refuse consists of shale and siltstone fragments, sandstone cobbles, coal fragments, and loamy cast overburden material. Textures are predominantly loamy. The soil typically is compacted and is extremely acid. Some escarpments are at the edge of the mapped areas.

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

835G—Earthen dams

- This map unit consists of loamy and clayey soil material that has been used to form earthen dams for ponds and lakes. The areas are typically sloping to moderately steep. Level roadways are on the top of some of the larger structures.

Interpretive Groups

Land capability classification: None assigned
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Edinburg Series

Taxonomic classification: Fine, smectitic, mesic Vertic Argiaquolls

Typical Pedon

Edinburg silty clay loam, 0 to 2 percent slopes, at an elevation of 615 feet; Sangamon County, Illinois; 1,200 feet south and 276 feet east of the center of sec. 22, T. 14 N., R. 6 W.; USGS Chatham topographic quadrangle; lat. 39 degrees 38 minutes 37 seconds N. and long. 89 degrees 45 minutes 00 seconds W., NAD 27:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium granular structure; friable; common fine and very fine roots; neutral; abrupt smooth boundary.

A—8 to 10 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate medium granular structure with some moderate very fine subangular blocky; firm; common fine and very fine roots; neutral; clear smooth boundary.

BE—10 to 16 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak and moderate fine subangular blocky structure; firm; common very fine and few fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; few fine yellowish brown (10YR 5/8) concretions of iron and manganese; few fine faint very dark grayish brown (2.5Y 3/2) and few fine distinct olive brown (2.5Y 4/4) and dark grayish brown (2.5Y 4/2) redoximorphic features; neutral; clear smooth boundary.

Btg1—16 to 20 inches; dark gray (10YR 4/1) silty clay loam; moderate fine angular blocky structure; firm; few very fine roots; many distinct very dark gray (10YR 3/1) clay films on faces of peds; few fine concretions of iron and manganese; few fine distinct olive brown (2.5Y 4/4) redoximorphic features; neutral; gradual smooth boundary.

Btg2—20 to 26 inches; dark gray (10YR 4/1) silty clay; moderate medium prismatic structure parting to moderate medium and coarse angular blocky; firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds; common fine concretions of iron and manganese; few fine distinct olive brown (2.5Y 4/4) redoximorphic features; slightly acid; gradual smooth boundary.

Btg3—26 to 34 inches; dark gray (10YR 4/1) silty clay loam; moderate medium prismatic structure parting to moderate coarse angular blocky; firm; few very fine roots; common distinct dark gray (10YR 4/1) clay films and few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine concretions of iron and manganese; common fine distinct yellowish brown (10YR 5/6 and 5/8) redoximorphic features; neutral; gradual smooth boundary.

Btg4—34 to 41 inches; olive gray (5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate coarse angular blocky; firm; few very fine roots; few distinct dark gray (10YR 4/1) clay films and very dark gray (10YR 3/1) organic coatings on vertical faces of peds; few fine concretions of iron and manganese; many fine and medium prominent yellowish brown (10YR 5/6 and 5/8) redoximorphic features; neutral; gradual smooth boundary.

BCg—41 to 55 inches; olive gray (5Y 5/2) silty clay loam; weak medium prismatic structure parting to weak coarse angular blocky; friable; few faint dark gray (10YR 4/1) clay films and very dark gray (10YR 3/1) organic coatings on vertical faces of peds; few fine concretions of iron and manganese; many fine and medium prominent yellowish brown (10YR 5/6 and 5/8) redoximorphic features; neutral; gradual smooth boundary.

C—55 to 60 inches; mottled light olive gray (5Y 6/2) and yellowish brown (10YR 5/6) silt loam; massive; friable; dark gray (10YR 4/1) linings in channels; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of the argillic horizon: 40 to 65 inches

Ap or A horizon:
Value—2 or 3
Chroma—1 or 2
Texture—silty clay loam or silt loam
Reaction—moderately acid to slightly alkaline (in limed areas)

BEg or Eg horizon:
Value—3 or 4
Chroma—1 or 2
Texture—silty clay loam or silt loam
Reaction—moderately acid to neutral

Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam or silty clay
Reaction—moderately acid to neutral

BCg or Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—5 or 6
Chroma—1 or 2
Reaction—slightly acid to slightly alkaline

249A—Edinburg silty clay loam, 0 to 2 percent slopes

Setting

Landform: Depressions on ground moraines

Map Unit Composition

Edinburg and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a thinner surface layer than that of the Edinburg soil and have a lighter colored subsurface layer

Dissimilar soils:
- The poorly drained Sable soils on summits
- The somewhat poorly drained Clarksdale and Keomah soils on summits

Properties and Qualities of the Edinburg Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 3 to 6 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 0.2 foot during wet periods
Flooding: None
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

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Elco Series

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

Typical Pedon

Elco silt loam, 10 to 18 percent slopes, eroded, at an elevation of 730 feet; Warren County, Illinois; 1,900 feet west and 2,000 feet south of the northeast corner of sec. 20, T. 8 N., R. 2 W.; USGS Roseville topographic quadrangle; lat. 40 degrees 40 minutes 11 seconds N. and long. 90 degrees 38 minutes 38 seconds W., NAD 27:

A—0 to 2 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many roots; neutral; clear smooth boundary.

E—2 to 9 inches; brown (10YR 5/3) and dark grayish brown (10YR 4/2) silt loam; moderate thin platy structure; very friable; many roots; common faint very pale brown (10YR 7/3) silt coatings on faces of peds; neutral; abrupt smooth boundary.

Bt1—9 to 18 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular structure; friable; many roots; common faint dark yellowish brown (10YR 4/4) clay films; common distinct very pale brown (10YR 8/3) silt coatings; dark grayish brown (10YR 4/2) krotovina; moderately acid; clear smooth boundary.

Bt2—18 to 26 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; many roots; common faint dark yellowish brown (10YR 4/4) clay films; common distinct very pale brown (10YR 8/3) silt coatings; common prominent black (5YR 2.5/1) stains and concretions of manganese; strongly acid; clear smooth boundary.

2Bt3—26 to 32 inches; light yellowish brown (10YR 6/4) silty clay loam; common medium distinct strong brown (7.5YR 5/6) mottles; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few roots; common faint brown (10YR 5/3) clay films; common faint very pale brown (10YR 8/3) silt coatings; common prominent black (5YR 2.5/1) stains and concretions of manganese; strongly acid; clear smooth boundary.

2Bt4—32 to 45 inches; brown (10YR 5/3) clay; many medium distinct yellowish brown (10YR 5/6) mottles; strong medium and coarse prismatic subangular blocky structure; firm; few roots; many faint grayish brown (10YR 5/2) clay films; many prominent black (5YR 2.5/1) stains and concretions of manganese; strongly acid; clear smooth boundary.

2Btg—45 to 60 inches; grayish brown (2.5Y 5/2) clay; many medium and coarse prominent yellowish brown (10YR 5/6) mottles; moderate medium prismatic structure; firm; few roots; many faint dark grayish brown (2.5Y 4/2) clay films; many prominent black (5YR 2.5/1) stains and concretions of manganese; moderately acid.

Range in Characteristics

Thickness of the loess: 20 to 40 inches
Thickness of the solum: More than 48 inches
Depth to paleosol till: Less than 60 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 4
Texture—silt loam
Reaction—moderately acid to neutral

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4

Texture—silt loam
Reaction—moderately acid to neutral

Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—2 to 6
Texture—silty clay loam or silt loam
Reaction—strongly acid to slightly alkaline

2Bt or 2Btg horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 to 6
Texture—loam, clay loam, silty clay loam, silty clay, or clay
Reaction—strongly acid to slightly alkaline

119D2—Elco silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Elco and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a darker and thicker surface layer than that of the Elco soil
- Soils that have less clay in the subsoil than the Elco soil
- Soils that have more clay in the surface layer than the Elco soil

Dissimilar soils:
- The somewhat poorly drained Atlas soils on nose slopes and in the more eroded areas
- The somewhat poorly drained Lawson soils in drainageways and on flood plains

Properties and Qualities of the Elco Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.2 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

119E2—Elco silt loam, 18 to 25 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Elco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker and thicker surface layer than that of the Elco soil
- Soils that have less clay in the subsoil than the Elco soil
- Soils that have more clay in the surface layer than the Elco soil

Dissimilar soils:
- The somewhat poorly drained Lawson soils in drainageways and on flood plains

Properties and Qualities of the Elco Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 2 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Elkhart Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Elkhart soils in map units 567B2, 567C2, and 567D3 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Elkhart silt loam, 4 to 7 percent slopes, eroded, at an elevation of 570 feet; Logan County, Illinois; 2,060 feet south and 1,248 feet west of the northeast corner of sec. 32, T. 19 N., R. 3 W.; USGS Broadwell topographic quadrangle; lat. 40 degrees 03 minutes 26 seconds N. and long. 89 degrees 26 minutes 58 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine and medium granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.
A—8 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; common very fine roots; slightly acid; clear smooth boundary.
BA—10 to 15 inches; dark brown (10YR 3/3) silty clay loam, brown (10YR 4/3) dry; moderate very fine and fine subangular blocky structure; friable; common very fine roots; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.
Bt1—15 to 22 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; slightly acid; clear smooth boundary.
Bt2—22 to 28 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; few very fine roots; few faint dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.
BCt—28 to 31 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium and coarse subangular blocky structure; friable; few very fine roots; few faint brown (10YR 4/3) clay films on faces of peds; few fine prominent black (5YR 2.5/1) very weakly cemented concretions of manganese with diffuse boundaries in ped interiors; neutral; clear smooth boundary.
C—31 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few very fine roots in the upper 10 inches; common fine prominent strong brown (7.5YR 5/8) masses of iron in ped interiors; common medium distinct gray (10YR 6/1) iron depletions along root channels and pores; strongly effervescent; moderately alkaline.

Range in Characteristics:

Thickness of the mollic epipedon: 10 to 20 inches
Depth to the base of the argillic horizon: 20 to 40 inches
Depth to carbonates: 20 to 40 inches

Ap, A, or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3

Texture—silt loam or silty clay loam
Reaction—moderately acid to slightly alkaline

BA or Bt horizon:
Hue—7.5YR or 10YR
Value—3 to 5
Chroma—3 to 6
Texture—silty clay loam or silt loam
Reaction—moderately acid to neutral

BC horizon:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—silt loam or silty clay loam
Reaction—slightly acid to moderately alkaline

C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 6
Texture—silt or silt loam
Reaction—slightly alkaline to moderately alkaline

567B2—Elkhart silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Elkhart and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that are not calcareous within 40 inches of the surface

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Elkhart Soil

Parent material: Calcareous loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.

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

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

567C2—Elkhart silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Elkhart and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that are not calcareous within 40 inches of the surface
- Soils that are underlain by clayey till within a depth of 60 inches

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Elkhart Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.4 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

567D2—Elkhart silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Elkhart and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that are not calcareous within 40 inches of the surface
- Soils that are underlain by clayey till within a depth of 60 inches

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Elkhart Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.4 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

567D3—Elkhart silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Elkhart and similar soils: 96 percent
Dissimilar soils: 4 percent

Minor Components

Similar soils:
- Soils that are not calcareous within 40 inches of the surface
- Soils that are underlain by clayey till within a depth of 60 inches

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Elkhart Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.3 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost more than 75 percent of the original surface layer. The plow layer consists largely of subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Fayette Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fayette silt loam, 10 to 18 percent slopes, eroded, at an elevation of 680 feet; Warren County, Illinois; 2,100 feet north and 1,700 feet west of the southeast corner of sec. 31, T. 12 N., R. 3 W.; USGS Rozetta topographic quadrangle; lat. 40 degrees 59 minutes 13 seconds N. and long. 90 degrees 46 minutes 18 seconds W., NAD 27:

Ap/E—0 to 5 inches; mixed dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/4) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common fine roots throughout; moderately acid; clear smooth boundary.

EB—5 to 9 inches; mixed brown (10YR 5/3) and yellowish brown (10YR 5/4) silt loam; weak medium platy structure parting to moderate fine subangular blocky; friable; common fine roots between peds; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt1—9 to 13 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; few fine roots between peds;

common faint brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—13 to 27 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—27 to 38 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few distinct dark brown (7.5YR 3/2) accumulations of iron-manganese on faces of peds; moderately acid; gradual wavy boundary.

BC—38 to 55 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and coarse subangular blocky structure; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few distinct dark brown (7.5YR 3/2) accumulations of iron-manganese on faces of peds; moderately acid; clear wavy boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few distinct dark brown (7.5YR 3/2) concretions of iron and manganese throughout the matrix; moderately acid.

Range in Characteristics

Thickness of the solum: 36 to 70 inches
Depth to free carbonates: More than 40 inches

Ap or A horizon:
Hue—10YR
Value—2 to 4
Chroma—1 to 3

E horizon (if it occurs):
Value—3 to 5
Chroma—1 to 4

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6

BC and C horizons:
Hue—10YR
Value—4 or 5
Chroma—4 to 6
Texture—silt loam or silty clay loam

280B—Fayette silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Fayette and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Fayette soil
- Soils that have a seasonal high water table within 6 feet of the surface
- Soils that are calcareous within 40 inches of the surface
- Soils that have slopes of less than 2 percent

Dissimilar soils:
- The somewhat poorly drained Keomah soils on summits

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.6 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

280C2—Fayette silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Fayette and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Fayette soil
- Soils that have a seasonal high water table within 6 feet of the surface
- Soils that are calcareous within 40 inches of the surface

Dissimilar soils:
- The somewhat poorly drained Keomah soils near the head of drainageways

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.4 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

280D2—Fayette silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Fayette and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that are calcareous within 40 inches of the surface
- Soils that are underlain by clayey till within a depth of 60 inches

Dissimilar soils:
- The somewhat poorly drained Orion soils in drainageways

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.4 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

280F—Fayette silt loam, 18 to 35 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Fayette and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that are calcareous within 40 inches of the surface
- Soils that are underlain by clayey till within a depth of 60 inches
- Soils that have thin sandy layers in the underlying material

Dissimilar soils:
- The somewhat poorly drained Orion soils in drainageways

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

9280B—Fayette silt loam, terrace, 2 to 5 percent slopes

Setting

Landform: Terraces
Position on the landform: Shoulders and summits

Map Unit Composition

Fayette and similar soils: 97 percent
Dissimilar soils: 3 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Fayette soil
- Soils that have a seasonal high water table within 6 feet of the surface
- Soils that are calcareous within 40 inches of the surface
- Soils that have slopes of less than 2 percent

Dissimilar soils:
- Soils that are subject to rare flooding; on footslopes

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.6 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

9280C2—Fayette silt loam, terrace, 5 to 10 percent slopes, eroded

Setting

Landform: Terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

Fayette and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Fayette soil
- Soils that have a seasonal high water table within 6 feet of the surface
- Soils that are calcareous within 40 inches of the surface

Dissimilar soils:
- The somewhat poorly drained Keomah soils near the head of drainageways
- Soils that are subject to rare flooding; on footslopes

Properties and Qualities of the Fayette Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.4 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Greenbush Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Greenbush silt loam, 2 to 5 percent slopes, at an elevation of 700 feet; Warren County, Illinois; 1,500 feet west and 1,500 feet north of the southeast corner of sec. 18, T. 8 N., R. 1 W.; USGS Greenbush topographic quadrangle; lat. 40 degrees 40 minutes 40 seconds N. and long. 90 degrees 32 minutes 45 seconds W., NAD 27:

Ap—0 to 6 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.
E—6 to 10 inches; dark grayish brown (10YR 4/2) silt loam; weak thin platy structure; friable; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.
BE—10 to 17 inches; brown (10YR 4/3) silt loam; moderate medium platy structure parting to weak fine subangular blocky; friable; few distinct very dark gray (10YR 3/1) organic coatings and common distinct gray (10YR 6/1) silt coatings on faces of peds; moderately acid; clear smooth boundary.
Bt1—17 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct gray (10YR 6/1) silt coatings on faces of peds; strongly acid; gradual smooth boundary.
Bt2—29 to 38 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown

(10YR 4/3) clay films on faces of peds; many faint light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron; common medium distinct light olive gray (5Y 6/2) iron depletions within peds; common prominent black (7.5YR 2.5/0) manganese oxide stains; strongly acid; gradual wavy boundary.

Bt3—38 to 53 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many faint light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron; common medium distinct light olive gray (5Y 6/2) iron depletions within peds; common prominent black (7.5YR 2.5/1) manganese oxide stains; strongly acid; gradual wavy boundary.

BCt—53 to 75 inches; brown (10YR 5/3) and light olive gray (5Y 6/2) silt loam; weak medium and coarse prismatic structure parting to weak fine and medium angular blocky; friable; few faint brown (10YR 4/3) clay films on faces of peds; few faint light gray (10YR 7/2) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron within peds; common prominent black (7.5YR 2.5/1) manganese oxide stains; moderately acid; gradual wavy boundary.

C—75 to 100 inches; yellowish brown (10YR 5/4) and light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium distinct light brownish gray (10YR 6/2) iron depletions within peds; many prominent black (7.5YR 2.5/1) manganese oxide stains; moderately acid.

Range in Characteristics

Depth to carbonates: More than 60 inches
Depth to the base of the argillic horizon: 36 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2

E horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam

C horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam

675B—Greenbush silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Map Unit Composition

Greenbush and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a thicker and darker surface layer than that of the Greenbush soil
- Soils that have a thinner or lighter colored surface layer than that of the Greenbush soil
- Soils that do not have a seasonal high water table within 6 feet of the surface
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The poorly drained Denny soils in depressions

Properties and Qualities of the Greenbush Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.8 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

9675B—Greenbush silt loam, terrace, 2 to 5 percent slopes

Setting

Landform: Terraces
Position on the landform: Shoulders and summits

Map Unit Composition

Greenbush and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a thicker and darker surface layer than that of the Greenbush soil

- Soils that have a thinner or lighter colored surface layer than that of the Greenbush soil
- Soils that do not have a seasonal high water table within 6 feet of the surface
- Soils that have slopes of less than 2 percent or more than 5 percent

Dissimilar soils:
- The poorly drained Denny soils in depressions
- Soils that are subject to rare flooding; on footslopes

Properties and Qualities of the Greenbush Soil

Parent material: Loess or other silty material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.8 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Harvard Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Harvard silt loam, 2 to 5 percent slopes, at an elevation of 832 feet; Knox County, Illinois; 2,300 feet east and 1,320 feet south of the northwest corner of sec. 16, T. 9 N., R. 3 E.; USGS Maquon topographic quadrangle; lat. 40 degrees 46 minutes 04 seconds N. and long. 90 degrees 10 minutes 05 seconds W., NAD 27:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; few very fine roots; few distinct dark yellowish brown (10YR 4/4) fragments of material from the E horizon in the lower part; neutral; abrupt smooth boundary.

Bt1—7 to 14 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and in pore linings; slightly acid; clear wavy boundary.

Bt2—14 to 22 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—22 to 32 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt4—32 to 37 inches; brown (10YR 4/3) silt loam; weak coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2Bt5—37 to 45 inches; yellowish brown (10YR 5/4) clay loam; weak coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2C—45 to 60 inches; dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6), stratified sandy loam, loam, and loamy sand; single grain and massive; very friable; slightly acid.

Range in Characteristics

Thickness of the loess or other silty material: 20 to 40 inches
Depth to carbonates: More than 40 inches
Thickness of the solum: 36 to 60 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam or silt loam

2Bt horizon:
Hue—7.5YR or 10YR
Value—4 or 5
Chroma—3 to 6
Texture—loam, silt loam, sandy clay loam, sandy loam, or clay loam
Content of gravel—less than 10 percent

2C horizon:
Hue—10YR
Value—3 to 6
Chroma—3 to 6
Texture—loam, silt loam, clay loam, sandy loam, or loamy sand
Content of gravel—less than 15 percent

344B—Harvard silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces, outwash plains, and alluvial fans
Position on the landform: Summits

Map Unit Composition

Harvard and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a loess mantle more than 40 inches thick
- Soils that have a thinner and lighter colored surface layer than that of the Harvard soil

Dissimilar soils:
- The somewhat poorly drained Virgil soils on summits or in the lower positions

Properties and Qualities of the Harvard Soil

Parent material: Loess and outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 9.8 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Hickory Series

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

Typical Pedon

Hickory silt loam, 18 to 35 percent slopes, at an elevation of 247 feet; Bureau County, Illinois; 320 feet south and 2,520 feet west of the northeast corner of sec. 18, T. 15 N., R. 6 E.; USGS Neponset topographic quadrangle; lat. 41 degrees 19 minutes 59 seconds N. and long. 89 degrees 50 minutes 50 seconds W., NAD 27:

A—0 to 4 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; common fine and medium roots throughout; 1 percent gravel; slightly acid; clear smooth boundary.

Bt1—4 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure; friable; common fine roots between peds; common faint brown (7.5YR 4/4) clay films on faces of peds; 2 percent gravel; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; slightly acid; clear smooth boundary.

2Bt2—13 to 23 inches; dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; common fine roots between peds; many faint brown (7.5YR 4/4) clay films on faces of peds; 5 percent gravel; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; neutral; clear smooth boundary.

2Bt3—23 to 31 inches; dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few very fine and fine roots between peds; many faint brown (7.5YR 4/4) clay films on faces of peds; 3 percent gravel; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; neutral; gradual wavy boundary.

2Bt4—31 to 40 inches; dark yellowish brown (10YR 4/4) clay loam; weak medium and coarse subangular blocky structure; firm; few very fine and fine roots between peds; common faint brown (7.5YR 4/4) clay films on faces of peds; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; 5 percent gravel; neutral; clear smooth boundary.

2BC—40 to 54 inches; brown (7.5YR 4/4) clay loam; weak coarse subangular blocky structure; firm; few faint dark reddish brown (5YR 3/3) clay films on faces of peds; few fine rounded black (N 2.5/) concretions of iron-manganese in the matrix; 5 percent gravel; slightly acid; clear smooth boundary.

2C—54 to 60 inches; yellowish brown (10YR 5/4) clay loam; massive; firm; common faint brown (7.5YR 4/4) clay films on rocks and along pores; few medium faint yellowish brown (10YR 5/6) iron masses in the matrix; 4 percent gravel; effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: Less than 20 inches
Depth to the base of the argillic horizon: 40 inches or more
Depth to carbonates: More than 40 inches
Thickness of the solum: Less than 80 inches

Ap or A horizon:
Hue—7.5YR or 10YR
Value—2 to 4
Chroma—2 or 3
Texture—silt loam or loam

E horizon (if it occurs):
Value—4 to 6
Chroma—2 to 4
Texture—silt loam or loam

Bt and 2Bt horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—4 to 6
Chroma—3 to 6
Texture—clay loam, silty clay loam, loam, or gravelly clay loam

2BC and 2C horizons:
Hue—7.5YR, 10YR, or 2.5Y
Value—5 to 7
Chroma—1 to 8
Texture—loam, clay loam, or sandy loam or the gravelly analogs of these textures

8D2—Hickory silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Hickory soil
- Soils that have a surface layer of clay loam

Dissimilar soils:
- The somewhat poorly drained Atlas soils on shoulders and backslopes

Properties and Qualities of the Hickory Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.2 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

8F—Hickory silt loam, 18 to 35 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Hickory and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Hickory soil
- Soils that are underlain by sandy material

Dissimilar soils:
- The somewhat poorly drained Atlas soils on shoulders and backslopes
- The well drained Marseilles soils on the lower backslopes
- The well drained Dorchester soils in drainageways and on flood plains

Properties and Qualities of the Hickory Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.5 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

8F2—Hickory silt loam, 18 to 35 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Hickory and similar soils: 85 percent
Dissimilar soils: 15 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Hickory soil
- Soils that are underlain by sandy material

Dissimilar soils:
- The somewhat poorly drained Atlas soils on shoulders and backslopes
- The well drained Marseilles soils on the lower backslopes
- The well drained Dorchester soils in drainageways and on flood plains

Properties and Qualities of the Hickory Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.4 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.

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

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

8G—Hickory silt loam, 35 to 60 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Hickory and similar soils: 91 percent
Dissimilar soils: 9 percent

Minor Components

Similar soils:
- Soils that are underlain by sandy material
- Soils that contain less clay in the subsoil than the Hickory soil and are calcareous within a depth of 20 inches

Dissimilar soils:
- The somewhat poorly drained Atlas soils on shoulders and backslopes
- The well drained Marseilles soils on the lower backslopes
- The somewhat poorly drained Lawson soils in drainageways

Properties and Qualities of the Hickory Soil

Parent material: Loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.2 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Huntsville Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 623 feet; Knox County, Illinois; 2,475 feet east and 495 feet south of the northwest corner of sec. 1, T. 12 N., R. 4 E.; USGS La Fayette topographic quadrangle; lat. 41 degrees 03 minutes 37 seconds N. and long. 89 degrees 59 minutes 42 seconds W., NAD 27:

Ap—0 to 10 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; slightly acid; clear smooth boundary.

A1—10 to 16 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

A2—16 to 27 inches; dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine granular structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

AC—27 to 52 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

C—52 to 60 inches; dark brown (10YR 3/3) silt loam; massive; friable; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 57 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

AC horizon:
Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam; silt loam or loam below a depth of 40 inches

C horizon:
Hue—10YR
Value—3 to 5
Chroma—3 or 4
Texture—silt loam; loam or strata of very fine sandy loam to fine sand below a depth of 40 inches in some pedons

8077A—Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Huntsville and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner surface layer than that of the Huntsville soil and a lighter colored subsurface layer
- Soils that have less clay than the Huntsville soil

Dissimilar soils:
- The somewhat poorly drained Orion soils in the lower positions on flood plains
- The poorly drained Sawmill soils in the lower positions on flood plains

Properties and Qualities of the Huntsville Soil

Parent material: Alluvium
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 13.4 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Frequency and most likely period of flooding: Occasional, November through June
Potential for frost action: High
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Ipava Series

Taxonomic classification: Fine, smectitic, mesic Aquic Argiudolls

Typical Pedon

Ipava silt loam, 0 to 2 percent slopes, at an elevation of 804 feet; Knox County, Illinois; 2,046 feet west and 594 feet north of the southeast corner of sec. 25, T. 13 N., R. 2 E.; USGS Oneida topographic quadrangle; lat. 41 degrees 04 minutes 40 seconds N. and long. 90 degrees 13 minutes 03 seconds W., NAD 27:

Ap—0 to 10 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and medium subangular blocky structure; friable; moderately acid; abrupt smooth boundary.

A—10 to 18 inches; very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; common faint black (10YR 2/1) organic coatings on faces of peds; moderately acid; clear smooth boundary.

BA—18 to 24 inches; brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions and few distinct yellowish brown (10YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

Btg1—24 to 31 inches; dark grayish brown (10YR 4/2) silty clay; moderate fine prismatic structure parting to moderate fine subangular blocky; friable; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix and common fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; slightly acid; clear smooth boundary.

Btg2—31 to 37 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; common faint dark gray (10YR 4/1) clay films on faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions and common medium prominent strong brown (7.5YR 5/8) masses of iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of peds; slightly alkaline; gradual smooth boundary.

BCg—37 to 50 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; friable; few distinct very dark grayish brown (10YR 3/2) organo-clay films as linings in pores and on a few vertical faces of peds; common fine faint light brownish gray (2.5Y 6/2) iron depletions and common fine prominent strong brown (7.5YR 5/8) masses of iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; common fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of peds; slightly alkaline; clear smooth boundary.

Cg—50 to 60 inches; light brownish gray (2.5Y 6/2) silt loam; massive; friable; few prominent very dark grayish brown (10YR 3/2) organo-clay films as linings in pores; common fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; few fine prominent black (7.5YR 2.5/1) very weakly cemented iron and manganese concretions throughout; few fine prominent black (7.5YR 2.5/1) iron and manganese stains on faces of vertical cracks; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the base of the argillic horizon: 35 to 55 inches
Depth to carbonates: More than 40 inches

Ap, A, or AB horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam
Reaction—moderately acid to neutral

BA, Bt, Btg, BC, or BCg horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—2 to 4
Texture—silty clay loam or silty clay
Reaction—moderately acid to slightly alkaline

Cg or C horizon:
Hue—10YR or 2.5Y

Value—5 or 6
Chroma—1 to 4
Reaction—slightly acid to moderately alkaline

43A—Ipava silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Map Unit Composition

Ipava and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer than that of the Ipava soil
- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have slopes of 2 to 5 percent

Dissimilar soils:
- The poorly drained Denny and Sable soils in slight depressions on broad flats

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

901B—Ipava-Osco silt loams, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Ipava—summits; Osco—summits and shoulders

Map Unit Composition

Ipava and similar soils: 50 percent
Osco and similar soils: 35 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer

Dissimilar components:
- The poorly drained Denny and Sable soils in slight depressions on broad flats
- Areas of urban land, including buildings, streets, sidewalks, and parking lots

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
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

Interpretive Groups

Land capability classification: Ipava—1; Osco—2e
Prime farmland category: Not prime farmland
Hydric soil status: Ipava—not hydric; Osco—not hydric

902A—Ipava-Sable complex, 0 to 2 percent slopes

Setting

Landform: Ipava—ground moraines; Sable—depressions
Position on the landform: Ipava—summits; Sable—depressions on ground moraines

Map Unit Composition

Ipava and similar soils: 45 percent
Sable and similar soils: 40 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that have a thinner or lighter colored surface layer
- Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar components:
- The poorly drained Denny soils in depressions
- Areas of urban land, including buildings, streets, sidewalks, and parking lots

Properties and Qualities of the Ipava Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 5 to 6 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 0.2 foot during wet periods
Flooding: None
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

Interpretive Groups

Land capability classification: Ipava—1; Sable—2w
Prime farmland category: Not prime farmland
Hydric soil status: Ipava—not hydric; Sable—hydric

Keomah Series

Taxonomic classification: Fine, smectitic, mesic Aeric Endoaqualfs

Typical Pedon

Keomah silt loam, 0 to 2 percent slopes, at an elevation of 655 feet; Adams County, Illinois; 2,495 feet south and 300 feet west of the northeast corner of sec. 4, T. 2 N., R. 7 W.; USGS Lorraine topographic quadrangle; lat. 40 degrees 11 minutes 22 seconds N. and long. 91 degrees 12 minutes 11 seconds W., NAD 27:

Ap1—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak thick platy structure parting to weak fine subangular blocky; friable; many very fine and fine roots; moderately acid; abrupt smooth boundary.

Ap2—6 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common very fine and fine roots; few distinct brown (7.5YR 4/4) masses of iron in the matrix; moderately acid; abrupt smooth boundary.

E—11 to 18 inches; grayish brown (10YR 5/2) silt loam, light gray (10YR 7/2) dry; weak medium platy structure parting to weak fine subangular blocky; friable; common fine roots; few faint dark grayish brown (10YR 4/2) organic coats on faces of peds and in pores; few prominent strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; few faint light gray (10YR 7/2) clay depletions in the matrix; slightly acid; clear smooth boundary.

Bt1—18 to 25 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots; many faint grayish brown (10YR 5/2) clay films on faces of peds; many prominent strong brown (7.5YR 5/6) masses of iron and common prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; few faint grayish brown (10YR 5/2) iron depletions in the matrix; strongly acid; clear smooth boundary.

Bt2—25 to 33 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots; many faint grayish brown (10YR 5/2) clay films on faces of peds and few faint pressure faces; many prominent strong brown (7.5YR 5/6) masses of iron and common prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; strongly acid; clear smooth boundary.

Bt3—33 to 44 inches; brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common faint grayish brown (10YR 5/2) clay films on faces of peds; many prominent strong brown (7.5YR 5/6) masses of iron and common prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; common faint light brownish gray (10YR 6/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

Bt4—44 to 51 inches; grayish brown (10YR 5/2) silty clay loam; weak coarse prismatic structure; firm; few fine roots; few faint dark grayish brown (10YR 4/2) clay films in root channels and/or pores; many prominent strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; moderately acid; clear smooth boundary.

BC1—51 to 63 inches; grayish brown (10YR 5/2) silt loam; weak coarse prismatic structure; friable; few very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many prominent strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; slightly acid; clear smooth boundary.

BC2—63 to 76 inches; grayish brown (10YR 5/2) silt loam; weak coarse prismatic structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and/or pores; many prominent strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; slightly acid; clear smooth boundary.

C—76 to 89 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; few faint strong brown (7.5YR 5/6) masses of iron and few prominent black (2.5Y 2.5/1) masses of iron and manganese in the matrix; common prominent light brownish gray (10YR 6/2) iron depletions in the matrix; slightly acid.

Range in Characteristics

Depth to the base of the diagnostic horizon: 40 to 76 inches

Ap or A horizon:
Hue—10YR
Value—3 or 4
Chroma—1 or 2
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—1 to 3
Texture—silt loam

Bt horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silty clay

BC or C horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 or 5
Chroma—2 to 4
Texture—silty clay loam or silt loam

17A—Keomah silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Map Unit Composition

Keomah and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker and thicker surface layer than that of the Keomah soil
- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Denny soils in depressions

Properties and Qualities of the Keomah Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

9017A—Keomah silt loam, terrace, 0 to 2 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits

Map Unit Composition

Keomah and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a darker and thicker surface layer than that of the Keomah soil
- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have slopes of more than 2 percent

Dissimilar soils:
- The poorly drained Denny soils in depressions

Properties and Qualities of the Keomah Soil

Parent material: Loess or other silty material

Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: High
Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: High
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

Lawson Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 695 feet; Bureau County, Illinois; 318 feet south and 1,040 feet east of the northwest corner of sec. 17, T. 17 N., R. 9 E.; USGS Princeton North topographic quadrangle; lat. 41 degrees 27 minutes 54 seconds N. and long. 89 degrees 29 minutes 14 seconds W., NAD 27:

Ap—0 to 11 inches; very dark grayish (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak medium granular structure; friable; few fine roots throughout; neutral; clear smooth boundary.

A1—11 to 19 inches; black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate fine granular structure; friable; few fine roots throughout; neutral; gradual smooth boundary.

A2—19 to 28 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; few fine roots throughout; neutral; gradual smooth boundary.

C1—28 to 50 inches; dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky structure; friable; few fine roots throughout; common faint very dark grayish brown (10YR 3/2) organic coats on faces of peds; very dark grayish brown (10YR 3/2) krotovina; few fine faint brown (10YR 4/3) and common fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; neutral; gradual smooth boundary.

C2—50 to 60 inches; grayish brown (2.5Y 5/2) silt loam; weak medium subangular blocky structure; friable; few fine roots; very dark grayish brown (10YR 3/2) krotovina; common fine faint dark grayish brown (10YR 4/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

C horizon:
Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—silt loam

3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thinner surface layer than that of the Lawson soil
- Soils that have a buried soil within a depth of 60 inches

Dissimilar soils:
- The poorly drained Sawmill soils on flood plains
- Soils that contain more clay than the Lawson soil

Properties and Qualities of the Lawson Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.1 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Frequency and most likely period of flooding: Frequent, November through June
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: Moderate

Interpretive Groups

Land capability classification: 3w

Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Lenzburg Series

Taxonomic classification: Fine-loamy, mixed, active, calcareous, mesic Haplic Udarents

Typical Pedon

Lenzburg silty clay loam, 5 to 10 percent slopes, stony, at an elevation of 721 feet; Bureau County, Illinois; 200 feet west and 126 feet south of the northeast corner of sec. 26, T. 16 N., R. 6 E.; USGS Neponset topographic quadrangle; lat. 41 degrees 21 minutes 00 seconds N. and long. 89 degrees 45 minutes 55 seconds W., NAD 27:

A—0 to 3 inches; dark grayish brown (10YR 4/2) and olive gray (5Y 5/2) silty clay loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common very fine, fine, and medium roots throughout; about 10 percent fragments of shale; effervescent; slightly alkaline; clear wavy boundary.

C1—3 to 12 inches; yellowish brown (10YR 5/4) and olive gray (5Y 5/2) channery clay loam; massive; firm; many very fine and fine, common medium, and few coarse roots; about 20 percent fragments of shale; effervescent; moderately alkaline; gradual wavy boundary.

C2—12 to 60 inches; yellowish brown (10YR 5/4) and olive gray (5Y 6/2) channery silty clay loam; massive; firm; many very fine and common fine roots; about 35 percent fragments of shale; effervescent; slightly alkaline.

Range in Characteristics

A or Ap horizon:
Hue— 10YR, 2.5Y, or 5Y
Value—2 to 5
Chroma—1 to 6
Texture—silt loam, silty clay loam, clay loam, or loam or the gravelly, stony, or channery analogs of these textures

C horizon:
Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—loam, silt loam, clay loam, or silty clay loam or the channery, gravelly, or cobbly analogs of these textures

871B—Lenzburg silty clay loam, 1 to 7 percent slopes

Setting

Landform: Surface-mined land
Position on the landform: Shoulders and summits

Map Unit Composition

Lenzburg and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that have rock fragments up to 15 inches in diameter in the surface layer

Dissimilar components:
- Haulage roads and lanes for industry equipment
- Steep escarpments adjacent to final mining cuts
- Trenches and depressions that contain ponded water

Properties and Qualities of the Lenzburg Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 8.1 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

871D—Lenzburg silty clay loam, 7 to 20 percent slopes

Setting

Landform: Surface-mined land
Position on the landform: Shoulders and backslopes

Map Unit Composition

Lenzburg and similar soils: 90 percent
Dissimilar components: 10 percent

Minor Components

Similar soils:
- Soils that have rock fragments up to 15 inches in diameter in the surface layer

Dissimilar components:
- Haulage roads and lanes for industry equipment
- Steep escarpments adjacent to final mining cuts
- Trenches and depressions that contain ponded water

Properties and Qualities of the Lenzburg Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 8.1 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 6e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

871G—Lenzburg silty clay loam, 20 to 60 percent slopes

Setting

Landform: Surface-mined land
Position on the landform: Backslopes

Map Unit Composition

Lenzburg and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that have rock fragments up to 15 inches in diameter in the surface layer

Dissimilar components:
- Haulage roads and lanes for industry equipment
- Steep escarpments adjacent to final mining cuts
- Trenches and depressions that contain ponded water

Properties and Qualities of the Lenzburg Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 8.2 inches
Content of organic matter in the surface layer: 0.5 to 4.0 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Very high
Susceptibility to water erosion: High
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Littleton Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Littleton silt loam, 0 to 2 percent slopes, at an elevation of 620 feet; Whiteside County, Illinois; 200 feet north and 1,420 feet east of the southwest corner of sec. 16, T. 20 N., R. 4 E.; USGS Erie topographic quadrangle; lat. 41 degrees 42 minutes 52 seconds N. and long. 90 degrees 02 minutes 57 seconds W., NAD 27:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure parting to moderate fine granular; friable; few very fine roots throughout; slightly acid; clear smooth boundary.

A1—8 to 20 inches; very dark gray (10YR 3/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and very fine subangular blocky structure parting to moderate fine granular; friable; few fine roots throughout; few very thin strata of brown (10YR 5/3) silt loam; slightly acid; clear smooth boundary.

A2—20 to 36 inches; black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate fine and very fine subangular blocky structure; friable; few fine roots between peds; slightly acid; gradual smooth boundary.

BA—36 to 52 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; friable; many faint grayish brown (10YR 5/2) coats on faces of peds and in root channels; common distinct very dark gray (10YR 3/1) organic coats on faces of peds; few fine distinct yellowish brown (10YR 5/6) iron masses in the matrix; neutral; clear smooth boundary.

Bg—52 to 61 inches; grayish brown (10YR 5/2) silty clay loam; strong medium prismatic structure; friable; many faint grayish brown (10YR 5/2) coats on faces of peds; common medium distinct yellowish brown (10YR 5/6) iron masses in the matrix; few prominent black (N 2.5/) iron-manganese concretions; neutral; clear smooth boundary.

Cg—61 to 80 inches; grayish brown (10YR 5/2) silt loam; massive; friable; common medium prominent yellowish brown (10YR 5/6) iron masses in the matrix; few prominent black (N 2.5/) iron-manganese concretions; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Thickness of the solum: 30 to 62 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam

Bg horizon:
Hue—10YR or 2.5Y
Value—3 to 5
Texture—silt loam or silty clay loam

Cg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam; thin strata of silty clay loam in some pedons

7081B—Littleton silt loam, 1 to 3 percent slopes, rarely flooded

Setting

Landform: Stream terraces and alluvial fans
Position on the landform: Summits and footslopes

Map Unit Composition

Littleton and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a thinner subsurface layer than that of the Littleton soil

Dissimilar soils:
- The poorly drained Sawmill soils in the lower positions on flood plains

Properties and Qualities of the Littleton Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 13.1 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Marseilles Series

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

Typical Pedon

Marseilles silt loam, 35 to 60 percent slopes, at an elevation of 685 feet; Adams County, Illinois; 1,400 feet south and 1,150 feet east of the northwest corner of sec. 14,

T. 2 S., R. 6 W.; USGS Liberty topographic quadrangle; lat. 39 degrees 53 minutes 57 seconds N. and long. 91 degrees 03 minutes 53 seconds W., NAD 27:

A—0 to 3 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine granular structure; friable; strongly acid; abrupt smooth boundary.
E—3 to 7 inches; brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; moderate thin platy and moderate very fine granular structure; friable; very few faint dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; strongly acid; clear smooth boundary.
BE—7 to 10 inches; yellowish brown (10YR 5/4) silt loam; weak medium platy and moderate very fine and fine subangular blocky structure; friable; very few distinct dark grayish brown (10YR 4/2) organic coats in root channels and/or pores; strongly acid; clear smooth boundary.
2Bt1—10 to 17 inches; yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; very few distinct dark grayish brown (10YR 4/2) organic coats in root channels and/or pores and few faint brown (10YR 5/3) clay films on faces of peds; 1 percent gravel; very strongly acid; clear smooth boundary.
2Bt2—17 to 22 inches; yellowish brown (10YR 5/4) silty clay loam; strong medium subangular blocky structure; firm; common faint brown (10YR 5/3) clay films and very few faint very pale brown (10YR 7/3) silt coats on faces of peds; 1 percent gravel; very strongly acid; clear smooth boundary.
2Bt3—22 to 35 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; very few faint brown (10YR 5/3) clay films and very few distinct very pale brown (10YR 7/3) silt coats on faces of peds; 1 percent gravel; very strongly acid; gradual smooth boundary.
2Cr—35 to 60 inches; 70 percent light olive brown (2.5Y 5/4) and 30 percent olive (5Y 5/3) silty clay and unweathered bedrock; massive; firm; 10 percent shale gravel; very strongly acid.

Range in Characteristics

Depth to the base of the argillic horizon: 20 to 40 inches
Depth to paralithic contact: 20 to 40 inches

Ap or A horizon:
Hue—10YR
Value—2 to 5
Chroma—2 or 3
Texture—silt loam or silty clay loam

E or BE horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4
Texture—silt loam

Bt horizon:
Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silty loam or silty clay loam

2Bt horizon:
Hue—7.5YR to 2.5Y
Value—4 to 6

Chroma—2 to 4
Texture—clay loam, silt loam, silty clay loam, or silty clay

2Cr horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 4

549D2—Marseilles silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Marseilles and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soil that have more clay in the surface layer and subsoil than the Marseilles soil
- Soils that formed in calcareous shale
- Soils that are underlain by sand, sandstone, or limestone
- Soils that have slopes of less than 10 percent

Dissimilar soils:
- The somewhat poorly drained Atlas soils on backslopes
- The moderately well drained Elco soils on backslopes
- The well drained Hickory soils on backslopes

Properties and Qualities of the Marseilles Soil

Parent material: Thin layer of loess over material weathered from shale
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity to a depth of 60 inches: About 4.4 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
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

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

549F—Marseilles silt loam, 18 to 35 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Marseilles and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have more clay in the surface layer and subsoil than the Marseilles soil
- Soils that formed in calcareous shale
- Soils that are underlain by sand, sandstone, or limestone
- Soils that have a thinner mantle of loess over the underlying shale

Dissimilar soils:
- The moderately well drained Elco soils on backslopes
- The well drained Hickory soils on backslopes
- The somewhat poorly drained Lawson and Orion soils on flood plains

Properties and Qualities of the Marseilles Soil

Parent material: Thin layer of loess over material weathered from shale
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity to a depth of 60 inches: About 5.7 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None
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

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

549G—Marseilles silt loam, 35 to 60 percent slopes

Setting

Landform: Ground moraines (fig. 4)
Position on the landform: Backslopes

Map Unit Composition

Marseilles and similar soils: 97 percent
Dissimilar soils: 3 percent

Figure 4.—A wooded area of Marseilles silt loam, 35 to 60 percent slopes.

Minor Components

Similar soils:
- Soils that have more clay in the surface layer and subsoil than the Marseilles soil
- Soils that formed in calcareous shale
- Soils that are underlain by sand, sandstone, or limestone

Dissimilar soils:
- The well drained Hickory soils on backslopes
- The somewhat poorly drained Lawson and Orion soils on flood plains

Properties and Qualities of the Marseilles Soil

Parent material: Thin layer of loess over material weathered from shale
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow or slow
Depth to restrictive feature: 20 to 40 inches to bedrock (paralithic)
Available water capacity to a depth of 60 inches: About 5.7 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Flooding: None

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

Interpretive Groups

Land capability classification: 7e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

M-W—Miscellaneous water

- This map unit consists of bodies of water used primarily for municipal or agricultural waste treatment lagoons. Included in mapping are established earth berms around the lagoon.

Orion Series

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Aquic Udifluvents

Typical Pedon

Orion silt loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 234 feet; Whiteside County, Illinois; 270 feet south and 1,000 feet east of the northwest corner of sec. 17, T. 22 N., R. 6 E.; USGS Milledgeville topographic quadrangle; 41 degrees 54 minutes 06 seconds N. and long. 89 degrees 50 minutes 13 seconds W., NAD 27:

A—0 to 5 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; massive; friable; many thin strata of brown (10YR 4/3) and very dark gray (10YR 3/1) silt loam; neutral; abrupt smooth boundary.

C1—5 to 15 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; many thin strata of pale brown (10YR 6/3) and yellowish brown (10YR 5/4) silt loam; few fine distinct brown (7.5YR 4/4) masses of iron in the matrix; neutral; clear wavy boundary.

C2—15 to 29 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; many thin strata of dark yellowish brown (10YR 4/4), yellowish brown (10YR 5/6), and pale brown (10YR 6/3) silt loam; few very dark gray (10YR 3/1) wormcasts; few fine distinct brown (7.5YR 4/4) masses of iron in the matrix; neutral; abrupt wavy boundary.

Ab1—29 to 39 inches; black (2.5Y 2.5/1) silt loam; weak thick platy structure parting to weak medium and fine subangular blocky; friable; neutral; clear smooth boundary.

Ab2—39 to 51 inches; black (2.5Y 2.5/1) silty clay loam; strong medium and fine angular blocky structure; friable; neutral; clear smooth boundary.

Ab3—51 to 60 inches; very dark gray (10YR 3/1) silty clay loam; moderate medium and fine subangular blocky structure; friable; neutral.

Range in Characteristics

Depth to the dark buried soil: 20 to 40 inches
Thickness of the surface layer: 5 to 10 inches

Ap or A horizon:
Hue—10YR
Value—3 to 6

Chroma—2 or 3
Texture—silt loam; stratified in some pedons

C horizon:
Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam; stratified in some pedons

Ab horizon:
Hue—10YR or 2.5Y
Value—2 to 3
Chroma—1 or 2
Texture—silty clay loam or silt loam; stratified in some pedons

3415A—Orion silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Orion and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a darker and thicker surface layer than that of the Orion soil
- Soils that do not have a buried soil within a depth of 40 inches

Dissimilar soils:
- The poorly drained Sawmill and well drained Huntsville soils on flood plains

Properties and Qualities of the Orion Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Low
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Frequency and most likely period of flooding: Frequent, November through June
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: Moderate

Interpretive Groups

Land capability classification: 3w

Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

801B—Orthents, silty, undulating

Setting

Landform: Ground moraines

Map Unit Composition

Orthents and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that are covered with as much as 2 feet of coarser textured fill material
- Soils that contain more than 15 percent sand

Dissimilar components:
- Urban land and borrow areas along major highways
- Undisturbed areas of the well drained Osco, somewhat poorly drained Ipava, and poorly drained Sable soils
- Areas around interstate cloverleaf interchanges that are more sloping than the Orthents

Properties and Qualities of the Orthents

Parent material: Mine spoil or earthy fill
Drainage class: Moderately well drained or somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow or moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12 inches
Content of organic matter in the surface layer: 0.2 to 1.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderate

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

802B—Orthents, loamy, undulating

Setting

Landform: Ground moraines

Map Unit Composition

Orthents and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that are covered with as much as 2 feet of coarser textured fill material
- Soils that contain less than 15 percent sand

Dissimilar components:
- Steep areas of escarpments associated with sanitary landfill cut and fill areas

Properties and Qualities of the Orthents

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderately slow
Permeability below a depth of 60 inches: Moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 10.9 inches
Content of organic matter in the surface layer: 0.5 to 2.0 percent
Shrink-swell potential: Moderate
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Osco Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Osco soils in map units 86B2, 86C2, and 86D2 have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Osco silt loam, 2 to 5 percent slopes, at an elevation of 858 feet; Carroll County, Illinois; 316 feet north and 88 feet west of the southeast corner of sec. 23, T. 24 N., R. 6 E.; USGS Lanark topographic quadrangle; lat. 42 degrees 03 minutes 15 seconds N. and long. 89 degrees 45 minutes 52 seconds W., NAD 27:

Ap—0 to 10 inches; very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.

A—10 to 14 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium or coarse granular structure; friable; common fine roots; strongly acid; clear smooth boundary.

BA—14 to 20 inches; dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; common fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coats on faces of peds; strongly acid; clear smooth boundary.

Bt1—20 to 26 inches; brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; few distinct gray (10YR 6/1) (dry) silt coats and common faint dark brown (10YR 3/3) clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—26 to 37 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct light brownish gray (10YR 6/2) (dry) silt coats and many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine faint brown (10YR 5/3) and common medium prominent strong brown (7.5YR 5/8) redoximorphic concentrations; many prominent very dark gray (N 3/0) and many distinct dark brown (7.5YR 3/2) manganese concretions; strongly acid; clear smooth boundary.

Bt3—37 to 45 inches; light yellowish brown (10YR 6/4) silty clay loam; moderate coarse subangular blocky structure; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) redoximorphic depletions and few medium prominent strong brown (7.5YR 5/8) redoximorphic concentrations; strongly acid; gradual smooth boundary.

BC—45 to 55 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silty clay loam; weak coarse angular blocky structure; friable; few fine distinct light brownish gray (10YR 6/2) redoximorphic depletions; strongly acid; gradual smooth boundary.

C—55 to 60 inches; yellowish brown (10YR 5/4) and brown (10YR 4/3) silt loam; massive; friable; many fine distinct yellowish brown (10YR 5/6) redoximorphic concentrations and common medium distinct grayish brown (10YR 5/2) redoximorphic depletions; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches
Thickness of the solum: 40 to more than 60 inches
Depth to free carbonates: More than 48 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam or silty clay loam

Bt horizon:
Hue—10YR
Value—4 to 6
Chroma—3 or 4
Texture—silty clay loam or silt loam

C or Cg horizon:
Hue—10YR or 2.5Y
Value—4 or 5
Chroma—2 to 6
Texture—silt loam

86B—Osco silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits and shoulders

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner and lighter colored surface layer than that of the Osco soil
- Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- The poorly drained Denny soils in depressions
- Soils that are subject to rare flooding; on footslopes

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
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

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

86B2—Osco silt loam, 2 to 5 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Map Unit Composition

Osco and similar soils: 88 percent
Dissimilar soils: 12 percent

Minor Components

Similar soils:
- Soils that have a thinner and lighter colored surface layer than that of the Osco soil
- Soils that do not have a seasonal high water table within a depth of 6 feet
- Soils that have a thinner subsoil than that of the Osco soil and are calcareous within 40 inches of the surface

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways
- The poorly drained Denny soils in depressions

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.8 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

86C—Osco silt loam, 5 to 10 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Osco and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that have a thinner and lighter colored surface layer than that of the Osco soil
- Soils that do not have a seasonal high water table within a depth of 6 feet

- Soils that have a thinner subsoil than that of the Osco soil and are calcareous within 40 inches of the surface
- Soils that have more sand or clay in the lower part than the Osco soil

Dissimilar components:
- Areas of urban land, including buildings, streets, sidewalks, and parking lots

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

86C2—Osco silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner and lighter colored surface layer than that of the Osco soil
- Soils that do not have a seasonal high water table within a depth of 6 feet
- Soils that have more sand or clay in the lower part than the Osco soil

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

86D2—Osco silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner and lighter colored surface layer than that of the Osco soil
- Soils that do not have a seasonal high water table within a depth of 6 feet
- Soils that have a thinner subsoil than that of the Osco soil and are calcareous within 40 inches of the surface
- Soils that have more sand or clay in the lower part than the Osco soil

Dissimilar soils:
- The somewhat poorly drained Radford soils in drainageways

Properties and Qualities of the Osco Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.7 inches
Content of organic matter in the surface layer: 2 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None

Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

9086B—Osco silt loam, terrace, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Summits and shoulders

Map Unit Composition

Osco and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thinner and lighter colored surface layer than that of the Osco soil
- Soils that do not have a seasonal high water table within a depth of 6 feet

Dissimilar soils:
- Soils that are subject to rare flooding; on footslopes

Properties and Qualities of the Osco Soil

Parent material: Loess or other silty material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.8 inches
Content of organic matter in the surface layer: 3 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
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

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

863—Pits, clay

- This map unit consists of excavated areas of Pennsylvanian shale from which clayey soil material has been removed. The remaining floors are nearly level, and sidewalls are very steep or nearly vertical.

864—Pits, quarries

- This map unit consists of excavated areas of limestone bedrock from which material has been removed. The remaining floors are nearly level, and sidewalls are very steep or nearly vertical.

865—Pits, gravel

- This map unit consists of excavated areas of gravelly outwash deposits from which gravelly material has been removed. The remaining floors are nearly level, and sidewalls are very steep or nearly vertical.

Radford Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Radford silt loam, 0 to 2 percent slopes, occasionally flooded, at an elevation of 220 feet; Bureau County, Illinois; 1,109 feet west and 1,254 feet south of the northeast corner of sec. 23, T. 17 N., R. 8 E.; USGS Buda NE topographic quadrangle; lat. 41 degrees 26 minutes 54 seconds N. and long. 89 degrees 32 minutes 04 seconds W., NAD 27:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—9 to 21 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; few fine dark masses of iron and manganese throughout; slightly acid; gradual smooth boundary.

C—21 to 29 inches; stratified very dark gray (10YR 3/1) silt loam and brown (10YR 5/3) silty clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine dark masses of iron and manganese throughout; slightly acid; clear smooth boundary.

Ab1—29 to 36 inches; black (10YR 2/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few medium faint very dark grayish brown (10YR 3/2) masses of iron and manganese in the matrix; few very fine dark masses of iron and manganese throughout; slightly acid; clear smooth boundary.

Ab2—36 to 43 inches; black (10YR 2/1) silty clay loam; weak medium subangular blocky structure; friable; few fine faint very dark grayish brown (10YR 3/2) masses of iron and manganese in the matrix; few very fine dark masses of iron and manganese throughout; neutral; clear smooth boundary.

Bgb—43 to 60 inches; very dark gray (10YR 3/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine faint dark gray (10YR 4/1) iron depletions in the matrix; few very fine dark masses of iron and manganese throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches
Depth to the buried soil: 20 to 40 inches

Ap or A horizon:
Value—2 or 3
Chroma—1 or 2

C horizon:
Hue—10YR
Value—2 to 6
Chroma—1 to 4
Texture—silt loam or silty clay loam

Ab horizon:
Hue—10YR or N
Value—2 or 3
Chroma—0 or 1
Texture—silt loam, silty clay loam, clay loam, or loam

Bgb horizon (if it occurs):
Hue—10YR, 2.5Y, 5Y, or N
Value—3 to 6
Chroma—0 to 2

3074A—Radford silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Radford and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a buried soil at a depth of more than 40 inches
- Soils that have a light-colored surface layer

Dissimilar soils:
- The poorly drained Sawmill soils in the lower positions on flood plains
- The well drained Huntsville soils in the higher positions on flood plains

Properties and Qualities of the Radford Soil

Parent material: Alluvium
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.3 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May

Frequency and most likely period of flooding: Frequent, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season
Hydric soil status: Not hydric

Rapatee Series

Taxonomic classification: Fine-silty, mixed, superactive, nonacid, mesic Mollic Udarents

Typical Pedon

Rapatee silty clay loam, 2 to 5 percent slopes, at an elevation of 800 feet; Knox County, Illinois; 1,460 feet west and 2,300 feet north of the southeast corner of sec. 11, T. 12 N., R. 3 E.; USGS Victoria topographic quadrangle; lat. 41 degrees 02 minutes 23 seconds N. and long. 90 degrees 07 minutes 20 seconds W., NAD 27:

Ap—0 to 3 inches; mixed black (10YR 2/1) and very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) and gray (10YR 5/1) dry; moderate very fine subangular blocky structure; friable; common fine and very fine roots; some mixing and horizontal strata of yellowish brown (10YR 5/4 and 5/8) and grayish brown (10YR 5/2) material; about 2 percent sand; slightly acid; clear smooth boundary.

C1—3 to 18 inches; mixed black (10YR 2/1) and very dark gray (10YR 3/1) silty clay loam, dark gray (10YR 4/1) and gray (10YR 5/1) dry; massive; firm; common fine roots; few moderate medium and coarse clods or soil fragments; some mixing and horizontal strata of yellowish brown (10YR 5/4 and 5/8) and grayish brown (10YR 5/2) material; few distinct dark stains and few fine rounded black concretions of iron and manganese; about 2 percent sand; slightly acid; abrupt wavy boundary.

C2—18 to 48 inches; mixed dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/4) silty clay loam; massive; very dense, very firm; few weak coarse clods or soil fragments; few pockets of dark olive gray (5Y 3/2) silty clay loam; common fine rounded black concretions of iron and manganese; about 8 percent sand; slightly alkaline; abrupt wavy boundary.

C3—48 to 60 inches; mixed brown (10YR 4/3), yellowish brown (10YR 5/4 and 5/6), and greenish gray (5G 5/1) clay loam; massive; extremely dense, very firm; few weak medium and coarse clods or soil fragments; common distinct dark stains and common fine black concretions of iron and manganese; about 14 percent sand; common fragments of coal and shale; common dolomitic till pebbles; strongly effervescent; slightly alkaline.

Range in Characteristics

Ap and C1 horizons (in place):
Hue—10YR
Value—2 or 3
Chroma—1 to 3
Texture—silt loam or silty clay loam
Reaction—slightly acid or neutral

C2 horizon:
Hue—10YR, 2.5Y, 5Y, 5G, 5GY, or 5BG
Value—4 to 6
Value—1 to 8
Texture—silt loam or silty clay loam

C3 horizon:
Hue—10YR, 2.5Y, 5Y, 5G, 5GY, or 5BG
Value—4 to 6
Value—1 to 8
Texture—loam, clay loam, silt loam, or silty clay loam or the channery or gravelly analogs of these textures

872B—Rapatee silty clay loam, 2 to 5 percent slopes

Setting

Landform: Surface-mined land
Position on the landform: Summits and shoulders

Map Unit Composition

Rapatee and similar soils: 85 percent
Dissimilar components: 15 percent

Minor Components

Similar soils:
- Soils that have mine spoil material at the surface

Dissimilar components:
- Undisturbed areas of the well drained Osco, somewhat poorly drained Ipava, and poorly drained Sable soils adjacent to mined areas
- Steep areas adjacent to pits and final mining cuts
- Soils in depressions that are commonly ponded

Properties and Qualities of the Rapatee Soil

Parent material: Mine spoil or earthy fill
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Very slow
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 7.3 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest perched seasonal high water table: 3.5 feet, February through April
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Rozetta Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Rozetta silt loam, 0 to 2 percent slopes, at an elevation of 890 feet; Stephenson County, Illinois; 150 feet south and 500 feet east of the center of sec. 18, T. 27 N., R. 6 E.; USGS Pearl City topographic quadrangle; lat. 42 degrees 20 minutes 00 seconds N. and long. 89 degrees 51 minutes 19 seconds W., NAD 27:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; weak medium granular structure; friable; many fine roots throughout; moderately acid; clear wavy boundary.

E—4 to 11 inches; dark grayish brown (10YR 4/2) silt loam; weak medium platy structure; friable; many fine roots throughout; strongly acid; clear smooth boundary.

BE—11 to 14 inches; brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; firm; many fine roots between peds; few faint brown (10YR 5/3) (dry) clay depletions on faces of peds; strongly acid; clear smooth boundary.

Bt1—14 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many fine roots between peds; many faint brown (10YR 5/3) clay films on faces of peds; strongly acid; clear smooth boundary.

Bt2—21 to 39 inches; brown (10YR 5/3) silty clay loam; moderate medium and coarse subangular blocky structure; firm; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few medium faint grayish brown (10YR 5/2) iron depletions; common medium faint light yellowish brown (10YR 6/4) and brown (10YR 4/3) masses of iron in the matrix; strongly acid; clear smooth boundary.

Bt3—39 to 50 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse subangular blocky structure; firm; few faint brown (10YR 4/3) clay films on faces of peds; common medium distinct grayish brown (10YR 5/2) iron depletions; common medium faint pale brown (10YR 6/3) masses of iron in the matrix; moderately acid; clear smooth boundary.

C—50 to 60 inches; yellowish brown (10YR 5/4) silt loam; massive; friable; common medium distinct dark grayish brown (10YR 4/2) iron depletions; slightly acid.

Range in Characteristics

Thickness of the solum: 42 to 72 inches

Ap or A horizon:
Hue—10YR
Value—3 to 5
Chroma—1 to 3
Texture—silt loam or silty clay loam

E horizon:
Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt horizon:
Hue—7.5YR or 10YR
Value—4 to 6
Chroma—3 to 6
Texture—silty clay loam

C horizon:
Hue—10YR
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silty clay loam

279B—Rozetta silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Map Unit Composition

Rozetta and similar soils: 91 percent
Dissimilar soils: 9 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Rozetta soil
- Soils that have a seasonal high water table at a depth of less than 4 feet or more than 6 feet

Dissimilar soils:
- The poorly drained Denny soils in depressions

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.3 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

279C2—Rozetta silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Shoulders and backslopes

Map Unit Composition

Rozetta and similar soils: 94 percent
Dissimilar soils: 6 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Rozetta soil
- Soils that have a seasonal high water table at a depth of less than 4 feet or more than 6 feet
- Soils that are calcareous within 40 inches of the surface
- Soils that are underlain by clayey till within a depth of 60 inches
- Soils that have slopes of more than 10 percent

Dissimilar soils:
- The somewhat poorly drained Clarksdale soils on summits and in low areas

Properties and Qualities of the Rozetta Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.4 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

9279B—Rozetta silt loam, terrace, 2 to 5 percent slopes

Setting

Landform: Stream terraces
Position on the landform: Shoulders and summits

Map Unit Composition

Rozetta and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Rozetta soil
- Soils that have a seasonal high water table at a depth of less than 4 feet or more than 6 feet

Dissimilar soils:
- Soils that are subject to rare flooding; on footslopes

Properties and Qualities of the Rozetta Soil

Parent material: Loess or other silty material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.2 inches
Content of organic matter in the surface layer: 1 to 3 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

9279C2—Rozetta silt loam, terrace, 5 to 10 percent slopes, eroded

Setting

Landform: Terraces
Position on the landform: Shoulders and backslopes

Map Unit Composition

Rozetta and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a darker surface layer than that of the Rozetta soil
- Soils that have a seasonal high water table at a depth of less than 4 feet or more than 6 feet
- Soils that are calcareous within 40 inches of the surface

- Soils that are underlain by clayey till within a depth of 60 inches
- Soils that have slopes of more than 10 percent

Dissimilar soils:
- The somewhat poorly drained Clarksdale soils on summits and in low areas

Properties and Qualities of the Rozetta Soil

Parent material: Loess or other silty material
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.2 inches
Content of organic matter in the surface layer: 1 to 2 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 4 feet, February through April
Flooding: None
Accelerated erosion: This soil has lost 25 to 75 percent of the original surface layer. In most areas the subsoil is mixed with the surface layer.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Sable Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Sable silty clay loam, 0 to 2 percent slopes, at an elevation of 732 feet; Warren County, Illinois; 1,281 feet south and 97 feet west of the northeast corner of sec. 14, T. 9 N., R. 3 W.; USGS Kirkwood East topographic quadrangle; lat. 40 degrees 46 minutes 30 seconds N. and long. 90 degrees 41 minutes 32 seconds W., NAD 27:

Ap—0 to 8 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; firm; moderately acid; abrupt smooth boundary.

A—8 to 19 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; few fine rounded dark concretions of iron and manganese oxides; slightly acid; clear smooth boundary.

AB—19 to 23 inches; very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; firm; few faint dark grayish brown (10YR 3/2) organic coats on faces of peds; few fine dark rounded concretions of iron and manganese; clear smooth boundary.

Bg—23 to 29 inches; dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common faint very dark gray (10YR 3/1) organic coats on faces of peds; common fine and medium dark rounded concretions of iron and manganese oxides; common medium distinct brown (10YR 5/3) masses of iron in the matrix; few medium faint dark grayish brown (10YR 4/2) iron depletions; neutral; clear smooth boundary.

Btg1—29 to 38 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few faint dark gray (10YR 4/1) clay films on faces of peds; many fine and medium dark rounded concretions of iron and manganese; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear wavy boundary.

Btg2—38 to 47 inches; gray (N 5/) silt loam; weak medium prismatic structure parting to weak medium and coarse angular blocky; firm; few prominent grayish brown (10YR 5/2) clay films on faces of peds; common fine dark rounded concretions of iron and manganese; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly alkaline; gradual smooth boundary.

Cg—47 to 60 inches; gray (N 5/) silt loam; massive; friable; many fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches
Thickness of the solum: 40 to 60 inches

Ap or A horizon:
Hue—10YR to 5Y or N
Value—2 or 3
Chroma—0 or 1
Texture—silty clay loam or silt loam

Bg or Btg horizon:
Hue—10YR to 5Y or N
Value—3 to 6
Chroma—0 to 2
Texture—silty clay loam or silt loam

Cg horizon:
Hue—10YR to 5Y or N
Value—4 to 6
Chroma—0 to 2
Texture—silt loam or silty clay loam

68A—Sable silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Summits

Map Unit Composition

Sable and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a seasonal high water table at a depth of 1 to 3 feet
- Soils that have a thinner surface layer than that of the Sable soil and have more clay in the subsoil

Dissimilar soils:
- The well drained Osco soils on summits

Properties and Qualities of the Sable Soil

Parent material: Loess
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.9 inches
Content of organic matter in the surface layer: 5 to 6 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Ponding depth: 0.2 foot during wet periods
Flooding: None
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

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland where drained
Hydric soil status: Hydric

Sawmill Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded, at an elevation of 535 feet; Sangamon County, Illinois; 300 feet south and 750 feet east of the northwest corner of sec. 20, T. 15 N., R. 4 W.; USGS New City topographic quadrangle; lat. 39 degrees 44 minutes 34 seconds N. and long. 89 degrees 34 minutes 15 seconds W., NAD 27:

Ap—0 to 10 inches; very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; firm; few fine roots throughout; few subrounded pebbles 1 to 3 mm in diameter; slightly acid; clear smooth boundary.
A1—10 to 17 inches; black (10YR 2/1) and very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; firm; few fine roots between peds; few subrounded pebbles 1 to 3 mm in diameter; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; few fine concretions of manganese lining root channels and pores; neutral; clear smooth boundary.
A2—17 to 25 inches; black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; firm; few fine roots between peds; few fine concretions of manganese lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

AB—25 to 32 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots between peds; few fine concretions of manganese lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.

Bg—32 to 40 inches; dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; few fine roots between peds; few faint very dark gray (10YR 3/1) organic coats on faces of peds; few fine concretions of manganese lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of iron in the matrix; slightly alkaline; clear smooth boundary.

Btg1—40 to 49 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine concretions of manganese lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/4) masses of iron in the matrix; slightly alkaline; clear smooth boundary.

Btg2—49 to 58 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure; firm; few distinct gray (10YR 5/1) clay films on faces of peds; few fine concretions of manganese lining pores; few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly alkaline; gradual smooth boundary.

Cg—58 to 65 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; very dark gray (10YR 3/1) channel linings and fillings; many medium prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches
Thickness of the solum: 36 to 60 inches

Ap or A horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—2 or 3
Chroma—0 to 2
Texture—silty clay loam

Bg or Btg horizon:
Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam; stratified in some pedons

Cg horizon:
Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 2
Texture—silty clay loam or clay loam; stratified in some pedons

3107+—Sawmill silt loam, 0 to 2 percent slopes, frequently flooded, overwash

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 98 percent
Dissimilar soils: 2 percent

Minor Components

Similar soils:
- Soils that have more sand than the Sawmill soil or have browner colors in the surface layer

Dissimilar soils:
- The somewhat poorly drained Littleton soils on low benches

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium
Drainage class: Poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.4 inches
Content of organic matter in the surface layer: 4 to 5 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: At the surface, January through May
Frequency and most likely period of flooding: Frequent, November through June
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

Interpretive Groups

Land capability classification: 3w
Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season
Hydric soil status: Hydric

Sylvan Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Sylvan silt loam, 10 to 18 percent slopes, at an elevation of 670 feet; Bureau County, Illinois; 2,500 feet east and 2,540 feet north of the southwest corner of sec. 34, T. 17 N., R. 8 E.; USGS Buda NE topographic quadrangle; lat. 41 degrees 25 minutes 55 seconds N. and long. 89 degrees 33 minutes 34 seconds W., NAD 27:

A—0 to 5 inches; very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium and fine granular structure; friable; many very fine and fine roots; neutral; clear smooth boundary.

E—5 to 10 inches; mixed dark grayish brown (10YR 4/2) and brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium platy structure parting to moderate medium granular; friable; many very fine roots; few distinct very dark grayish brown (10YR 3/2) organic coatings and light brownish gray (10YR 6/2) silt coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—10 to 15 inches; brown (10YR 4/3) silty clay loam; moderate fine and very fine subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) clay films and very few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; few fine dark accumulations of iron and manganese; neutral; clear smooth boundary.

Bt2—15 to 21 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and fine subangular blocky structure; friable; common very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; few fine dark accumulations of iron and manganese; slightly acid; clear smooth boundary.

Bt3—21 to 27 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few distinct dark yellowish brown (10YR 4/4) clay films and very few distinct light brownish gray (10YR 6/2) silt coatings on faces of peds; slightly effervescent; few fine dark accumulations of iron and manganese; neutral; clear smooth boundary.

Bt4—27 to 35 inches; yellowish brown (10YR 5/4) silt loam; common fine distinct yellowish brown (10YR 5/6) and few fine distinct light brownish gray (10YR 6/2) relict mottles; weak medium prismatic structure parting to moderate medium subangular blocky; friable; common very fine roots; few prominent light gray (10YR 7/2) silt coatings and common faint brown (7.5YR 4/4) clay films on faces of peds; few fine dark accumulations of iron and manganese; neutral; clear smooth boundary.

BC—35 to 40 inches; yellowish brown (10YR 5/4) silt loam; common medium distinct light brownish gray (10YR 6/2) mottles; weak coarse prismatic structure parting to weak coarse subangular blocky; friable; few very fine roots; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine dark accumulations of iron and manganese; few medium light-colored concretions of calcium carbonate; slightly effervescent; slightly alkaline; gradual wavy boundary.

C1—40 to 54 inches; light yellowish brown (2.5Y 6/4) silt loam; common medium distinct light brownish gray (10YR 6/2) and few fine distinct brownish yellow (10YR 6/6) mottles; appears massive but has planes of weakness; friable; few fine dark accumulations of iron and manganese; common coarse light-colored concretions of calcium carbonate; strongly effervescent; slightly alkaline; gradual wavy boundary.

C2—54 to 60 inches; brownish yellow (10YR 6/6) silt loam; few medium prominent light brownish gray (10YR 6/2) mottles; massive; friable; few fine dark accumulations of iron and manganese; violently effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 22 to 40 inches
Thickness of the solum: 22 to 40 inches

Ap or A horizon:
Value—3 to 6
Chroma—2 to 4
Texture—silt loam

E horizon:
Hue—10YR
Value—4 or 5
Chroma—2 to 4

Bt horizon:
Hue—7.5YR or 10YR

Value—4 or 5
Chroma—3 to 6
Texture—silty clay loam or silt loam

C and/or Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—silt loam or silt

19C3—Sylvan silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Sylvan and similar soils: 92 percent
Dissimilar soils: 8 percent

Minor Components

Similar soils:
- Soils that have a thicker subsoil than that of the Sylvan soil and are not calcareous within 40 inches of the surface

Dissimilar soils:
- The moderately well drained Elco soils on the lower backslopes

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost more than 75 percent of the original surface layer. The plow layer consists largely of subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

19D3—Sylvan silty clay loam, 10 to 18 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Sylvan and similar soils: 90 percent
Dissimilar soils: 10 percent

Minor Components

Similar soils:
- Soils that have a thicker subsoil than that of the Sylvan soil and are not calcareous within 40 inches of the surface

Dissimilar soils:
- The moderately well drained Elco soils on the lower backslopes

Properties and Qualities of the Sylvan Soil

Parent material: Loess
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 12.2 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Flooding: None
Accelerated erosion: This soil has lost more than 75 percent of the original surface layer. The plow layer consists largely of subsoil material.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Virgil Series

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon

Virgil silt loam, 0 to 2 percent slopes, at an elevation of 765 feet; Stephenson County, Illinois; 300 feet south and 1,346 feet east of the northwest corner of sec. 8, T. 26 N., R. 8 E.; USGS Freeport East topographic quadrangle; lat. 42 degrees 16 minutes 30 seconds N. and long. 89 degrees 36 minutes 38 seconds W., NAD 27:

Ap—0 to 7 inches; black (10YR 2/1) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

Eg—7 to 13 inches; dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; weak thin platy structure parting to moderate fine granular; friable; many fine roots; few faint black (10YR 2/1) organic coatings on faces of peds and fillings in root channels; few fine prominent brown (7.5YR 4/4) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Bt1—13 to 17 inches; grayish brown (10YR 5/2) and brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; few fine prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Bt2—17 to 25 inches; grayish brown (10YR 5/2) and brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; common faint dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) clay films on faces of peds; common faint light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; few fine prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; strongly acid; gradual smooth boundary.

Btg1—25 to 35 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many fine black (10YR 2/1) iron and manganese oxide concretions throughout; common fine prominent strong brown (7.5YR 5/6 and 5/8) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.

Btg2—35 to 44 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium and coarse subangular and angular blocky structure; firm; few fine roots; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many fine black (10YR 2/1) iron and manganese oxide nodules and concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

Btg3—44 to 49 inches; grayish brown (2.5Y 5/2) silty clay loam; weak medium and coarse angular blocky structure; firm; few fine roots; few prominent gray (N 5/0) clay films on faces of peds; many fine black (10YR 2/1) iron and manganese oxide nodules and concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.

2Btg4—49 to 58 inches; grayish brown (2.5Y 5/2) and light brownish gray (2.5Y 6/2) loam; weak coarse angular blocky structure; firm; few prominent dark gray (N 4/0) clay films on faces of peds; few fine black (10YR 2/1) iron and manganese oxide concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; neutral; gradual smooth boundary.

2C—58 to 60 inches; brown (10YR 4/3) and dark yellowish brown (10YR 4/4) sandy loam; massive; friable; common fine distinct dark gray (10YR 4/1) and gray (10YR 5/1) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the loess: 40 to 60 inches
Depth to carbonates: 45 to 70 inches
Thickness of the solum: 42 to 70 inches

Ap or A horizon:
Hue—10YR
Value—2 or 3
Chroma—1 or 2
Texture—silt loam

Eg horizon:
Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 4
Texture—silty clay loam

2Bt or 2Btg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 6
Texture—loam, clay loam, sandy loam, or silt loam
Content of gravel—less than 10 percent

2C or 2Cg horizon:
Hue—10YR or 2.5Y
Value—4 to 6
Chroma—2 to 8
Texture—loam, sandy loam, silt loam, clay loam, or loamy sand
Content of gravel—less than 15 percent

7104A—Virgil silt loam, 0 to 2 percent slopes, rarely flooded

Setting

Landform: Stream terraces and outwash plains
Position on the landform: Summits

Map Unit Composition

Virgil and similar soils: 95 percent
Dissimilar soils: 5 percent

Minor Components

Similar soils:
- Soils that have a thicker surface layer than that of the Virgil soil
- Soils that have less than 40 inches of loess over the stratified loamy materials

Dissimilar soils:
- The well drained Harvard soils in the higher positions

Properties and Qualities of the Virgil Soil

Parent material: Loess or other silty material
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity to a depth of 60 inches: About 11.6 inches
Content of organic matter in the surface layer: 2 to 4 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1 foot, January through May
Frequency and most likely period of flooding: Rare, November through June
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland where drained
Hydric soil status: Not hydric

W—Water

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

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. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

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

Interpretive Ratings

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

Rating Class Terms

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

Numerical Ratings

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

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and 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 “Soil Series and Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Crop Yield Estimates

Table 6 shows the average yields per acre that can be expected of the principal crops under a high level of management. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage; erosion control; 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. 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 information about the management and productivity of the soils for those crops.

Pasture yields.—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 top 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 or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

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 take into account major and generally expensive landshaping that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils generally are grouped at three levels—capability class, subclass, and unit (USDA, 1961). These categories indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, soybeans, small grain, and hay. 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.

If properly managed, soils in classes 1, 2, 3, and 4 are suitable for the mechanized production of commonly grown field crops and for pasture and forestland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class 1 to class 4. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes 5, 6, and 7 are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class 5 to class 7. The local office of the Cooperative Extension Service or the Natural Resources Conservation Service can provide guidance on the use of these soils as cropland.

Areas in class 8 are generally not suited to crops, pasture, or forestland without a level of management that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

Capability subclasses identify the dominant kind of limitation in the 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 a 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.

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

The capability classification of the soils in the survey area is given in table 6.

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.

Over the past several decades, a major 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 287,233 acres in the survey area, or about 62 percent of the total acreage, meets the requirements for prime farmland.

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 5. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Soil Series and 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 each of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 1995). These criteria are used to identify a phase of a soil series that normally is associated with wetlands. The criteria used are selected estimated soil properties that are described in “Soil Taxonomy” (Soil Survey Staff, 1999) and “Keys to Soil Taxonomy” (Soil Survey Staff, 2003) and in the “Soil Survey Manual” (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils in this survey area are specified in “Field Indicators of Hydric Soils in the United States” (Hurt and others, 2002).

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

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

The map units in which one or more components meet the definition of hydric soils and, in addition, have at least one of the hydric soil indicators are listed in table 8. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

Forestland Productivity and Management

Much of the forestland in Knox County has been cleared since the early days of settlement and is now used for row crops. Much of the remaining forestland is in areas that are too steep, too wet, or too remote and isolated for growing row crops. Each year, some land is cleared, generally in parcels ranging from a quarter of an acre to several acres.

Forestland harvesting on private land is generally in areas of steep or very steep soils, such as Elco, Hickory, and Marseilles soils, or in areas of wet soils on flood plains, such as Lawson and Sawmill soils, which have not been disturbed for a number of years. Selectively cutting white oak, hickory, ash, and walnut for sawlogs is the most common harvesting method. Some softwood trees are harvested for pulpwood.

The most common trees in the uplands are white oak, northern red oak, hickory, white ash, green ash, sugar maple, silver maple, boxelder, walnut, and American elm. The most common trees on the bottom land are cottonwood, sycamore, willow, white oak, and hickory.

Many of the existing stands can be improved by thinning out mature trees and trees of low value. Measures that protect the woodland from fire and grazing are needed. Logging trails and access roads are commonly in areas of steep soils. Shaping and seeding these trails and roads and applying fertilizer immediately after harvest help to control erosion. Properly shaped and constructed water bars across the trails also help to control erosion. Interplanting is needed for maximum woodland production. Control or removal of competing vegetation, such as the trees of low value, is needed if seedlings are planted. A grass cover is needed between rows of seedlings planted on bare, sloping land.

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

Table 9 can help woodland owners or forest managers plan the use of soils for wood crops. Only those soils commonly used for wood crops are listed.

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 woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The *volume*, a number, is the yield likely to be produced by the most important trees. This number, expressed as cubic feet per acre per year, indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Suggested trees to plant are those that are suitable for commercial wood production.

Forestland Management

In tables 10a through 10e, 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 fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the “National Forestry Manual,” which is available in local offices of the Natural Resources Conservation Service or on the Internet.

Table 10a

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.

Table 10b

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

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

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

Table 10c

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.

Table 10d

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

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

Table 10e

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.

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 11 shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in table 11 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 of the Cooperative Extension Service or from a commercial nursery.

Recreation

Knox County has some areas of scenic and historic interest. These areas are used mainly for camping, hiking, fishing, sightseeing, picnicking, or boating. Public areas available for recreation include Lake Storey (fig. 5), the Wolf Covered Bridge Historical Site, and the Carl Sandburg Birthplace Historical Site. There are numerous private recreational areas, including several large lakes and sportsmen’s clubs. Hiking, fishing, boating, and hunting are the major uses in these areas. Many of the sportsmen’s clubs are in areas of mine spoil, where numerous lakes have been created.

The soils of the survey area are rated in tables 12a and 12b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical.

Figure 5.—A recreational area adjacent to Lake Storey.

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

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

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

The information in tables 12a and 12b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

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

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

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

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

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

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

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 13, 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, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, 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, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

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

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, pheasant, 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, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas (fig. 6). 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, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading “Soil Properties.”

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

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

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

Figure 6.—Wetland wildlife habitat in a water-filled area of map unit 863 (Pits, clay).

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 sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

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 14a and 14b 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 15a and 15b 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 16a and 16b give information about the soils as potential sources of reclamation material, roadfill, topsoil, and sand. Normal compaction, minor processing, and other standard construction practices are assumed.

In table 16a, the soils are rated *good, fair,* or *poor* as potential sources of reclamation material, roadfill, and topsoil. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, or topsoil. The lower the number, the greater the limitation.

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

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

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

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

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

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

Sand and *gravel* 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. Because all of the soils in Knox County are rated as poor sources of gravel, this interpretation is not included in table 16b. All of the soils in the county are rated as poor sources of sand, except for the Alvin and Camden soils. When the ratings are made, 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.

In table 16b, the soils are rated *good, fair,* or *poor* as potential sources of sand. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings. These ratings indicate the likelihood that the layer is a source of sand. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

Water Management

Tables 17a and 17b give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; constructing grassed waterways and surface drains; constructing terraces and diversions; and tile drains and underground outlets. 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).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Grassed waterways and surface drains are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways and surface drains. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Tile drains and underground outlets are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to the soil in its undisturbed condition and do not include consideration of current land use. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains.

Soil Properties

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

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

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

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

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 19 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.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 19, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$- or $^1/_{10}$-bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

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

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

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $^1/_3$- or $^1/_{10}$-bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

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

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 19, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 19 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).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 20 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.

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

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

The four hydrologic soil groups are:

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

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

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

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

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

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 21 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Water table refers to a saturated zone in the soil. Table 21 indicates the 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.

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

The table also shows the kind of water table—that is, perched or apparent. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Soil Features

Table 22 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

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

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

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high,* is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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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.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. 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.

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.

Beach deposits. Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.

Beach ridge. A low, essentially continuous mound of beach or beach-and-dune material accumulated by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.

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.

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.

Bog. Waterlogged, spongy ground, consisting primarily of mosses, containing acidic, decaying vegetation (such as sphagnum, sedges, and heaths) that develops into peat.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

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.

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. Cemented bodies with crude internal symmetry organized around a point, a line, or a plane. They typically take the form of concentric layers visible to the naked eye. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up concretions. If formed in place, concretions of iron oxide or manganese oxide are generally considered a type of redoximorphic concentration.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

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.

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.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

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.

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.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

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.

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.

Excess lime (in tables). Excess carbonates in the soil restrict the growth of some plants.

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.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

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.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

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.

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 to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

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, which is predominantly the remains of sedges, reeds, cattails, and other herbaceous plants.

High-chroma zones. Zones having chroma of 3 or more. Typical color in areas of iron concentrations.

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.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation include:

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

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.

Knoll. A small, low, rounded hill rising above adjacent landforms.

K_{sat}. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake 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.

Lakeshore. A narrow strip of land in contact with or bordering a lake; especially the beach of a lake.

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.

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-chroma zones. Zones having chroma of 2 or less. Typical color in areas of iron depletions.

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.

MAP. Mean annual precipitation, expressed in inches.

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.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. A kind of map unit that has little or no natural soil and supports little or no vegetation.

MLRA (major land resource area). A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural 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 matter 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 can not be recognized.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

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.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Parts per million (ppm). The concentration of a substance in the soil, such as phosphorus or potassium, in one million parts of air-dried soil on a weight per weight basis.

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.

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.

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.

Rise. A slight increase in elevation of the land surface, typically with a broad summit and gently sloping sides.

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.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (K_{sat}). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

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.

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.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

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.

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.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The potential decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid, mineral layers. Subsidence, as a result of drainage, is attributed to (1) shrinkage from drying, (2) consolidation because of the loss of ground-water buoyancy, (3) compaction from tillage or manipulation, (4) wind erosion, (5) burning, and (6) biochemical oxidation.

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 due to 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.

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.

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.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.--Temperature and Precipitation

(Recorded in the period 1971-2000 at Galesburg, Illinois)

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----	29.5	13.4	21.5	57	-17	0	1.41	0.59	2.11	3	8.3
February---	35.5	19.2	27.3	65	-13	1	1.55	.62	2.33	3	5.2
March------	48.0	29.4	38.7	79	4	30	2.84	1.25	4.20	6	2.8
April------	61.1	40.2	50.7	85	18	126	3.81	2.18	5.26	6	1.5
May--------	72.3	51.4	61.9	90	33	371	3.97	2.10	5.62	7	.0
June-------	81.4	60.9	71.1	95	45	636	4.18	2.01	6.06	6	.0
July-------	84.8	65.3	75.0	98	51	779	4.37	2.13	6.32	6	.0
August-----	82.4	63.2	72.8	96	48	705	4.07	1.93	5.92	6	.0
September--	75.5	54.7	65.1	93	35	453	3.50	1.81	4.98	5	.0
October----	63.6	43.0	53.3	85	24	169	2.53	1.38	3.54	5	.1
November---	47.5	30.7	39.1	73	8	26	2.72	1.18	4.03	5	1.8
December---	34.1	19.2	26.6	62	-10	2	2.29	1.16	3.28	4	5.8
Yearly:											
Average---	59.6	40.9	50.3	---	---	---	---	---	---	---	---
Extreme---	102	-25	---	98	-19	---	---	---	---	---	---
Total-----	---	---	---	---	---	3,299	37.25	31.16	42.92	62	25.5

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall

(Recorded in the period 1971-2000 at Galesburg, Illinois)

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. 13	Apr. 18	Apr. 29
2 years in 10 later than--	Apr. 9	Apr. 15	Apr. 25
5 years in 10 later than--	Apr. 2	Apr. 8	Apr. 15
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 23	Oct. 9	Sept. 28
2 years in 10 earlier than--	Oct. 27	Oct. 15	Oct. 3
5 years in 10 earlier than--	Nov. 5	Oct. 26	Oct. 12

Table 3.--Growing Season

(Recorded in the period 1971-2000 at Galesburg, Illinois)

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	202	182	160
8 years in 10	206	188	167
5 years in 10	216	200	180
2 years in 10	225	211	193
1 year in 10	230	217	200

Table 4.--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
Alvin	Coarse-loamy, mixed, superactive, mesic Typic Hapludalfs
*Assumption	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs
Atlas	Fine, smectitic, mesic Aeric Chromic Vertic Epiaqualfs
Camden	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Clarksdale	Fine, smectitic, mesic Udollic Endoaqualfs
Coatsburg	Fine, smectitic, mesic Vertic Argiaquolls
Denny	Fine, smectitic, mesic Mollic Albaqualfs
Dorchester	Fine-silty, mixed, superactive, calcareous, mesic Typic Udifluvents
Edinburg	Fine, smectitic, mesic Vertic Argiaquolls
Elco	Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs
Elkhart	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Elkhart	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Fayette	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Greenbush	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Harvard	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Hickory	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Huntsville	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Ipava	Fine, smectitic, mesic Aquic Argiudolls
Keomah	Fine, smectitic, mesic Aeric Endoaqualfs
Lawson	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Lenzburg	Fine-loamy, mixed, active, calcareous, mesic Haplic Udarents
Littleton	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Marseilles	Fine-silty, mixed, active, mesic Typic Hapludalfs
Orion	Coarse-silty, mixed, superactive, nonacid, mesic Aquic Udifluvents
Orthents, loamy	Fine-loamy, mixed, active, nonacid, mesic Typic Udorthents
Orthents, silty	Fine-silty, mixed, nonacid, mesic Aquic Udorthents
Osco	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Osco	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Radford	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Rapatee	Fine-silty, mixed, superactive, nonacid, mesic Mollic Udarents
Rozetta	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Sable	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Sawmill	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Sylvan	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Virgil	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
7D3	Atlas silty clay loam, 10 to 18 percent slopes, severely eroded	1,455	0.3
8D2	Hickory silt loam, 10 to 18 percent slopes, eroded	9,668	2.1
8F	Hickory silt loam, 18 to 35 percent slopes	138	*
8F2	Hickory silt loam, 18 to 35 percent slopes, eroded	20,106	4.4
8G	Hickory silt loam, 35 to 60 percent slopes	7,077	1.5
17A	Keomah silt loam, 0 to 2 percent slopes	5,171	1.1
19C3	Sylvan silty clay loam, 5 to 10 percent slopes, severely eroded	2,225	0.5
19D3	Sylvan silty clay loam, 10 to 18 percent slopes, severely eroded	694	0.2
43A	Ipava silt loam, 0 to 2 percent slopes	75,107	16.3
45A	Denny silt loam, 0 to 2 percent slopes	758	0.2
68A	Sable silty clay loam, 0 to 2 percent slopes	15,566	3.4
86B	Osco silt loam, 2 to 5 percent slopes	65,220	14.1
86B2	Osco silt loam, 2 to 5 percent slopes, eroded	19,462	4.2
86C	Osco silt loam, 5 to 10 percent slopes	864	0.2
86C2	Osco silt loam, 5 to 10 percent slopes, eroded	25,736	5.6
86D2	Osco silt loam, 10 to 18 percent slopes, eroded	535	0.1
119D2	Elco silt loam, 10 to 18 percent slopes, eroded	9,356	2.0
119E2	Elco silt loam, 18 to 25 percent slopes, eroded	4,710	1.0
131B	Alvin sandy loam, 2 to 5 percent slopes	292	*
131D	Alvin sandy loam, 10 to 18 percent slopes	251	*
131F	Alvin sandy loam, 18 to 35 percent slopes	441	*
134B	Camden silt loam, 2 to 5 percent slopes	403	*
134C2	Camden silt loam, 5 to 10 percent slopes, eroded	524	0.1
134D2	Camden silt loam, 10 to 18 percent slopes, eroded	403	*
249A	Edinburg silty clay loam, 0 to 2 percent slopes	199	*
257A	Clarksdale silt loam, 0 to 2 percent slopes	12,079	2.6
259C2	Assumption silt loam, 5 to 10 percent slopes, eroded	4,117	0.9
259D2	Assumption silt loam, 10 to 18 percent slopes, eroded	2,970	0.6
259D3	Assumption silty clay loam, 10 to 18 percent slopes, severely eroded	990	0.2
279B	Rozetta silt loam, 2 to 5 percent slopes	22,964	5.0
279C2	Rozetta silt loam, 5 to 10 percent slopes, eroded	29,160	6.3
280B	Fayette silt loam, 2 to 5 percent slopes	4,049	0.9
280C2	Fayette silt loam, 5 to 10 percent slopes, eroded	5,344	1.2
280D2	Fayette silt loam, 10 to 18 percent slopes, eroded	3,656	0.8
280F	Fayette silt loam, 18 to 35 percent slopes	356	*
344B	Harvard silt loam, 2 to 5 percent slopes	394	*
536	Dumps, mine	485	0.1
549D2	Marseilles silt loam, 10 to 18 percent slopes, eroded	802	0.2
549F	Marseilles silt loam, 18 to 35 percent slopes	5,731	1.2
549G	Marseilles silt loam, 35 to 60 percent slopes	6,865	1.5
567B2	Elkhart silt loam, 2 to 5 percent slopes, eroded	442	*
567C2	Elkhart silt loam, 5 to 10 percent slopes, eroded	6,232	1.3
567D2	Elkhart silt loam, 10 to 18 percent slopes, eroded	4	*
567D3	Elkhart silty clay loam, 10 to 18 percent slopes, severely eroded	852	0.2
660C2	Coatsburg silty clay loam, 5 to 10 percent slopes, eroded	369	*
675B	Greenbush silt loam, 2 to 5 percent slopes	12,762	2.8
801B	Orthents, silty, undulating	3,177	0.7
802B	Orthents, loamy, undulating	224	*
835G	Earthen dams	17	*
863	Pits, clay	97	*
864	Pits, quarries	71	*
865	Pits, gravel	113	*
871B	Lenzburg silty clay loam, 1 to 7 percent slopes	5,320	1.2
871D	Lenzburg silty clay loam, 7 to 20 percent slopes	4,341	0.9
871G	Lenzburg silty clay loam, 20 to 60 percent slopes	8,856	1.9
872B	Rapatee silty clay loam, 2 to 5 percent slopes	1,391	0.3
901B	Ipava-Osco silt loams, 2 to 5 percent slopes	1,402	0.3
902A	Ipava-Sable complex, 0 to 2 percent slopes	2,540	0.6
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded	4,753	1.0

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
3107+	Sawmill silt loam, 0 to 2 percent slopes, frequently flooded, overwash	6,349	1.4
3415A	Orion silt loam, 0 to 2 percent slopes, frequently flooded	2,364	0.5
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded	16,022	3.5
7081B	Littleton silt loam, 1 to 3 percent slopes, rarely flooded	1,512	0.3
7104A	Virgil silt loam, 0 to 2 percent slopes, rarely flooded	308	*
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	5,350	1.2
8239A	Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded	2,874	0.6
9017A	Keomah silt loam, terrace, 0 to 2 percent slopes	120	*
9086B	Osco silt loam, terrace, 2 to 5 percent slopes	147	*
9257A	Clarksdale silt loam, terrace, 0 to 2 percent slopes	411	*
9279B	Rozetta silt loam, terrace, 2 to 5 percent slopes	500	0.1
9279C2	Rozetta silt loam, terrace, 5 to 10 percent slopes, eroded	267	*
9280B	Fayette silt loam, terrace, 2 to 5 percent slopes	399	*
9280C2	Fayette silt loam, terrace, 5 to 10 percent slopes, eroded	184	*
9675B	Greenbush silt loam, terrace, 2 to 5 percent slopes	603	0.1
M-W	Miscellaneous water	63	*
W	Water	4,916	1.1
	Total	461,675	100.0

* Less than 0.1 percent.

Table 6.--Land Capability and Yields per Acre of Crops and Pasture

(Crop yields are those that can be expected under an optimum level of management. They are for nonirrigated areas. Yields were taken from bulletins published in 2000 by the University of Illinois, College of Agricultural, Consumer and Environmental Sciences. Yields for crops and hay were taken from Bulletin 811, and yields for pasture were taken from Bulletin 810. 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	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
7D3:							
Atlas	6e	---	---	---	---	2.12	3.5
8D2:							
Hickory	3e	94	32	38	44	3.13	4.5
8F:							
Hickory	6e	---	---	---	---	2.79	4.0
8F2:							
Hickory	6e	---	---	---	---	2.61	3.6
8G:							
Hickory	7e	---	---	---	---	---	---
17A:							
Keomah	2w	145	46	59	75	4.63	6.8
19C3:							
Sylvan	4e	117	38	46	54	3.11	4.4
19D3:							
Sylvan	4e	107	35	43	50	2.86	4.0
43A:							
Ipava	1	172	56	69	90	5.31	7.8
45A:							
Denny	3w	143	47	58	69	4.41	6.5
68A:							
Sable	2w	173	57	67	89	5.20	7.7
86B:							
Osco	2e	170	54	67	91	6.16	9.0
86B2:							
Osco	2e	156	51	65	87	5.91	8.6
86C:							
Osco	3e	165	52	65	88	5.97	8.7
86C2:							
Osco	3e	160	50	63	86	5.78	8.3
86D2:							
Osco	3e	149	47	59	80	5.38	7.7
119D2:							
Elco	3e	118	39	46	59	3.32	4.8

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	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
119E2:							
Elco	6e	---	---	---	---	2.96	4.3
131B:							
Alvin	2e	134	44	52	66	3.36	4.9
131D:							
Alvin	3e	123	40	48	61	3.08	4.5
131F:							
Alvin	6e	---	---	---	---	2.61	3.8
134B:							
Camden	2e	148	46	57	77	4.25	6.2
134C2:							
Camden	3e	139	43	54	73	3.99	5.8
134D2:							
Camden	3e	129	40	50	67	3.71	5.3
249A:							
Edinburg	3w	155	50	61	77	4.52	6.7
257A:							
Clarksdale	1	157	50	62	80	4.75	7.0
259C2:							
Assumption	3e	137	44	55	70	3.99	5.8
259D2:							
Assumption	4e	127	41	51	65	3.71	5.3
259D3:							
Assumption	4e	116	37	47	59	3.39	4.8
279B:							
Rozetta	2e	146	46	58	75	4.70	6.9
279C2:							
Rozetta	3e	138	43	55	71	4.42	6.4
280B:							
Fayette	2e	149	47	59	76	4.70	6.9
280C2:							
Fayette	3e	140	44	56	72	4.42	6.4
280D2:							
Fayette	3e	130	41	52	67	4.11	5.8
280F:							
Fayette	6e	---	---	---	---	3.66	5.3
344B:							
Harvard	2e	152	48	59	78	4.92	7.2
536.							
Dumps							
549D2:							
Marseilles	4e	106	35	43	56	2.69	4.1

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	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
549F:							
Marseilles----------	7e	---	---	---	---	---	3.6
549G:							
Marseilles----------	7e	---	---	---	---	---	---
567B2:							
Elkhart-------------	2e	146	47	56	69	4.51	6.6
567C2:							
Elkhart-------------	3e	143	46	55	68	4.42	6.4
567D2:							
Elkhart-------------	3e	133	42	51	63	4.11	5.9
567D3:							
Elkhart-------------	4e	122	39	47	58	3.75	5.3
660C2:							
Coatsburg-----------	3e	104	35	41	50	3.15	4.7
675B:							
Greenbush-----------	2e	164	52	62	86	4.81	7.2
801B:							
Orthents------------	2e	---	---	---	---	---	---
802B:							
Orthents------------	2e	---	---	---	---	---	---
835G.							
Earthen dams							
863, 864, 865.							
Pits							
871B:							
Lenzburg------------	2e	107	36	41	44	3.58	5.2
871D:							
Lenzburg------------	6e	---	---	---	---	3.29	4.8
871G:							
Lenzburg------------	7e	---	---	---	---	---	---
872B:							
Rapatee-------------	2e	131	45	52	61	3.25	4.7
901B:							
Ipava---------------	1	170	55	68	89	5.26	7.7
Osco----------------	2e	170	53	67	91	6.16	9.0
902A:							
Ipava---------------	1	172	56	69	90	5.31	7.8
Sable---------------	2w	173	57	67	89	5.20	7.7
3074A:							
Radford-------------	3w	150	48	---	---	4.47	6.6

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	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
3107+:							
Sawmill-------------	3w	163	49	---	---	4.70	6.9
3415A:							
Orion---------------	3w	146	46	---	---	4.07	6.0
3451A:							
Lawson--------------	3w	154	50	---	---	4.68	6.9
7081B:							
Littleton-----------	1	173	54	66	89	5.37	7.8
7104A:							
Virgil--------------	1	164	63	87	50	4.97	7.3
8077A:							
Huntsville----------	1	174	55	67	90	6.78	10.0
8239A:							
Dorchester----------	2w	161	47	58	79	5.09	7.5
9017A:							
Keomah--------------	2w	145	46	59	75	4.63	6.8
9086B:							
Osco----------------	2e	170	53	67	91	6.16	9.0
9257A:							
Clarksdale----------	1	157	50	62	80	4.75	7.0
9279B:							
Rozetta-------------	2e	146	46	58	75	4.70	6.9
9279C2:							
Rozetta-------------	3e	138	43	55	71	4.42	6.5
9280B:							
Fayette-------------	2e	149	47	59	76	4.70	6.9
9280C2:							
Fayette-------------	3e	140	44	56	72	4.42	6.4
9675B:							
Greenbush-----------	2e	164	51	62	86	4.81	7.0
M-W.							
Miscellaneous water							
W.							
Water							

* Animal unit month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

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 soil name)

Map symbol	Soil name
17A	Keomah silt loam, 0 to 2 percent slopes (where drained)
43A	Ipava silt loam, 0 to 2 percent slopes
45A	Denny silt loam, 0 to 2 percent slopes (where drained)
68A	Sable silty clay loam, 0 to 2 percent slopes (where drained)
86B	Osco silt loam, 2 to 5 percent slopes
86B2	Osco silt loam, 2 to 5 percent slopes, eroded
131B	Alvin sandy loam, 2 to 5 percent slopes
134B	Camden silt loam, 2 to 5 percent slopes
249A	Edinburg silty clay loam, 0 to 2 percent slopes (where drained)
257A	Clarksdale silt loam, 0 to 2 percent slopes (where drained)
279B	Rozetta silt loam, 2 to 5 percent slopes
280B	Fayette silt loam, 2 to 5 percent slopes
344B	Harvard silt loam, 2 to 5 percent slopes
567B2	Elkhart silt loam, 2 to 5 percent slopes, eroded
675B	Greenbush silt loam, 2 to 5 percent slopes
871B	Lenzburg silty clay loam, 1 to 7 percent slopes
872B	Rapatee silty clay loam, 2 to 5 percent slopes
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3107+	Sawmill silt loam, 0 to 2 percent slopes, frequently flooded, overwash (where drained and either protected from flooding or not frequently flooded during the growing season)
3415A	Orion silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
7081B	Littleton silt loam, 1 to 3 percent slopes, rarely flooded
7104A	Virgil silt loam, 0 to 2 percent slopes, rarely flooded (where drained)
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded
8239A	Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded
9017A	Keomah silt loam, terrace, 0 to 2 percent slopes (where drained)
9086B	Osco silt loam, terrace, 2 to 5 percent slopes
9257A	Clarksdale silt loam, terrace, 0 to 2 percent slopes (where drained)
9279B	Rozetta silt loam, terrace, 2 to 5 percent slopes
9280B	Fayette silt loam, terrace, 2 to 5 percent slopes
9675B	Greenbush silt loam, terrace, 2 to 5 percent slopes

Table 8.--Hydric Soils

(Only the map units that include hydric components are listed. See text for a description of hydric properties)

Map symbol and map unit name	Component	Hydric status	Local landform
17A:			
Keomah silt loam, 0 to 2 percent slopes	Keomah	No	ground moraine
	Denny	Yes	depression
43A:			
Ipava silt loam, 0 to 2 percent slopes	Ipava	No	ground moraine
	Denny	Yes	depression
	Sable	Yes	depression
45A:			
Denny silt loam, 0 to 2 percent slopes	Denny	Yes	depression
	Sable	Yes	depression
68A:			
Sable silty clay loam, 0 to 2 percent slopes	Sable	Yes	ground moraine
86B:			
Osco silt loam, 2 to 5 percent slopes	Osco	No	ground moraine
	Denny	Yes	depression
86B2:			
Osco silt loam, 2 to 5 percent slopes, eroded	Osco	No	ground moraine
	Denny	Yes	depression
249A:			
Edinburg silty clay loam, 0 to 2 percent slopes	Edinburg	Yes	depression
257A:			
Clarksdale silt loam, 0 to 2 percent slopes	Clarksdale	No	ground moraine
	Denny	Yes	depression
259C2:			
Assumption silt loam, 5 to 10 percent slopes, eroded	Assumption	No	ground moraine
	Coatsburg	Yes	ground moraine
259D2:			
Assumption silt loam, 10 to 18 percent slopes, eroded	Assumption	No	ground moraine
	Coatsburg	Yes	ground moraine
259D3:			
Assumption silty clay loam, 10 to 18 percent slopes, severely eroded	Assumption	No	ground moraine
	Coatsburg	Yes	ground moraine
279B:			
Rozetta silt loam, 2 to 5 percent slopes	Rozetta	No	ground moraine
	Denny	Yes	depression
660C2:			
Coatsburg silty clay loam, 5 to 10 percent slopes, eroded	Coatsburg	Yes	ground moraine

Table 8.--Hydric Soils--Continued

Map symbol and map unit name	Component	Hydric status	Local landform
675B:			
Greenbush silt loam, 2 to 5 percent slopes	Greenbush	No	ground moraine
	Denny	Yes	depression
801B:			
Orthents, silty, undulating	Orthents	No	ground moraine
	Sable	Yes	depression
902A:			
Ipava-Sable complex, 0 to 2 percent slopes	Ipava	No	ground moraine
	Sable	Yes	depression
3074A:			
Radford silt loam, 0 to 2 percent slopes, frequently flooded	Radford	No	flood plain
	Sawmill	Yes	flood plain
3107+:			
Sawmill silt loam, 0 to 2 percent slopes, frequently flooded, overwash	Sawmill	Yes	flood plain
3415A:			
Orion silt loam, 0 to 2 percent slopes, frequently flooded	Orion	No	flood plain
	Sawmill	Yes	flood plain
3451A:			
Lawson silt loam, 0 to 2 percent slopes, frequently flooded	Lawson	No	flood plain
	Sawmill	Yes	flood plain
7081B:			
Littleton silt loam, 1 to 3 percent slopes, rarely flooded	Littleton	No	alluvial fan, stream terrace
	Sawmill	Yes	flood plain
8239A:			
Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded	Dorchester	No	flood plain
	Sawmill	Yes	flood plain
9017A:			
Keomah silt loam, terrace, 0 to 2 percent slopes	Keomah	No	stream terrace
	Denny	Yes	depression
9257A:			
Clarksdale silt loam, terrace, 0 to 2 percent slopes	Clarksdale	No	stream terrace
	Denny	Yes	depression

Table 9.--Forestland Productivity

(Only the soils commonly used for the production of commercial trees are listed)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber*	Suggested trees to plant
7D3:				
Atlas	Bur oak	70	57	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
	Green ash	---	---	
	Northern red oak	70	57	
	White oak	70	57	
8D2:				
Hickory	Bitternut hickory	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	Tuliptree	95	100	
	White oak	85	72	
8F:				
Hickory	Bitternut hickory	---	---	Eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	Tuliptree	95	100	
	White oak	85	72	
8F2:				
Hickory	Bitternut hickory	---	---	Eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	Tuliptree	95	100	
	White oak	85	72	
8G:				
Hickory	Bitternut hickory	---	---	Eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Black oak	---	---	
	Green ash	---	---	
	Northern red oak	85	72	
	Tuliptree	95	100	
	White oak	85	72	
17A:				
Keomah	Northern red oak	70	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	White oak	65	43	
19C3:				
Sylvan	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
19D3:				
Sylvan	Northern red oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	80	57	
	Tuliptree	90	86	
	Black walnut	---	---	

See footnote at end of table.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber*	Suggested trees to plant
43A:				
Ipava	---	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
45A:				
Denny	---	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
68A:				
Sable	---	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
86B:				
Osco	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
86B2:				
Osco	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
86C:				
Osco	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
86C2:				
Osco	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
86D2:				
Osco	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
119D2:				
Elco	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	White oak	85	72	

See footnote at end of table.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber*	Suggested trees to plant
119E2:				
Elco	Black walnut	---	---	Eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	White oak	85	72	
131B:				
Alvin	Black walnut	---	---	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
131D:				
Alvin	Black walnut	---	---	Black walnut, bur oak, eastern white pine, pecan, pin oak, tuliptree.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
131F:				
Alvin	Black walnut	---	---	Bur oak, eastern white pine, pecan, pin oak, tuliptree.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
134B:				
Camden	Green ash	76	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	85	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
	White oak	85	72	
134C2:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	85	72	
	Green ash	76	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
134D2:				
Camden	Northern red oak	85	72	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	85	72	
	Green ash	76	72	
	Sweetgum	80	86	
	Tuliptree	95	100	
249A:				
Edinburg	---	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
257A:				
Clarksdale	White oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	Northern red oak	80	57	

See footnote at end of table.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber*	Suggested trees to plant
259C2:				
Assumption	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
259D2:				
Assumption	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
259D3:				
Assumption	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
279B:				
Rozetta	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	Black walnut	---	---	
279C2:				
Rozetta	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
280B:				
Fayette	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
280C2:				
Fayette	Northern red oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	80	57	
	Black walnut	---	---	
	Tuliptree	90	86	
280D2:				
Fayette	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	

See footnote at end of table.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber*	Suggested trees to plant
280F:				
Fayette	Black walnut	---	---	Eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
344B:				
Harvard	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
549D2:				
Marseilles	Black oak	---	---	Black oak, common hackberry, eastern white pine, green ash.
	Northern red oak	66	43	
	White ash	---	---	
	White oak	66	29	
549F:				
Marseilles	Black oak	---	---	Black oak, common hackberry, eastern white pine, green ash.
	Northern red oak	66	43	
	White ash	---	---	
	White oak	66	29	
549G:				
Marseilles	Black oak	---	---	Black oak, common hackberry, eastern white pine, green ash.
	Northern red oak	66	43	
	White ash	---	---	
	White oak	66	29	
567B2:				
Elkhart	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
567C2:				
Elkhart	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
567D2:				
Elkhart	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
567D3:				
Elkhart	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.

See footnote at end of table.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber*	Suggested trees to plant
675B:				
Greenbush	White oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Black walnut	---	---	
	Tuliptree	90	86	
801B:				
Orthents	---	---	---	Black locust, black walnut, green ash, northern red oak, tuliptree, white oak.
802B:				
Orthents	---	---	---	Black locust, black walnut, green ash, northern red oak, tuliptree, white oak.
871B:				
Lenzburg	Black walnut	73	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood, green ash.
	Eastern cottonwood	---	---	
	Sweetgum	76	72	
871D:				
Lenzburg	Black walnut	73	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Eastern cottonwood	---	---	
	Sweetgum	76	72	
871G:				
Lenzburg	Black walnut	73	---	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, eastern cottonwood, green ash.
	Eastern cottonwood	---	---	
	Sweetgum	76	72	
872B:				
Rapatee	---	---	---	Eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
901B:				
Ipava	---	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
Osco	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.

See footnote at end of table.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber*	
902A:				
Ipava	---	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
Sable	---	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum.
3074A:				
Radford	Eastern cottonwood	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	Pin oak	96	72	
	Sweetgum	86	100	
	Tuliptree	90	86	
	White ash	---	---	
3107+:				
Sawmill	American sycamore	---	---	Common hackberry, eastern cottonwood, green ash, pin oak, river birch, swamp white oak, sweetgum, tamarack.
	Cherrybark oak	---	---	
	Eastern cottonwood	---	---	
	Pin oak	90	72	
	Sweetgum	---	---	
3415A:				
Orion	Red maple	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	Silver maple	80	29	
	White ash	---	---	
3451A:				
Lawson	Silver maple	70	29	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	White ash	---	---	
7081B:				
Littleton	---	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
7104A:				
Virgil	Black walnut	---	---	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	Northern red oak	80	57	
	White oak	80	57	
8077A:				
Huntsville	Eastern cottonwood	110	157	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	American sycamore	---	---	
	Green ash	---	---	

See footnote at end of table.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber*	
8239A:				
Dorchester	Northern red oak	55	43	Bur oak, common hackberry, eastern cottonwood, eastern redcedar, green ash.
	White oak	55	43	
9017A:				
Keomah	Northern red oak	70	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	White oak	65	43	
9086B:				
Osco	---	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
9257A:				
Clarksdale	Northern red oak	80	57	Common hackberry, common persimmon, eastern cottonwood, green ash, pecan, pin oak, swamp white oak.
	White oak	80	57	
	Tuliptree	90	86	
	Black walnut	---	---	
9279B:				
Rozetta	Northern red oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	80	57	
	Tuliptree	90	86	
	Black walnut	---	---	
9279C2:				
Rozetta	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
9280B:				
Fayette	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	
9280C2:				
Fayette	Northern red oak	80	57	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak	80	57	
	Black walnut	---	---	
	Tuliptree	90	86	

See footnote at end of table.

Table 9.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber*	Suggested trees to plant
9675B:				
Greenbush	Black walnut	---	---	Black walnut, eastern cottonwood, eastern white pine, green ash, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak	80	57	
	Tuliptree	90	86	
	White oak	80	57	

* Volume is the yield in cubic feet per acre per year calculated at the age of culmination of the mean annual increment for fully stocked natural stands.

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	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
7D3:						
Atlas-----------	Moderate		Poorly suited		Severe	
	Stickiness/slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Wetness	0.50		
			Low strength	0.50		
			Stickiness	0.50		
8D2:						
Hickory---------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
8F:						
Hickory---------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
8F2:						
Hickory---------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
8G:						
Hickory---------	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
17A:						
Keomah----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
19C3:						
Sylvan----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
19D3:						
Sylvan----------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
43A:						
Ipava-----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
45A:						
Denny-----------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A:						
Sable	Moderate		Poorly suited		Severe	
	Low strength	0.50	Wetness	1.00	Low strength	1.00
			Ponding	0.50		
			Low strength	0.50		
86B:						
Osco	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
86B2:						
Osco	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
86C:						
Osco	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
86C2:						
Osco	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
86D2:						
Osco	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
119D2:						
Elco	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
119E2:						
Elco	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
131B:						
Alvin	Slight		Well suited		Moderate	
					Low strength	0.50
131D:						
Alvin	Slight		Poorly suited		Moderate	
			Slope	1.00	Low strength	0.50
131F:						
Alvin	Moderate		Poorly suited		Moderate	
	Slope	0.50	Slope	1.00	Low strength	0.50
134B:						
Camden	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
134C2:						
Camden	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134D2:						
Camden----------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
249A:						
Edinburg--------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Ponding	1.00	Low strength	1.00
			Wetness	1.00		
			Low strength	0.50		
257A:						
Clarksdale------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
259C2:						
Assumption------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
259D2:						
Assumption------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
259D3:						
Assumption------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
279B:						
Rozetta---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
279C2:						
Rozetta---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
280B:						
Fayette---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
280C2:						
Fayette---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
280D2:						
Fayette---------	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
280F:						
Fayette---------	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
344B:						
Harvard	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
536:						
Dumps	Not rated		Not rated		Not rated	
549D2:						
Marseilles	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
549F:						
Marseilles	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
549G:						
Marseilles	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
567B2:						
Elkhart	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
567C2:						
Elkhart	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
567D2:						
Elkhart	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
567D3:						
Elkhart	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
660C2:						
Coatsburg	Moderate		Poorly suited		Severe	
	Low strength	0.50	Wetness	1.00	Low strength	1.00
			Low strength	0.50		
			Slope	0.50		
675B:						
Greenbush	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
801B:						
Orthents	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
802B:						
Orthents	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	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
835G:						
Earthen dams	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
871D:						
Lenzburg	Moderate		Poorly suited		Severe	
	Low strength	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
871G:						
Lenzburg	Severe		Poorly suited		Severe	
	Slope	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
872B:						
Rapatee	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
901B:						
Ipava	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
Osco	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
902A:						
Ipava	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
Sable	Moderate		Poorly suited		Severe	
	Low strength	0.50	Wetness	1.00	Low strength	1.00
			Ponding	0.50		
			Low strength	0.50		
3074A:						
Radford	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
3107+:						
Sawmill	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Wetness	0.50		
			Low strength	0.50		
3415A:						
Orion	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3451A:						
Lawson----------	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
7081B:						
Littleton-------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
7104A:						
Virgil----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Wetness	0.50		
8077A:						
Huntsville------	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
8239A:						
Dorchester------	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
9017A:						
Keomah----------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
9086B:						
Osco------------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
9257A:						
Clarksdale------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Wetness	0.50	Low strength	1.00
			Low strength	0.50		
9279B:						
Rozetta---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
9279C2:						
Rozetta---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
9280B:						
Fayette---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
9280C2:						
Fayette---------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		

Table 10a.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9675B:						
Greenbush-------	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
M-W.						
Miscellaneous water						
W.						
Water						

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	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
7D3:						
Atlas	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Wetness	0.50
					Low strength	0.50
					Stickiness	0.50
8D2:						
Hickory	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
8F:						
Hickory	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
8F2:						
Hickory	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
8G:						
Hickory	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
17A:						
Keomah	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
19C3:						
Sylvan	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
19D3:						
Sylvan	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
43A:						
Ipava	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
45A:						
Denny	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
68A:						
Sable	Slight		Slight		Poorly suited	
					Wetness	1.00
					Ponding	0.50
					Low strength	0.50
86B:						
Osco	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
86B2:						
Osco	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
86C:						
Osco	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
86C2:						
Osco	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
86D2:						
Osco	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
119D2:						
Elco	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
119E2:						
Elco	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
131B:						
Alvin	Slight		Moderate		Well suited	
			Slope/erodibility	0.50		
131D:						
Alvin	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
131F:						
Alvin	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
134B:						
Camden	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
134C2:						
Camden	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134D2:						
Camden	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
249A:						
Edinburg	Slight		Slight		Poorly suited	
					Ponding	1.00
					Wetness	1.00
					Low strength	0.50
257A:						
Clarksdale	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
259C2:						
Assumption	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
259D2:						
Assumption	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
259D3:						
Assumption	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
279B:						
Rozetta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
279C2:						
Rozetta	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
280B:						
Fayette	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
280C2:						
Fayette	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
280D2:						
Fayette	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
280F:						
Fayette	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
344B:						
Harvard	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
536:						
Dumps	Not rated		Not rated		Not rated	
549D2:						
Marseilles	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
549F:						
Marseilles	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
549G:						
Marseilles	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
567B2:						
Elkhart	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
567C2:						
Elkhart	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
567D2:						
Elkhart	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
567D3:						
Elkhart	Moderate		Severe		Poorly suited	
	Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
660C2:						
Coatsburg	Slight		Moderate		Poorly suited	
			Slope/erodibility	0.50	Wetness	1.00
					Low strength	0.50
					Slope	0.50
675B:						
Greenbush	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
801B:						
Orthents	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
802B:						
Orthents	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
835G:						
Earthen dams	Not rated		Not rated		Not rated	

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
863, 864, 865:						
Pits	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
871D:						
Lenzburg	Slight		Severe		Poorly suited	
			Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
871G:						
Lenzburg	Severe		Severe		Poorly suited	
	Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
					Low strength	0.50
872B:						
Rapatee	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
901B:						
Ipava	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
Osco	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
902A:						
Ipava	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
Sable	Slight		Slight		Poorly suited	
					Wetness	1.00
					Ponding	0.50
					Low strength	0.50
3074A:						
Radford	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
3107+:						
Sawmill	Slight		Slight		Poorly suited	
					Flooding	1.00
					Wetness	0.50
					Low strength	0.50
3415A:						
Orion	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
3451A:						
Lawson----------------	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
					Wetness	0.50
7081B:						
Littleton------------	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
7104A:						
Virgil---------------	Slight		Slight		Moderately suited	
					Low strength	0.50
					Wetness	0.50
8077A:						
Huntsville-----------	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
8239A:						
Dorchester-----------	Slight		Slight		Poorly suited	
					Flooding	1.00
					Low strength	0.50
9017A:						
Keomah---------------	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
9086B:						
Osco-----------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
9257A:						
Clarksdale-----------	Slight		Slight		Moderately suited	
					Wetness	0.50
					Low strength	0.50
9279B:						
Rozetta--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
9279C2:						
Rozetta--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
9280B:						
Fayette--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
9280C2:						
Fayette--------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50
					Slope	0.50
9675B:						
Greenbush------------	Slight		Moderate		Moderately suited	
			Slope/erodibility	0.50	Low strength	0.50

Table 10b.--Forestland Management--Continued

Map symbol and soil name	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
M-W. Miscellaneous water						
W. Water						

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	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
7D3:						
Atlas	Poorly suited		Poorly suited		Moderately suited	
	Stickiness	0.75	Stickiness	0.75	Low strength	0.50
			Slope	0.50	Stickiness	0.50
8D2:						
Hickory	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
8F:						
Hickory	Moderately suited		Unsuited		Moderately suited	
	Stickiness	0.50	Slope	1.00	Low strength	0.50
			Stickiness	0.50	Slope	0.50
8F2:						
Hickory	Moderately suited		Unsuited		Moderately suited	
	Stickiness	0.50	Slope	1.00	Low strength	0.50
			Stickiness	0.50	Slope	0.50
8G:						
Hickory	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
17A:						
Keomah	Well suited		Well suited		Moderately suited	
					Low strength	0.50
19C3:						
Sylvan	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
19D3:						
Sylvan	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
43A:						
Ipava	Well suited		Well suited		Moderately suited	
					Low strength	0.50
45A:						
Denny	Well suited		Well suited		Moderately suited	
					Low strength	0.50
68A:						
Sable	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
86B:						
Osco	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
86B2:						
Osco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
86C:						
Osco	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
86C2:						
Osco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
86D2:						
Osco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
119D2:						
Elco	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
119E2:						
Elco	Moderately suited		Poorly suited		Moderately suited	
	Stickiness	0.50	Slope	0.75	Low strength	0.50
			Stickiness	0.50	Slope	0.50
131B:						
Alvin	Well suited		Well suited		Well suited	
131D:						
Alvin	Well suited		Moderately suited		Well suited	
			Slope	0.50		
131F:						
Alvin	Well suited		Unsuited		Moderately suited	
			Slope	1.00	Slope	0.50
134B:						
Camden	Well suited		Well suited		Moderately suited	
					Low strength	0.50
134C2:						
Camden	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
134D2:						
Camden	Well suited		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
249A:						
Edinburg	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
257A:						
Clarksdale	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
259C2:						
Assumption----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
259D2:						
Assumption----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
259D3:						
Assumption----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
279B:						
Rozetta-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
279C2:						
Rozetta-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
280B:						
Fayette-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
280C2:						
Fayette-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
280D2:						
Fayette-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
280F:						
Fayette-------------	Moderately suited		Unsuited		Moderately suited	
	Stickiness	0.50	Slope	1.00	Low strength	0.50
			Stickiness	0.50	Slope	0.50
344B:						
Harvard-------------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
536:						
Dumps---------------	Not rated		Not rated		Not rated	
549D2:						
Marseilles----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
549F:						
Marseilles----------	Moderately suited		Unsuited		Moderately suited	
	Stickiness	0.50	Slope	1.00	Low strength	0.50
			Stickiness	0.50	Slope	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
549G:						
Marseilles----------	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
567B2:						
Elkhart------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
567C2:						
Elkhart------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
567D2:						
Elkhart------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
567D3:						
Elkhart------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
660C2:						
Coatsburg----------	Poorly suited		Poorly suited		Moderately suited	
	Stickiness	0.75	Stickiness	0.75	Low strength	0.50
			Slope	0.50		
675B:						
Greenbush----------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
801B:						
Orthents-----------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
802B:						
Orthents-----------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
835G:						
Earthen dams--------	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits----------------	Not rated		Not rated		Not rated	
871B:						
Lenzburg-----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
871D:						
Lenzburg-----------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
871G:						
Lenzburg-----------	Moderately suited		Unsuited		Poorly suited	
	Slope	0.50	Slope	1.00	Slope	1.00
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
			Rock fragments	0.50		

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
872B:						
Rapatee	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
901B:						
Ipava	Well suited		Well suited		Moderately suited	
					Low strength	0.50
Osco	Well suited		Well suited		Moderately suited	
					Low strength	0.50
902A:						
Ipava	Well suited		Well suited		Moderately suited	
					Low strength	0.50
Sable	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
3074A:						
Radford	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3107+:						
Sawmill	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
3415A:						
Orion	Well suited		Well suited		Moderately suited	
					Low strength	0.50
3451A:						
Lawson	Well suited		Well suited		Moderately suited	
					Low strength	0.50
7081B:						
Littleton	Well suited		Well suited		Moderately suited	
					Low strength	0.50
7104A:						
Virgil	Well suited		Well suited		Moderately suited	
					Low strength	0.50
8077A:						
Huntsville	Well suited		Well suited		Moderately suited	
					Low strength	0.50
8239A:						
Dorchester	Well suited		Well suited		Moderately suited	
					Low strength	0.50
9017A:						
Keomah	Well suited		Well suited		Moderately suited	
					Low strength	0.50
9086B:						
Osco	Well suited		Well suited		Moderately suited	
					Low strength	0.50
9257A:						
Clarksdale	Well suited		Well suited		Moderately suited	
					Low strength	0.50

Table 10c.--Forestland Management--Continued

Map symbol and soil name	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for use of harvesting equipment: Rating class and limiting features	Value
9279B:						
Rozetta-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
9279C2:						
Rozetta-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
9280B:						
Fayette-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Stickiness	0.50	Low strength	0.50
9280C2:						
Fayette-------------	Moderately suited		Moderately suited		Moderately suited	
	Stickiness	0.50	Slope	0.50	Low strength	0.50
			Stickiness	0.50		
9675B:						
Greenbush-----------	Well suited		Well suited		Moderately suited	
					Low strength	0.50
M-W.						
Miscellaneous water						
W.						
Water						

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	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:				
Atlas	Poorly suited		Well suited	
	Stickiness	0.50		
8D2:				
Hickory	Well suited		Well suited	
8F:				
Hickory	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
8F2:				
Hickory	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
8G:				
Hickory	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
17A:				
Keomah	Well suited		Well suited	
19C3:				
Sylvan	Well suited		Well suited	
19D3:				
Sylvan	Well suited		Well suited	
43A:				
Ipava	Well suited		Well suited	
45A:				
Denny	Well suited		Well suited	
68A:				
Sable	Well suited		Well suited	
86B:				
Osco	Well suited		Well suited	
86B2:				
Osco	Well suited		Well suited	
86C:				
Osco	Well suited		Well suited	
86C2:				
Osco	Well suited		Well suited	
86D2:				
Osco	Well suited		Well suited	

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
119D2:				
Elco	Well suited		Well suited	
119E2:				
Elco	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
131B:				
Alvin	Well suited		Well suited	
131D:				
Alvin	Well suited		Well suited	
131F:				
Alvin	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
134B:				
Camden	Well suited		Well suited	
134C2:				
Camden	Well suited		Well suited	
134D2:				
Camden	Well suited		Well suited	
249A:				
Edinburg	Well suited		Well suited	
257A:				
Clarksdale	Well suited		Well suited	
259C2:				
Assumption	Well suited		Well suited	
259D2:				
Assumption	Well suited		Well suited	
259D3:				
Assumption	Well suited		Well suited	
279B:				
Rozetta	Well suited		Well suited	
279C2:				
Rozetta	Well suited		Well suited	
280B:				
Fayette	Well suited		Well suited	
280C2:				
Fayette	Well suited		Well suited	
280D2:				
Fayette	Well suited		Well suited	
280F:				
Fayette	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
344B:				
Harvard-------------	Well suited		Well suited	
536:				
Dumps---------------	Not rated		Not rated	
549D2:				
Marseilles----------	Well suited		Well suited	
549F:				
Marseilles----------	Poorly suited		Poorly suited	
	Slope	0.50	Slope	0.50
549G:				
Marseilles----------	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00
567B2:				
Elkhart-------------	Well suited		Well suited	
567C2:				
Elkhart-------------	Well suited		Well suited	
567D2:				
Elkhart-------------	Well suited		Well suited	
567D3:				
Elkhart-------------	Well suited		Well suited	
660C2:				
Coatsburg-----------	Poorly suited		Well suited	
	Stickiness	0.50		
675B:				
Greenbush-----------	Well suited		Well suited	
801B:				
Orthents------------	Well suited		Well suited	
802B:				
Orthents------------	Well suited		Well suited	
835G:				
Earthen dams--------	Not rated		Not rated	
863, 864, 865:				
Pits----------------	Not rated		Not rated	
871B:				
Lenzburg------------	Well suited		Well suited	
871D:				
Lenzburg------------	Well suited		Well suited	
871G:				
Lenzburg------------	Unsuited		Unsuited	
	Slope	1.00	Slope	1.00

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface): Rating class and limiting features	Value	Suitability for mechanical site preparation (deep): Rating class and limiting features	Value
872B:				
Rapatee	Well suited		Well suited	
901B:				
Ipava	Well suited		Well suited	
Osco	Well suited		Well suited	
902A:				
Ipava	Well suited		Well suited	
Sable	Well suited		Well suited	
3074A:				
Radford	Well suited		Well suited	
3107+:				
Sawmill	Well suited		Well suited	
3415A:				
Orion	Well suited		Well suited	
3451A:				
Lawson	Well suited		Well suited	
7081B:				
Littleton	Well suited		Well suited	
7104A:				
Virgil	Well suited		Well suited	
8077A:				
Huntsville	Well suited		Well suited	
8239A:				
Dorchester	Well suited		Well suited	
9017A:				
Keomah	Well suited		Well suited	
9086B:				
Osco	Well suited		Well suited	
9257A:				
Clarksdale	Well suited		Well suited	
9279B:				
Rozetta	Well suited		Well suited	
9279C2:				
Rozetta	Well suited		Well suited	
9280B:				
Fayette	Well suited		Well suited	
9280C2:				
Fayette	Well suited		Well suited	

Table 10d.--Forestland Management--Continued

Map symbol and soil name	Suitability for mechanical site preparation (surface)		Suitability for mechanical site preparation (deep)	
	Rating class and limiting features	Value	Rating class and limiting features	Value
9675B:				
Greenbush-----------	Well suited		Well suited	
M-W.				
Miscellaneous water				
W.				
Water				

Table 10e.--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	Potential for seedling mortality	
	Rating class and limiting features	Value
7D3:		
Atlas	High	
	Wetness	1.00
8D2:		
Hickory	Low	
8F:		
Hickory	Low	
8F2:		
Hickory	Low	
8G:		
Hickory	Low	
17A:		
Keomah	High	
	Wetness	1.00
19C3:		
Sylvan	Low	
19D3:		
Sylvan	Low	
43A:		
Ipava	Low	
45A:		
Denny	High	
	Wetness	1.00
68A:		
Sable	High	
	Wetness	1.00
86B:		
Osco	Low	
86B2:		
Osco	Low	
86C:		
Osco	Low	
86C2:		
Osco	Low	

Table 10e.--Forestland Management-Continued

Map symbol and soil name	Potential for seedling mortality	
	Rating class and limiting features	Value
86D2:		
Osco	Low	
119D2:		
Elco	Low	
119E2:		
Elco	Low	
131B:		
Alvin	Low	
131D:		
Alvin	Low	
131F:		
Alvin	Low	
134B:		
Camden	Low	
134C2:		
Camden	Low	
134D2:		
Camden	Low	
249A:		
Edinburg	High	
	Wetness	1.00
257A:		
Clarksdale	High	
	Wetness	1.00
259C2:		
Assumption	Low	
259D2:		
Assumption	Low	
259D3:		
Assumption	Low	
279B:		
Rozetta	Low	
279C2:		
Rozetta	Low	
280B:		
Fayette	Low	
280C2:		
Fayette	Low	
280D2:		
Fayette	Low	

Table 10e.--Forestland Management-Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
280F:		
Fayette	Low	
344B:		
Harvard	Low	
536:		
Dumps	Not rated	
549D2:		
Marseilles	Low	
549F:		
Marseilles	Low	
549G:		
Marseilles	Low	
567B2:		
Elkhart	Low	
567C2:		
Elkhart	Low	
567D2:		
Elkhart	Low	
567D3:		
Elkhart	Low	
660C2:		
Coatsburg	High	
	Wetness	1.00
675B:		
Greenbush	Low	
801B:		
Orthents	Low	
802B:		
Orthents	Low	
835G:		
Earthen dams	Not rated	
863, 864, 865:		
Pits	Not rated	
871B:		
Lenzburg	Low	
871D:		
Lenzburg	Low	
871G:		
Lenzburg	Low	
872B:		
Rapatee	Low	

Table 10e.--Forestland Management-Continued

Map symbol and soil name	Potential for seedling mortality: Rating class and limiting features	Value
901B:		
Ipava	Low	
Osco	Low	
902A:		
Ipava	Low	
Sable	High	
	Wetness	1.00
3074A:		
Radford	Low	
3107+:		
Sawmill	High	
	Wetness	1.00
3415A:		
Orion	Low	
3451A:		
Lawson	Low	
7081B:		
Littleton	Low	
7104A:		
Virgil	Low	
8077A:		
Huntsville	Low	
8239A:		
Dorchester	Moderate	
	Lime	0.50
9017A:		
Keomah	High	
	Wetness	1.00
9086B:		
Osco	Low	
9257A:		
Clarksdale	High	
	Wetness	1.00
9279B:		
Rozetta	Low	
9279C2:		
Rozetta	Low	
9280B:		
Fayette	Low	
9280C2:		
Fayette	Low	

Table 10e.--Forestland Management-Continued

Map symbol and soil name	Potential for seedling mortality	
	Rating class and limiting features	Value
9675B:		
Greenbush-----------	Low	
M-W.		
Miscellaneous water		
W.		
Water		

Table 11.--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
7D3:					
Atlas	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar
8D2, 8F, 8F2, 8G:					
Hickory	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
17A:					
Keomah	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--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
19C3, 19D3:					
Sylvan	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
43A:					
Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
45A:					
Denny	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--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
68A: Sable	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
86B, 86B2, 86C, 86C2, 86D2: Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
119D2, 119E2: Elco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
131B, 131D, 131F: Alvin	American hazelnut, black chokeberry, common winterberry, coralberry, gray dogwood, mapleleaf viburnum	American plum, American witchhazel, Arnold hawthorn, blackhaw, common chokecherry, common serviceberry, prairie crabapple	Douglas fir, arborvitae, black walnut, blackgum, blue spruce, bur oak, eastern redcedar, green ash, pecan	Norway spruce, common hackberry, pin oak, tuliptree	Carolina poplar, eastern white pine

Table 11.--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
134B, 134C2, 134D2:					
Camden	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
249A:					
Edinburg	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
257A:					
Clarksdale	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--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
259C2, 259D2, 259D3: Assumption	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
279B, 279C2: Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
280B, 280C2, 280D2, 280F: Fayette	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
344B: Harvard	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 11.--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
536. Dumps					
549D2, 549F, 549G: Marseilles	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine, green ash	Carolina poplar	---
567B2, 567C2, 567D2, 567D3: Elkhart	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
660C2: Coatsburg	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--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
675B:					
Greenbush	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
801B, 802B. Orthents					
835G. Earthen dams					
863, 864, 865. Pits					
871B, 871D, 871G:					
Lenzburg	American hazelnut, coralberry, mapleleaf viburnum, redosier dogwood	Common serviceberry, downy arrowwood, eastern redcedar, southern arrowwood	Austrian pine, blue spruce, bur oak, chinkapin oak, common hackberry, green ash	Eastern cottonwood	Carolina poplar
872B:					
Rapatee	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar, green ash	Norway spruce	Carolina poplar

Table 11.--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
901B:					
Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
902A:					
Ipava	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--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
902A:					
Sable	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3074A:					
Radford	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3107+:					
Sawmill	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Green ash, red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--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
3415A:					
Orion	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3451A:					
Lawson	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
7081B:					
Littleton	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--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
7104A:					
Virgil	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8077A:					
Huntsville	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8239A:					
Dorchester	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 11.--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
9017A: Keomah	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
9086B: Osco	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
9257A: Clarksdale	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, green ash, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--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
9279B, 9279C2:					
Rozetta	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
9280B, 9280C2:					
Fayette	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
9675B:					
Greenbush	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, green ash, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
M-W. Miscellaneous water					
W. Water					

Table 12a.--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	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:						
Atlas	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.96	Slope	1.00
	Slope	0.96	Depth to saturated zone	0.94	Restricted permeability	1.00
8D2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
8F:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
8F2:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
17A:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96
19C3:						
Sylvan	Not limited		Not limited		Very limited	
					Slope	1.00
19D3:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
45A:						
Denny	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
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
86B:						
Osco	Not limited		Not limited		Somewhat limited	
					Slope	0.28
86B2:						
Osco	Not limited		Not limited		Somewhat limited	
					Slope	0.28
86C:						
Osco	Not limited		Not limited		Very limited	
					Slope	1.00
86C2:						
Osco	Not limited		Not limited		Very limited	
					Slope	1.00
86D2:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
119D2:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
119E2:						
Elco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
131B:						
Alvin	Not limited		Not limited		Somewhat limited	
					Slope	0.28
131D:						
Alvin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
131F:						
Alvin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
134B:						
Camden	Not limited		Not limited		Somewhat limited	
					Slope	0.28
134C2:						
Camden	Not limited		Not limited		Very limited	
					Slope	1.00
134D2:						
Camden	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
249A:						
Edinburg------------	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
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
257A:						
Clarksdale----------	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
259C2:						
Assumption----------	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	1.00
					Restricted permeability	0.43
259D2:						
Assumption----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
259D3:						
Assumption----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
279B:						
Rozetta-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
279C2:						
Rozetta-------------	Not limited		Not limited		Very limited	
					Slope	1.00
280B:						
Fayette-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
280C2:						
Fayette-------------	Not limited		Not limited		Very limited	
					Slope	1.00
280D2:						
Fayette-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
280F:						
Fayette-------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
344B:						
Harvard-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
536:						
Dumps	Not rated		Not rated		Not rated	
549D2:						
Marseilles	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
	Slope	0.96	Slope	0.96	Restricted permeability	0.96
					Depth to bedrock	0.71
549F:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Depth to bedrock	0.10
549G:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
					Depth to bedrock	0.10
567B2:						
Elkhart	Not limited		Not limited		Somewhat limited	
					Slope	0.28
567C2:						
Elkhart	Not limited		Not limited		Very limited	
					Slope	1.00
567D2:						
Elkhart	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
567D3:						
Elkhart	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
660C2:						
Coatsburg	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Restricted permeability	1.00	Restricted permeability	1.00
					Slope	1.00
675B:						
Greenbush	Not limited		Not limited		Somewhat limited	
					Slope	0.28
801B:						
Orthents	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.39	Depth to saturated zone	0.19	Slope	0.50
					Depth to saturated zone	0.39

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
802B:						
Orthents	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
835G:						
Earthen dams	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Gravel content	0.47
					Restricted permeability	0.21
871D:						
Lenzburg	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.91	Slope	0.91	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Gravel content	0.47
					Restricted permeability	0.21
871G:						
Lenzburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Gravel content	0.47
					Restricted permeability	0.21
872B:						
Rapatee	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
					Slope	0.28
901B:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Osco	Not limited		Not limited		Somewhat limited	
					Slope	0.28
902A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Sable	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

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
3074A:						
Radford	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
3107+:						
Sawmill	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
3415A:						
Orion	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
3451A:						
Lawson	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
7081B:						
Littleton	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				
7104A:						
Virgil	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				
8077A:						
Huntsville	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
8239A:						
Dorchester	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
9017A:						
Keomah	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Restricted permeability	0.96	Depth to saturated zone	1.00
	Restricted permeability	0.96	Depth to saturated zone	0.94	Restricted permeability	0.96
9086B:						
Osco	Not limited		Not limited		Somewhat limited	
					Slope	0.28
9257A:						
Clarksdale	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 12a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9279B:						
Rozetta-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
9279C2:						
Rozetta-------------	Not limited		Not limited		Very limited	
					Slope	1.00
9280B:						
Fayette-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
9280C2:						
Fayette-------------	Not limited		Not limited		Very limited	
					Slope	1.00
9675B:						
Greenbush-----------	Not limited		Not limited		Somewhat limited	
					Slope	0.28
M-W.						
Miscellaneous water						
W.						
Water						

Table 12b.--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	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
7D3:						
Atlas	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Slope	0.96
					Depth to saturated zone	0.94
8D2:						
Hickory	Not limited		Not limited		Somewhat limited	
					Slope	0.96
8F, 8F2:						
Hickory	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.04	Slope	1.00
8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
17A:						
Keomah	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
19C3:						
Sylvan	Not limited		Not limited		Not limited	
19D3:						
Sylvan	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
43A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
45A:						
Denny	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
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
86B, 86B2, 86C, 86C2:						
Osco	Not limited		Not limited		Not limited	
86D2:						
Osco	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96

Table 12b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
119D2:						
Elco----------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
119E2:						
Elco----------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.82				
131B:						
Alvin---------------	Not limited		Not limited		Not limited	
131D:						
Alvin---------------	Not limited		Not limited		Somewhat limited	
					Slope	0.96
131F:						
Alvin---------------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.04	Slope	1.00
134B, 134C2:						
Camden--------------	Not limited		Not limited		Not limited	
134D2:						
Camden--------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
249A:						
Edinburg------------	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
257A:						
Clarksdale----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
259C2:						
Assumption----------	Not limited		Not limited		Not limited	
259D2, 259D3:						
Assumption----------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
279B, 279C2:						
Rozetta-------------	Not limited		Not limited		Not limited	
280B, 280C2:						
Fayette-------------	Not limited		Not limited		Not limited	
280D2:						
Fayette-------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
280F:						
Fayette-------------	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.02		

Table 12b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
344B:						
Harvard-------------	Not limited		Not limited		Not limited	
536:						
Dumps---------------	Not rated		Not rated		Not rated	
549D2:						
Marseilles----------	Not limited		Not limited		Somewhat limited	
					Slope	0.96
					Depth to bedrock	0.71
549F:						
Marseilles----------	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.04	Slope	1.00
					Depth to bedrock	0.10
549G:						
Marseilles----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.10
567B2, 567C2:						
Elkhart-------------	Not limited		Not limited		Not limited	
567D2:						
Elkhart-------------	Not limited		Not limited		Somewhat limited	
					Slope	0.96
567D3:						
Elkhart-------------	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.96
660C2:						
Coatsburg-----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
675B:						
Greenbush-----------	Not limited		Not limited		Not limited	
801B:						
Orthents------------	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
802B:						
Orthents------------	Not limited		Not limited		Not limited	
835G:						
Earthen dams--------	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits----------------	Not rated		Not rated		Not rated	
871B:						
Lenzburg------------	Not limited		Not limited		Not limited	
871D:						
Lenzburg------------	Not limited		Not limited		Somewhat limited	
					Slope	0.91

Table 12b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
871G:						
Lenzburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
872B:						
Rapatee	Not limited		Not limited		Not limited	
901B:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
Osco	Not limited		Not limited		Not limited	
902A:						
Ipava	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
Sable	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
3074A:						
Radford	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
3107+:						
Sawmill	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
3415A:						
Orion	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
3451A:						
Lawson	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
7081B:						
Littleton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
7104A:						
Virgil	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
8077A:						
Huntsville	Not limited		Not limited		Somewhat limited	
					Flooding	0.60

Table 12b.--Recreational Development--Continued

Map symbol and soil name	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
8239A:						
Dorchester	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
9017A:						
Keomah	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
9086B:						
Osco	Not limited		Not limited		Not limited	
9257A:						
Clarksdale	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
9279B, 9279C2:						
Rozetta	Not limited		Not limited		Not limited	
9280B, 9280C2:						
Fayette	Not limited		Not limited		Not limited	
9675B:						
Greenbush	Not limited		Not limited		Not limited	
M-W.						
Miscellaneous water						
W.						
Water						

Table 13.--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							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
7D3:										
Atlas	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
8D2:										
Hickory	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
8F:										
Hickory	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
8F2:										
Hickory	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
8G:										
Hickory	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
17A:										
Keomah	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
19C3:										
Sylvan	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
19D3:										
Sylvan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
43A:										
Ipava	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
45A:										
Denny	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
68A:										
Sable	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
86B:										
Osco	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
86B2:										
Osco	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
86C:										
Osco	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
86C2:										
Osco	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 13.--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
86D2:										
Osco	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
119D2:										
Elco	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
119E2:										
Elco	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
131B:										
Alvin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
131D:										
Alvin	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
131F:										
Alvin	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
134B:										
Camden	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
134C2:										
Camden	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
134D2:										
Camden	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
249A:										
Edinburg	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
257A:										
Clarksdale	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
259C2:										
Assumption	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Fair	Very poor.
259D2:										
Assumption	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
259D3:										
Assumption	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
279B:										
Rozetta	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
279C2:										
Rozetta	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 13.--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
280B:										
Fayette	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280C2:										
Fayette	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280D2:										
Fayette	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
280F:										
Fayette	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
344B:										
Harvard	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
536.										
Dumps										
549D2:										
Marseilles	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
549F:										
Marseilles	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
549G:										
Marseilles	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
567B2:										
Elkhart	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
567C2:										
Elkhart	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
567D2:										
Elkhart	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
567D3:										
Elkhart	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
660C2:										
Coatsburg	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
675B:										
Greenbush	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
801B:										
Orthents	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.

Table 13.--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
802B. Orthents										
835G. Earthen dams										
863, 864, 865. Pits										
871B:										
Lenzburg----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
871D:										
Lenzburg----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
871G:										
Lenzburg----------	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
872B:										
Rapatee-----------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
901B:										
Ipava-------------	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Osco--------------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
902A:										
Ipava-------------	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Sable-------------	Fair	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good.
3074A:										
Radford-----------	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3107+:										
Sawmill-----------	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3415A:										
Orion-------------	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3451A:										
Lawson------------	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
7081B:										
Littleton---------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
7104A:										
Virgil------------	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
8077A:										
Huntsville--------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
8239A:										
Dorchester--------	Fair	Fair	Fair	Fair	Poor	Poor	Poor	Fair	Poor	Poor.

Table 13.--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
9017A: Keomah	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
9086B: Osco	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
9257A: Clarksdale	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
9279B: Rozetta	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
9279C2: Rozetta	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
9280B: Fayette	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
9280C2: Fayette	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
9675B: Greenbush	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
M-W. Miscellaneous water										
W. Water										

Table 14a.--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	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
7D3:						
Atlas	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Depth to saturated zone	1.00
	Slope	0.96	Slope	0.96	Shrink-swell	1.00
8D2:						
Hickory	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
8F:						
Hickory	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
8F2:						
Hickory	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
8G:						
Hickory	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
17A:						
Keomah	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
19C3:						
Sylvan	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
19D3:						
Sylvan	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
43A:						
Ipava	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	1.00	Depth to saturated zone	0.98
45A:						
Denny	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A:						
Sable---------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86B:						
Osco----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
86B2:						
Osco----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
86C:						
Osco----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
86C2:						
Osco----------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
86D2:						
Osco----------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
119D2:						
Elco----------------	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		
119E2:						
Elco----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	1.00	Shrink-swell	0.50
			Depth to saturated zone	0.99		
131B:						
Alvin---------------	Not limited		Not limited		Not limited	
131D:						
Alvin---------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
131F:						
Alvin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
134B:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Shrink-swell	0.50
134C2:						
Camden	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Slope	0.97
					Shrink-swell	0.50
134D2:						
Camden	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
249A:						
Edinburg	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
257A:						
Clarksdale	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
259C2:						
Assumption	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
			Depth to saturated zone	0.99	Slope	0.97
259D2:						
Assumption	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		
259D3:						
Assumption	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Shrink-swell	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.99	Shrink-swell	0.50
			Slope	0.96		
279B:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
279C2:						
Rozetta------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
280B:						
Fayette------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
280C2:						
Fayette------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50
280D2:						
Fayette------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
280F:						
Fayette------------	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
344B:						
Harvard------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
536:						
Dumps--------------	Not rated		Not rated		Not rated	
549D2:						
Marseilles----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Depth to soft bedrock	0.71	Shrink-swell	0.50
			Shrink-swell	0.50		
549F:						
Marseilles----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to soft bedrock	0.10		
549G:						
Marseilles----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to soft bedrock	0.10		
567B2:						
Elkhart------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.16	Shrink-swell	0.50
567C2:						
Elkhart------------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	0.16	Slope	0.97
					Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
567D2:						
Elkhart	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.16	Shrink-swell	0.50
567D3:						
Elkhart	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
			Depth to saturated zone	0.16		
660C2:						
Coatsburg	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
					Slope	1.00
675B:						
Greenbush	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
801B:						
Orthents	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.39	Shrink-swell	0.50	Depth to saturated zone	0.39
802B:						
Orthents	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
835G:						
Earthen dams	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
871D:						
Lenzburg	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.91	Slope	0.91	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
871G:						
Lenzburg	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
872B:						
Rapatee	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.47		

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
901B:						
Ipava	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	1.00	Depth to saturated zone	0.98
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
902A:						
Ipava	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	1.00	Depth to saturated zone	0.98
Sable	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3074A:						
Radford	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		
3107+:						
Sawmill	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
3415A:						
Orion	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
3451A:						
Lawson	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		
7081B:						
Littleton	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 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
7104A:						
Virgil	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
8077A:						
Huntsville	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.16		
8239A:						
Dorchester	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
9017A:						
Keomah	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
9086B:						
Osco	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
9257A:						
Clarksdale	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
9279B:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
9279C2:						
Rozetta	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to saturated zone	0.15	Shrink-swell	0.50
9280B:						
Fayette	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
9280C2:						
Fayette	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
					Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9675B:						
Greenbush-----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to saturated zone	0.15		
M-W.						
Miscellaneous water						
W.						
Water						

Table 14b.--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	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
7D3:						
Atlas	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96	Depth to saturated zone	0.94
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Slope	0.96	Too clayey	0.02		
	Depth to saturated zone	0.94				
8D2:						
Hickory	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
8F:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
8F2:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
17A:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
19C3:						
Sylvan	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
19D3:						
Sylvan----------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.50		
	Slope	0.96				
	Shrink-swell	0.50				
43A:						
Ipava-----------------	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		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
45A:						
Denny-----------------	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				
	Shrink-swell	1.00				
68A:						
Sable-----------------	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	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
86B:						
Osco------------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
86B2:						
Osco------------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
86C:						
Osco------------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
86C2:						
Osco------------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
86D2:						
Osco----------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Depth to saturated zone	0.15		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
119D2:						
Elco----------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
119E2:						
Elco----------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	0.99		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
131B:						
Alvin---------------	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
131D:						
Alvin---------------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.96	Cutbanks cave	1.00	Slope	0.96
	Frost action	0.50	Slope	0.96		
131F:						
Alvin---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Cutbanks cave	1.00		
134B:						
Camden--------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
134C2:						
Camden--------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
134D2:						
Camden--------------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Cutbanks cave	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
249A:						
Edinburg------------	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				
	Shrink-swell	1.00				
257A:						
Clarksdale----------	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
259C2:						
Assumption----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.99		
	Shrink-swell	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
259D2:						
Assumption----------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
259D3:						
Assumption----------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	0.99	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
279B:						
Rozetta-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
279C2:						
Rozetta-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
280B:						
Fayette-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
280C2:						
Fayette-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
280D2:						
Fayette-------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.10		
	Slope	0.96				
	Shrink-swell	0.50				
280F:						
Fayette-------------	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				
344B:						
Harvard-------------	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Shrink-swell	0.50				
536:						
Dumps---------------	Not rated		Not rated		Not rated	
549D2:						
Marseilles----------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Depth to soft bedrock	0.71	Depth to bedrock	0.71
	Slope	0.96				
	Shrink-swell	0.50	Cutbanks cave	0.10		
549F:						
Marseilles----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10	Depth to bedrock	0.10
	Low strength	1.00	Depth to soft bedrock	0.10		
	Shrink-swell	0.50				
549G:						
Marseilles----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Cutbanks cave	0.10	Depth to bedrock	0.10
	Low strength	1.00	Depth to soft bedrock	0.10		
	Shrink-swell	0.50				
567B2:						
Elkhart-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00	Depth to saturated zone	0.16		
	Shrink-swell	0.50				
567C2:						
Elkhart-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.50		
	Low strength	1.00	Depth to saturated zone	0.16		
	Shrink-swell	0.50				
567D2:						
Elkhart-------------	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.50		
	Slope	0.96	Depth to saturated zone	0.16		
	Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
567D3:						
Elkhart	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Cutbanks cave	0.50		
	Slope	0.96	Depth to saturated zone	0.16		
660C2:						
Coatsburg	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	Too clayey	0.02		
	Shrink-swell	1.00				
675B:						
Greenbush	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00				
	Shrink-swell	0.50	Cutbanks cave	0.10		
801B:						
Orthents	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Shrink-swell	0.50				
	Depth to saturated zone	0.19	Cutbanks cave	0.10		
802B:						
Orthents	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
835G:						
Earthen dams	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
871D:						
Lenzburg	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.91	Slope	0.91	Slope	0.91
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
871G:						
Lenzburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
872B:						
Rapatee-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.47		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
901B:						
Ipava---------------	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		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
Osco----------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
902A:						
Ipava---------------	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		
	Shrink-swell	1.00				
	Depth to saturated zone	0.75				
Sable---------------	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				
	Shrink-swell	0.50				
3074A:						
Radford-------------	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
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
3107+:						
Sawmill-------------	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	0.99
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.99				
	Shrink-swell	0.50				
3415A:						
Orion---------------	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Flooding	1.00	Cutbanks cave	1.00	Depth to saturated zone	0.75
	Low strength	1.00	Flooding	0.80		
	Depth to saturated zone	0.75				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
3451A:						
Lawson	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
	Low strength	1.00	Cutbanks cave	0.10		
	Depth to saturated zone	0.75				
7081B:						
Littleton	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				
7104A:						
Virgil	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Flooding	0.40				
8077A:						
Huntsville	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Depth to saturated zone	0.16		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
8239A:						
Dorchester	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				
	Shrink-swell	0.50				
9017A:						
Keomah	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				
9086B:						
Osco	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
9257A:						
Clarksdale	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	1.00				
	Depth to saturated zone	0.94				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
9279B:						
Rozetta-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
9279C2:						
Rozetta-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
9280B:						
Fayette-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
9280C2:						
Fayette-------------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
9675B:						
Greenbush-----------	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to saturated zone	0.15		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
M-W.						
Miscellaneous water						
W.						
Water						

Table 15a.--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	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:				
Atlas	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	0.96		
8D2:				
Hickory	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
8F:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
8F2:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
8G:				
Hickory	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
17A:				
Keomah	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
19C3:				
Sylvan	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
19D3:				
Sylvan	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
43A:				
Ipava	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
45A:				
Denny	Very limited		Very limited	
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00		
68A:				
Sable	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
86B:				
Osco	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
86B2:				
Osco	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
86C:				
Osco	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		
86C2:				
Osco	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		
86D2:				
Osco	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40		

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
119D2:				
Elco----------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
	Slope	0.96	Depth to saturated zone	0.04
119E2:				
Elco----------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
	Restricted permeability	1.00	Depth to saturated zone	0.04
131B:				
Alvin---------------	Very limited		Very limited	
	Seepage	1.00	Seepage	1.00
			Slope	0.18
131D:				
Alvin---------------	Very limited		Very limited	
	Seepage	1.00	Slope	1.00
	Slope	0.96	Seepage	1.00
131F:				
Alvin---------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Seepage	1.00	Seepage	1.00
134B:				
Camden--------------	Very limited		Very limited	
	Seepage	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	0.18
134C2:				
Camden--------------	Very limited		Very limited	
	Seepage	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	1.00
134D2:				
Camden--------------	Very limited		Very limited	
	Seepage	1.00	Slope	1.00
	Slope	0.96	Seepage	1.00
	Restricted permeability	0.46		
249A:				
Edinburg------------	Very limited		Very limited	
	Restricted permeability	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
257A:				
Clarksdale----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
259C2:				
Assumption----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Seepage	0.53
	Restricted permeability	1.00	Depth to saturated zone	0.04
259D2:				
Assumption----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Seepage	0.53
	Restricted permeability	1.00	Depth to saturated zone	0.04
	Slope	0.96		
259D3:				
Assumption----------	Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00
			Seepage	0.53
	Restricted permeability	1.00	Depth to saturated zone	0.04
	Slope	0.96		
279B:				
Rozetta-------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
279C2:				
Rozetta-------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		
280B:				
Fayette-------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
280C2:				
Fayette-------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
280D2:				
Fayette-------------	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
280F:				
Fayette-------------	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
344B:				
Harvard-------------	Very limited		Very limited	
	Seepage	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	0.18
536:				
Dumps---------------	Not rated		Not rated	
549D2:				
Marseilles----------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	0.96		
549F:				
Marseilles----------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00		
549G:				
Marseilles----------	Very limited		Very limited	
	Restricted permeability	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Slope	1.00		
567B2:				
Elkhart-------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.43	Slope	0.18
567C2:				
Elkhart-------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
	Depth to saturated zone	0.43	Seepage	0.53
567D2:				
Elkhart-------------	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.43		

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
567D3:				
Elkhart	Somewhat limited		Very limited	
	Slope	0.96	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.43		
660C2:				
Coatsburg	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
675B:				
Greenbush	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
801B:				
Orthents	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.72	Slope	0.32
			Seepage	0.28
802B:				
Orthents	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32
863, 864, 865:				
Pits	Not rated		Not rated	
871B:				
Lenzburg	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32
871D:				
Lenzburg	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.91		
871G:				
Lenzburg	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00		
872B:				
Rapatee	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.18
	Depth to saturated zone	0.94		

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
901B:				
Ipava---------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
Osco----------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
902A:				
Ipava---------------	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.53
Sable---------------	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3074A:				
Radford-------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3107+:				
Sawmill-------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3415A:				
Orion---------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
3451A:				
Lawson--------------	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
7081B:				
Littleton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	0.53
	Flooding	0.40	Flooding	0.40
7104A:				
Virgil	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00	Seepage	1.00
	Restricted permeability	0.46	Flooding	0.40
	Flooding	0.40		
8077A:				
Huntsville	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.43		
8239A:				
Dorchester	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	0.53
9017A:				
Keomah	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.08
9086B:				
Osco	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40	Slope	0.18
9257A:				
Clarksdale	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Seepage	0.08
9279B:				
Rozetta	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
	Depth to saturated zone	0.40	Slope	0.18

Table 15a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
9279C2:				
Rozetta-------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
	Depth to saturated zone	0.40		
9280B:				
Fayette-------------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
9280C2:				
Fayette-------------	Somewhat limited		Very limited	
	Restricted permeability	0.46	Slope	1.00
			Seepage	0.53
9675B:				
Greenbush-----------	Somewhat limited		Somewhat limited	
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.18
	Depth to saturated zone	0.40		
M-W. Miscellaneous water				
W. Water				

Table 15b.--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	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
7D3:						
Atlas	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	Slope	0.96	Too clayey	1.00
	Slope	0.96			Hard to compact	1.00
					Slope	0.96
8D2:						
Hickory	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
8F:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
8F2:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
8G:						
Hickory	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
17A:						
Keomah	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
19C3:						
Sylvan	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
19D3:						
Sylvan	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
43A:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
	Too clayey	0.50			Depth to saturated zone	1.00
					Too clayey	0.50
45A:						
Denny	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Hard to compact	1.00
					Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A:						
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
86B:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
86B2:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
86C:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
86C2:						
Osco	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
86D2:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Too clayey	0.50
	Too clayey	0.50				
119D2:						
Elco	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
119E2:						
Elco	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
131B:						
Alvin	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Seepage	1.00	Seepage	0.52
131D:						
Alvin	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Seepage	1.00	Slope	0.96
	Slope	0.96	Slope	0.96	Seepage	0.52

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
131F:						
Alvin---------------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage	1.00	Seepage	1.00	Seepage	0.52
134B:						
Camden--------------	Very limited		Not limited		Somewhat limited	
	Seepage	1.00			Too clayey	0.50
					Seepage	0.22
134C2:						
Camden--------------	Very limited		Not limited		Somewhat limited	
	Seepage	1.00			Too sandy	0.50
	Too sandy	0.50			Too clayey	0.50
					Seepage	0.22
134D2:						
Camden--------------	Very limited		Somewhat limited		Somewhat limited	
	Seepage	1.00	Slope	0.96	Slope	0.96
	Slope	0.96			Too clayey	0.50
					Seepage	0.22
249A:						
Edinburg------------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Hard to compact	1.00
					Too clayey	0.50
257A:						
Clarksdale----------	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			Hard to compact	1.00
					Too clayey	0.50
259C2:						
Assumption----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
259D2:						
Assumption----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
259D3:						
Assumption----------	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
279B:						
Rozetta-------------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279C2:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
280B:						
Fayette	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
280C2:						
Fayette	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
280D2:						
Fayette	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
280F:						
Fayette	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
344B:						
Harvard	Very limited		Not limited		Somewhat limited	
	Seepage	1.00			Too clayey	0.50
	Too clayey	0.50				
536:						
Dumps	Not rated		Not rated		Not rated	
549D2:						
Marseilles	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
549F:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
549G:						
Marseilles	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
567B2:						
Elkhart	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
567C2:						
Elkhart	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
567D2:						
Elkhart	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96		
567D3:						
Elkhart	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	0.96	Slope	0.96		
660C2:						
Coatsburg	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
675B:						
Greenbush	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
801B:						
Orthents	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.86
	Too clayey	0.50			Too clayey	0.50
802B:						
Orthents	Not limited		Not limited		Not limited	
835G:						
Earthen dams	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Not limited		Not limited		Not limited	
871D:						
Lenzburg	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.91	Slope	0.91	Slope	0.91
871G:						
Lenzburg	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
					Gravel content	0.02
872B:						
Rapatee	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
901B:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
	Too clayey	0.50			Depth to saturated zone	1.00
					Too clayey	0.50
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
902A:						
Ipava	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Hard to compact	1.00
	Too clayey	0.50			Depth to saturated zone	1.00
					Too clayey	0.50
Sable	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
3074A:						
Radford	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				
3107+:						
Sawmill	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				
3415A:						
Orion	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		
3451A:						
Lawson	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		
7081B:						
Littleton	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		

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7104A:						
Virgil	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Seepage	1.00	Flooding	0.40	Too clayey	0.50
	Too clayey	0.50				
	Flooding	0.40				
8077A:						
Huntsville	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
8239A:						
Dorchester	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
9017A:						
Keomah	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			Hard to compact	1.00
					Too clayey	0.50
9086B:						
Osco	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
9257A:						
Clarksdale	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			Hard to compact	1.00
					Too clayey	0.50
9279B:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
9279C2:						
Rozetta	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
9280B:						
Fayette	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
9280C2:						
Fayette	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Table 15b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9675B:						
Greenbush----------	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50				
M-W.						
Miscellaneous water						
W.						
Water						

Table 16a.--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	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
7D3:						
Atlas---------------	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Too clayey	0.00
	Low content of organic matter	0.50	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Too acid	0.88	Shrink-swell	0.12	Slope	0.04
8D2:						
Hickory-------------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.04
			Shrink-swell	0.94	Too clayey	0.57
	Too acid	0.88			Rock fragments	0.88
	Too clayey	0.98				
8F:						
Hickory-------------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
			Low strength	0.00	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.94	Rock fragments	0.88
	Too clayey	0.98				
	Water erosion	0.99				
8F2:						
Hickory-------------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
			Low strength	0.00	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.98	Rock fragments	0.88
	Too clayey	0.98				
8G:						
Hickory-------------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
			Low strength	0.00	Too clayey	0.57
	Too acid	0.68	Shrink-swell	0.99		
	Too clayey	0.98				
	Water erosion	0.99				
17A:						
Keomah--------------	Fair		Poor		Fair	
	Low content of organic matter	0.02	Low strength	0.00	Depth to saturated zone	0.04
			Depth to saturated zone	0.04		
	Too clayey	0.08			Too clayey	0.05
	Water erosion	0.68	Shrink-swell	0.89		
	Too acid	0.74				
19C3:						
Sylvan--------------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
			Shrink-swell	0.99		
	Water erosion	0.68				
	Carbonate content	0.97				
	Too clayey	0.98				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
19D3:						
Sylvan	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.04
					Too clayey	0.57
	Water erosion	0.68				
	Carbonate content	0.97				
	Too clayey	0.98				
43A:						
Ipava	Fair		Poor		Fair	
	Water erosion	0.99	Low strength	0.00	Depth to saturated zone	0.14
			Depth to saturated zone	0.14		
			Shrink-swell	0.59		
45A:						
Denny	Fair		Poor		Poor	
	Too clayey	0.02	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.01
	Water erosion	0.90	Shrink-swell	0.74		
	Too acid	0.95				
68A:						
Sable	Fair		Poor		Poor	
	Low content of organic matter	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.98	Low strength	0.00	Too clayey	0.98
	Water erosion	0.99	Shrink-swell	0.87		
86B:						
Osco	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
			Shrink-swell	0.87		
	Too acid	0.84				
	Too clayey	0.98				
	Water erosion	0.99				
86B2:						
Osco	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
			Shrink-swell	0.99		
	Too acid	0.54				
	Too clayey	0.98				
	Water erosion	0.99				
86C:						
Osco	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
			Shrink-swell	0.87		
	Too acid	0.84				
	Too clayey	0.98				
	Water erosion	0.99				
86C2:						
Osco	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.64
			Shrink-swell	0.87		
	Water erosion	0.68				
	Too acid	0.84				
	Too clayey	0.98				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
86D2:						
Osco----------------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Slope	0.04
			Shrink-swell	0.87	Too clayey	0.64
	Too acid	0.84				
	Too clayey	0.98				
	Water erosion	0.99				
119D2:						
Elco----------------	Fair		Poor		Fair	
	Low content of organic matter	0.02	Low strength	0.00	Slope	0.04
			Shrink-swell	0.38	Too clayey	0.57
	Water erosion	0.90	Depth to saturated zone	0.98	Depth to saturated zone	0.98
	Too clayey	0.98				
119E2:						
Elco----------------	Fair		Poor		Poor	
	Low content of organic matter	0.02	Low strength	0.00	Slope	0.00
			Slope	0.18	Too clayey	0.57
	Water erosion	0.68	Shrink-swell	0.45	Depth to saturated zone	0.98
	Too clayey	0.98	Depth to saturated zone	0.98		
131B:						
Alvin---------------	Fair		Good		Good	
	Low content of organic matter	0.12				
	Too acid	0.88				
131D:						
Alvin---------------	Fair		Good		Fair	
	Low content of organic matter	0.12			Slope	0.04
	Too acid	0.88				
131F:						
Alvin---------------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Slope	0.00	Slope	0.00
	Too acid	0.88				
134B:						
Camden--------------	Fair		Good		Fair	
	Low content of organic matter	0.12			Too clayey	0.49
	Too clayey	0.82				
	Water erosion	0.90				
	Too acid	0.97				
134C2:						
Camden--------------	Fair		Good		Fair	
	Low content of organic matter	0.12			Too clayey	0.49
	Too clayey	0.82				
	Water erosion	0.90				
	Too acid	0.97				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
134D2:						
Camden	Fair		Good		Fair	
	Low content of organic matter	0.12			Slope	0.04
	Too clayey	0.82			Too clayey	0.49
	Water erosion	0.90				
	Too acid	0.97				
249A:						
Edinburg	Fair		Poor		Poor	
	Too clayey	0.02	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.68	Low strength	0.00	Too clayey	0.01
	Water erosion	0.99	Shrink-swell	0.17		
257A:						
Clarksdale	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.12	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Water erosion	0.90	Shrink-swell	0.50		
	Too acid	0.97				
259C2:						
Assumption	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.64
	Too acid	0.97	Shrink-swell	0.31	Depth to saturated zone	0.98
	Too clayey	0.98	Depth to saturated zone	0.98		
	Water erosion	0.99				
259D2:						
Assumption	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.04
	Too acid	0.97	Shrink-swell	0.38	Too clayey	0.64
	Too clayey	0.98	Depth to saturated zone	0.98	Depth to saturated zone	0.98
	Water erosion	0.99				
259D3:						
Assumption	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.04
	Too acid	0.97	Shrink-swell	0.40	Too clayey	0.64
	Too clayey	0.98	Depth to saturated zone	0.98	Depth to saturated zone	0.98
	Water erosion	0.99				
279B:						
Rozetta	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Water erosion	0.68	Shrink-swell	0.92		
	Too acid	0.68				
	Too clayey	0.98				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
279C2:						
Rozetta	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
	Too acid	0.68	Shrink-swell	0.90		
	Water erosion	0.90				
	Too clayey	0.98				
280B:						
Fayette	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Water erosion	0.68	Shrink-swell	0.87		
	Too acid	0.68				
	Too clayey	0.98				
280C2:						
Fayette	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.68	Shrink-swell	0.87		
	Water erosion	0.90				
	Too clayey	0.98				
280D2:						
Fayette	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Slope	0.04
	Too acid	0.68	Shrink-swell	0.87	Too clayey	0.57
	Water erosion	0.90				
	Too clayey	0.98				
280F:						
Fayette	Fair		Poor		Poor	
	Low content of organic matter	0.50	Low strength	0.00	Slope	0.00
	Water erosion	0.68	Slope	0.00	Too clayey	0.64
	Too acid	0.68	Shrink-swell	0.87		
	Too clayey	0.98				
344B:						
Harvard	Fair		Fair		Fair	
	Low content of organic matter	0.12	Shrink-swell	0.99	Too clayey	0.57
	Water erosion	0.90				
	Too acid	0.97				
	Too clayey	0.98				
536:						
Dumps	Not rated		Not rated		Not rated	
549D2:						
Marseilles	Fair		Poor		Fair	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.04
	Depth to bedrock	0.29	Low strength	0.00	Depth to bedrock	0.29
	Too acid	0.50	Shrink-swell	0.87	Too clayey	0.39
	Droughty	0.50			Too acid	0.88
	Too clayey	0.68				
	Water erosion	0.99				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
549F:						
Marseilles----------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
	Too acid	0.50	Low strength	0.00	Too clayey	0.39
	Too clayey	0.68	Slope	0.00	Too acid	0.88
	Depth to bedrock	0.90	Shrink-swell	0.87	Depth to bedrock	0.90
	Droughty	0.99				
	Water erosion	0.99				
549G:						
Marseilles----------	Fair		Poor		Poor	
	Low content of organic matter	0.12	Depth to bedrock	0.00	Slope	0.00
	Too acid	0.50	Slope	0.00	Too clayey	0.39
	Too clayey	0.68	Low strength	0.00	Too acid	0.88
	Depth to bedrock	0.90	Shrink-swell	0.87	Depth to bedrock	0.90
	Droughty	0.99				
	Water erosion	0.99				
567B2:						
Elkhart-------------	Fair		Poor		Fair	
	Low content of organic matter	0.01	Low strength	0.00	Too clayey	0.57
	Carbonate content	0.68				
	Water erosion	0.90				
	Too clayey	0.98				
567C2:						
Elkhart-------------	Fair		Poor		Fair	
	Low content of organic matter	0.01	Low strength	0.00	Too clayey	0.57
	Water erosion	0.68				
	Carbonate content	0.68				
	Too clayey	0.98				
567D2:						
Elkhart-------------	Fair		Poor		Fair	
	Low content of organic matter	0.01	Low strength	0.00	Slope	0.04
	Water erosion	0.68			Too clayey	0.57
	Carbonate content	0.68				
	Too clayey	0.98				
567D3:						
Elkhart-------------	Fair		Poor		Fair	
	Low content of organic matter	0.01	Low strength	0.00	Slope	0.04
	Water erosion	0.68			Carbonate content	0.68
	Carbonate content	0.68				
660C2:						
Coatsburg-----------	Poor		Poor		Poor	
	Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.00
	Too acid	0.84	Shrink-swell	0.12		

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
675B:						
Greenbush-----------	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Too clayey	0.70
	Too acid	0.97	Shrink-swell	0.91		
	Too clayey	0.98				
	Water erosion	0.99				
801B:						
Orthents------------	Fair		Poor		Fair	
	Low content of organic matter	0.68	Low strength	0.00	Depth to saturated zone	0.53
	Water erosion	0.90	Depth to saturated zone	0.53	Too clayey	0.67
	Too clayey	0.98	Shrink-swell	0.87		
802B:						
Orthents------------	Fair		Poor		Good	
	Low content of organic matter	0.68	Low strength	0.00		
	Water erosion	0.90	Shrink-swell	0.87		
835G:						
Earthen dams--------	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits----------------	Not rated		Not rated		Not rated	
871B:						
Lenzburg------------	Fair		Fair		Fair	
	Low content of organic matter	0.24	Shrink-swell	0.87	Rock fragments	0.04
	Water erosion	0.99			Hard to reclaim (rock fragments)	0.99
871D:						
Lenzburg------------	Fair		Fair		Fair	
	Low content of organic matter	0.24	Shrink-swell	0.87	Rock fragments	0.04
	Water erosion	0.99			Slope	0.09
					Hard to reclaim (rock fragments)	0.99
871G:						
Lenzburg------------	Fair		Poor		Poor	
	Low content of organic matter	0.68	Slope	0.00	Slope	0.00
	Water erosion	0.99	Low strength	0.00	Rock fragments	0.04
			Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.74
872B:						
Rapatee-------------	Fair		Poor		Poor	
	Low content of organic matter	0.75	Low strength	0.00	Hard to reclaim (dense layer)	0.00
	Too clayey	0.98	Shrink-swell	0.96	Too clayey	0.68
	Water erosion	0.99				
901B:						
Ipava---------------	Fair		Poor		Fair	
	Water erosion	0.99	Low strength	0.00	Depth to saturated zone	0.14
			Depth to saturated zone	0.14		
			Shrink-swell	0.59		

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
901B:						
Osco	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too acid	0.84	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
902A:						
Ipava	Fair		Poor		Fair	
	Water erosion	0.99	Low strength	0.00	Depth to saturated zone	0.14
			Depth to saturated zone	0.14		
			Shrink-swell	0.59		
Sable	Fair		Poor		Poor	
	Low content of organic matter	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.98	Low strength	0.00	Too clayey	0.98
	Water erosion	0.99	Shrink-swell	0.87		
3074A:						
Radford	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Depth to saturated zone	0.14
	Water erosion	0.68	Depth to saturated zone	0.14		
3107+:						
Sawmill	Fair		Poor		Poor	
	Too clayey	0.98	Low strength	0.00	Depth to saturated zone	0.00
			Depth to saturated zone	0.00	Too clayey	0.93
			Shrink-swell	0.89		
3415A:						
Orion	Fair		Poor		Fair	
	Water erosion	0.37	Low strength	0.00	Depth to saturated zone	0.14
			Depth to saturated zone	0.14		
3451A:						
Lawson	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Depth to saturated zone	0.14
	Water erosion	0.68	Depth to saturated zone	0.14		
7081B:						
Littleton	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Depth to saturated zone	0.14
	Water erosion	0.68	Depth to saturated zone	0.14		
7104A:						
Virgil	Fair		Fair		Fair	
	Low content of organic matter	0.68	Depth to saturated zone	0.14	Depth to saturated zone	0.14
	Water erosion	0.90	Shrink-swell	0.97	Too clayey	0.67
	Too acid	0.97				
	Too clayey	0.98				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
8077A:						
Huntsville----------	Good		Fair		Good	
			Shrink-swell	0.93		
8239A:						
Dorchester----------	Fair		Poor		Good	
	Carbonate content	0.97	Low strength	0.00		
	Water erosion	0.99	Shrink-swell	0.87		
9017A:						
Keomah--------------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.12	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Too acid	0.54	Shrink-swell	0.46	Too acid	0.98
	Water erosion	0.68				
9086B:						
Osco----------------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
			Shrink-swell	0.87		
	Too acid	0.84				
	Too clayey	0.98				
	Water erosion	0.99				
9257A:						
Clarksdale----------	Fair		Poor		Fair	
	Too clayey	0.02	Low strength	0.00	Too clayey	0.01
	Low content of organic matter	0.12	Depth to saturated zone	0.04	Depth to saturated zone	0.04
	Too acid	0.84	Shrink-swell	0.52		
	Water erosion	0.90				
9279B:						
Rozetta-------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
			Shrink-swell	0.87	Too acid	0.98
	Too acid	0.54				
	Water erosion	0.90				
	Too clayey	0.98				
9279C2:						
Rozetta-------------	Fair		Poor		Fair	
	Low content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
			Shrink-swell	0.87		
	Too acid	0.68				
	Water erosion	0.90				
	Too clayey	0.98				
9280B:						
Fayette-------------	Fair		Poor		Fair	
	Low content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
			Shrink-swell	0.87		
	Water erosion	0.68				
	Too acid	0.68				
	Too clayey	0.98				

Table 16a.--Construction Materials--Continued

Map symbol and soil name	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
9280C2:						
Fayette-------------	Fair		Poor		Fair	
	Low content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
			Shrink-swell	0.87		
	Too acid	0.68				
	Water erosion	0.90				
	Too clayey	0.98				
9675B:						
Greenbush-----------	Fair		Poor		Fair	
	Low content of organic matter	0.88	Low strength	0.00	Too clayey	0.70
			Shrink-swell	0.91		
	Too acid	0.97				
	Too clayey	0.98				
	Water erosion	0.99				
M-W.						
Miscellaneous water						
W.						
Water						

Table 16b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. Only those soils with a fair or good rating are listed. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of sand	
	Rating class	Value
131B:		
Alvin	Fair	
	Thickest layer	0.05
	Bottom layer	0.11
131D:		
Alvin	Fair	
	Thickest layer	0.05
	Bottom layer	0.11
131F:		
Alvin	Fair	
	Thickest layer	0.05
	Bottom layer	0.11
134B:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.08
134C2:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.08
134D2:		
Camden	Fair	
	Thickest layer	0.00
	Bottom layer	0.08

Table 17a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:						
Atlas---------------	Somewhat limited		Very limited		Very limited	
	Slope	0.02	Depth to saturated zone	1.00	Slow refill	1.00
					Cutbanks cave	0.10
			Hard to pack	0.89		
8D2:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
	Slope	0.02				
8F:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.05	Depth to water	1.00
	Slope	0.36				
8F2:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	Depth to water	1.00
	Slope	0.36				
8G:						
Hickory-------------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Piping	0.27	Depth to water	1.00
	Seepage	0.72				
17A:						
Keomah--------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.30		
19C3:						
Sylvan--------------	Somewhat limited		Not limited		Very limited	
	Seepage	0.72			Depth to water	1.00
19D3:						
Sylvan--------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.06	Depth to water	1.00
	Slope	0.02				
43A:						
Ipava---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
45A:						
Denny---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.04	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.14		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A:						
Sable	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Ponding	1.00		
86B:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
86B2:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.21	Depth to water	1.00
86C:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
86C2:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
86D2:						
Osco	Somewhat limited		Not limited		Very limited	
	Seepage	0.72			Depth to water	1.00
	Slope	0.02				
119D2:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.02				
			Piping	0.02		
119E2:						
Elco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.18				
			Piping	0.05		
131B:						
Alvin	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.11	Depth to water	1.00
131D:						
Alvin	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.11	Depth to water	1.00
	Slope	0.02				
131F:						
Alvin	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.11	Depth to water	1.00
	Slope	0.36				
134B:						
Camden	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.98	Depth to water	1.00
			Seepage	0.08		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134C2:						
Camden	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
			Seepage	0.08		
134D2:						
Camden	Very limited		Very limited		Very limited	
	Seepage	1.00	Piping	1.00	Depth to water	1.00
	Slope	0.02	Seepage	0.08		
249A:						
Edinburg	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.54	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to pack	0.47		
257A:						
Clarksdale	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
259C2:						
Assumption	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
			Piping	0.01		
259D2:						
Assumption	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.02				
259D3:						
Assumption	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Depth to saturated zone	0.68	Depth to water	1.00
	Slope	0.02				
279B:						
Rozetta	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
279C2:						
Rozetta	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
280B:						
Fayette	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.21	Depth to water	1.00
280C2:						
Fayette	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
280D2:						
Fayette	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
	Slope	0.02				

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
280F:						
Fayette-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	Depth to water	1.00
	Slope	0.34				
344B:						
Harvard-------------	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.82	Depth to water	1.00
			Seepage	0.05		
536:						
Dumps---------------	Not rated		Not rated		Not rated	
549D2:						
Marseilles----------	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.19	Thin layer	0.93	Depth to water	1.00
	Slope	0.02	Hard to pack	0.01		
549F:						
Marseilles----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.36	Thin layer	0.70	Depth to water	1.00
	Depth to bedrock	0.04				
549G:						
Marseilles----------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.99	Thin layer	0.70	Depth to water	1.00
	Depth to bedrock	0.04				
567B2:						
Elkhart-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.02	Depth to water	1.00
567C2:						
Elkhart-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.24	Depth to water	1.00
567D2:						
Elkhart-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.19	Depth to water	1.00
	Slope	0.02				
567D3:						
Elkhart-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.13	Depth to water	1.00
	Slope	0.02				
660C2:						
Coatsburg-----------	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Hard to pack	1.00		
675B:						
Greenbush-----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.17	Depth to water	1.00
801B:						
Orthents------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.54	Depth to saturated zone	1.00	Slow refill	0.46
					Cutbanks cave	0.10
			Piping	0.50	Depth to water	0.01

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
802B:						
Orthents------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.50	Depth to water	1.00
835G:						
Earthen dams--------	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits----------------	Not rated		Not rated		Not rated	
871B:						
Lenzburg------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.02	Depth to water	1.00
871D:						
Lenzburg------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.04	Piping	0.02	Depth to water	1.00
	Slope	0.02				
871G:						
Lenzburg------------	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Seepage	0.04				
872B:						
Rapatee-------------	Somewhat limited		Not limited		Very limited	
	Seepage	0.02			Depth to water	1.00
901B:						
Ipava---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
Osco----------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
902A:						
Ipava---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
Sable---------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Ponding	1.00	Slow refill	0.28
			Depth to saturated zone	1.00	Cutbanks cave	0.10
3074A:						
Radford-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.40		
3107+:						
Sawmill-------------	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.02		

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3415A:						
Orion	Somewhat limited		Very limited		Very limited	
	Seepage	0.72	Depth to saturated zone	1.00	Cutbanks cave	1.00
					Slow refill	0.28
			Piping	1.00		
3451A:						
Lawson	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.75		
7081B:						
Littleton	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
					Cutbanks cave	0.10
			Piping	0.82		
7104A:						
Virgil	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.13		
8077A:						
Huntsville	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.66	Depth to water	1.00
8239A:						
Dorchester	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.64	Depth to water	1.00
9017A:						
Keomah	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.30	Depth to saturated zone	1.00	Slow refill	0.70
					Cutbanks cave	0.10
9086B:						
Osco	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.01	Depth to water	1.00
9257A:						
Clarksdale	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.30	Depth to saturated zone	1.00	Slow refill	0.70
					Cutbanks cave	0.10
9279B:						
Rozetta	Somewhat limited		Not limited		Very limited	
	Seepage	0.72			Depth to water	1.00
9279C2:						
Rozetta	Somewhat limited		Not limited		Very limited	
	Seepage	0.72			Depth to water	1.00
9280B:						
Fayette	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.21	Depth to water	1.00

Table 17a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9280C2:						
Fayette-------------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.03	Depth to water	1.00
9675B:						
Greenbush-----------	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Piping	0.05	Depth to water	1.00
M-W.						
Miscellaneous water						
W.						
Water						

Table 17b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7D3:						
Atlas	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Slope	1.00	Slope	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
					Too clayey	0.02
			Erosion hazard	0.56		
8D2:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Erosion hazard	0.89		
8F:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
8F2:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Erosion hazard	0.89		
8G:						
Hickory	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
17A:						
Keomah	Not limited		Very limited		Somewhat limited	
			Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
19C3:						
Sylvan	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		
19D3:						
Sylvan	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
43A:						
Ipava	Not limited		Very limited		Somewhat limited	
			Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
45A:						
Denny	Not limited		Very limited		Very limited	
			Erosion hazard	1.00	Ponding	1.00
			Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
68A:						
Sable	Not limited		Very limited		Very limited	
			Erosion hazard	1.00	Ponding	1.00
			Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
86B:						
Osco	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
86B2:						
Osco	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
86C:						
Osco	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		
86C2:						
Osco	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		
86D2:						
Osco	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
119D2:						
Elco	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Erosion hazard	1.00	Slope	0.96
			Slope	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
119E2:						
Elco	Very limited		Very limited		Very limited	
	Slope	1.00	Erosion hazard	1.00	Slope	1.00
			Slope	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
131B:						
Alvin	Somewhat limited		Somewhat limited		Drainage not needed	
	Slope	0.25	Slope	0.25		
			Erosion hazard	0.17		

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
131D:						
Alvin----------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Erosion hazard	0.17		
131F:						
Alvin----------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Slope	1.00		
			Erosion hazard	0.17		
134B:						
Camden---------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
134C2:						
Camden---------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		
134D2:						
Camden---------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
249A:						
Edinburg-------------	Not limited		Very limited		Very limited	
			Erosion hazard	1.00	Ponding	1.00
			Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
257A:						
Clarksdale-----------	Not limited		Very limited		Somewhat limited	
			Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
259C2:						
Assumption-----------	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.99		
259D2:						
Assumption-----------	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Erosion hazard	1.00	Slope	0.96
			Slope	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
259D3:						
Assumption-----------	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Erosion hazard	1.00	Slope	0.96
			Slope	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279B:						
Rozetta-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
279C2:						
Rozetta-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		
280B:						
Fayette-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
280C2:						
Fayette-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		
280D2:						
Fayette-------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
280F:						
Fayette-------------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
344B:						
Harvard-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
536:						
Dumps---------------	Not rated		Not rated		Not rated	
549D2:						
Marseilles----------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
	Depth to bedrock	0.71	Slope	1.00		
			Depth to bedrock	0.71		
549F:						
Marseilles----------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
	Depth to bedrock	0.10	Slope	1.00		
			Depth to bedrock	0.10		
549G:						
Marseilles----------	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
	Depth to bedrock	0.10	Slope	1.00		
			Depth to bedrock	0.10		
567B2:						
Elkhart-------------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains: Rating class and limiting features	Value	Constructing terraces and diversions: Rating class and limiting features	Value	Tile drains and underground outlets: Rating class and limiting features	Value
567C2:						
Elkhart	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		
567D2:						
Elkhart	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
567D3:						
Elkhart	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
			Slope	1.00		
660C2:						
Coatsburg	Somewhat limited		Very limited		Somewhat limited	
	Slope	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
					Too clayey	0.02
			Slope	1.00		
			Erosion hazard	0.56		
675B:						
Greenbush	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
801B:						
Orthents	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.36	Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.36		
802B:						
Orthents	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Erosion hazard	1.00		
			Slope	0.36		
835G:						
Earthen dams	Not rated		Not rated		Not rated	
863, 864, 865:						
Pits	Not rated		Not rated		Not rated	
871B:						
Lenzburg	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.36	Erosion hazard	1.00		
	Rock fragment content	0.18	Slope	0.36		
			Rock fragment content	0.18		
871D:						
Lenzburg	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
	Rock fragment content	0.18	Slope	1.00		
			Rock fragment content	0.18		

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
871G:						
Lenzburg	Very limited		Very limited		Drainage not needed	
	Slope	1.00	Erosion hazard	1.00		
	Rock fragment content	0.22	Slope	1.00		
			Rock fragment content	0.22		
872B:						
Rapatee	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.25	Erosion hazard	1.00	Depth to dense layer	0.50
			Slope	0.25	Cutbanks cave	0.10
901B:						
Ipava	Not limited		Very limited		Somewhat limited	
			Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
Osco	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
902A:						
Ipava	Not limited		Very limited		Somewhat limited	
			Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
Sable	Not limited		Very limited		Very limited	
			Erosion hazard	1.00	Ponding	1.00
			Ponding	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
3074A:						
Radford	Not limited		Very limited		Very limited	
			Erosion hazard	1.00	Flooding	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
3107+:						
Sawmill	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Flooding	1.00
			Erosion hazard	0.89	Cutbanks cave	0.10
3415A:						
Orion	Not limited		Very limited		Very limited	
			Erosion hazard	1.00	Flooding	1.00
			Depth to saturated zone	1.00	Cutbanks cave	1.00
3451A:						
Lawson	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Flooding	1.00
			Erosion hazard	0.89	Cutbanks cave	0.10

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7081B:						
Littleton	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.04	Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
			Slope	0.04		
7104A:						
Virgil	Not limited		Very limited		Somewhat limited	
			Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
8077A:						
Huntsville	Not limited		Somewhat limited		Drainage not needed	
			Erosion hazard	0.89		
8239A:						
Dorchester	Not limited		Very limited		Drainage not needed	
			Erosion hazard	1.00		
9017A:						
Keomah	Not limited		Very limited		Somewhat limited	
			Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
9086B:						
Osco	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
9257A:						
Clarksdale	Not limited		Very limited		Somewhat limited	
			Erosion hazard	1.00	Cutbanks cave	0.10
			Depth to saturated zone	1.00		
9279B:						
Rozetta	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
9279C2:						
Rozetta	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		
9280B:						
Fayette	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
9280C2:						
Fayette	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.99	Erosion hazard	1.00		
			Slope	0.99		

Table 17b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
9675B:						
Greenbush-----------	Somewhat limited		Very limited		Drainage not needed	
	Slope	0.25	Erosion hazard	1.00		
			Slope	0.25		
M-W.						
Miscellaneous water						
W.						
Water						

Table 18.--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. Representative values are indicative of conditions that occur 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	
7D3:												
Atlas-----------	0-4	Silty clay loam*	CH*, CL	A-7-6*, A-6	0	0	100	100	95-100	75-100	38-65	25-40
	4-66	Silty clay*, silty clay loam, clay, clay loam.	CH*	A-7-6*, A-7	0	0	100	95-100	95-100	75-95	50-70	30-45
	66-80	Clay loam*, clay, loam.	CL*, CH	A-7-6*, A-6, A-7	0	0	95-100	90-100	80-100	60-95	35-55	20-30
8D2:												
Hickory---------	0-6	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	6-51	Clay loam*, silty clay loam, gravelly clay loam.	CL*	A-6*, A-7	0-1	0-5	85-100	70-100	65-95	50-80	30-50	15-30
	51-60	Loam*, clay loam, gravelly clay loam.	CL-ML*, CL, SC, SC-SM	A-6*, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
8F:												
Hickory---------	0-4	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	4-12	Loam*	CL*, ML, CL-ML	A-4*, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	12-53	Clay loam*, silty clay loam, gravelly clay loam.	CL*	A-6*, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	53-58	Loam*, sandy loam, gravelly clay loam.	CL-ML*, CL, SC, SC-SM	A-6*, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
	58-63	Loam*, sandy loam, gravelly clay loam.	CL-ML*, CL, SC, SC-SM	A-6*, A-4, A-2	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20

Table 18.--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	
8F2:												
Hickory----------	0-12	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	8-15
	12-46	Clay loam*, silty clay loam, gravelly clay loam.	CL*	A-6*, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	46-72	Loam*, sandy loam, gravelly clay loam.	CL-ML*, CL, SC, SC-SM	A-6*, A-2, A-4	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
8G:												
Hickory----------	0-4	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	4-12	Loam*	CL*, ML, CL-ML	A-4*, A-6	0	0-5	95-100	90-100	75-100	55-100	20-35	3-15
	12-40	Clay loam*, silty clay loam, gravelly clay loam.	CL*	A-6*, A-7	0-1	0-5	85-100	70-100	65-95	50-85	30-50	15-30
	40-58	Loam*, gravelly clay loam.	CL*, CL-ML, SC, SC-SM	A-6*, A-2, A-4	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
	58-63	Loam*, sandy loam, gravelly clay loam.	CL-ML*, CL, SC, SC-SM	A-6*, A-2, A-4	0-1	0-5	85-100	70-95	45-95	25-75	20-40	5-20
17A:												
Keomah-----------	0-11	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	10-15
	11-18	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	10-20
	18-33	Silty clay loam*, silty clay.	CL*, CH	A-7-6*	0	0	100	100	100	95-100	45-55	25-30
	33-51	Silty clay loam*	CL*, ML	A-7-6*, A-6	0	0	100	100	100	95-100	35-45	15-25
	51-89	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	100	95-100	25-35	5-15
19C3:												
Sylvan-----------	0-7	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-50	20-30
	7-37	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-50	20-30
	37-60	Silt loam*, silt	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	95-100	20-40	5-20
19D3:												
Sylvan-----------	0-9	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-50	20-30
	9-28	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-50	20-30
	28-60	Silt loam*, silt	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	95-100	20-40	5-20

Table 18.--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	
43A:												
Ipava-----------	0-20	Silt loam*	ML*, CL	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	20-40	Silty clay loam*, silty clay.	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-40
	40-60	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20
45A:												
Denny-----------	0-9	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	30-40	8-15
	9-22	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	95-100	25-40	5-15
	22-45	Silty clay loam*, silty clay.	CH*, CL	A-7-6*, A-6	0	0	100	100	95-100	95-100	35-60	15-35
	45-60	Silty clay loam*, silt loam.	CL*	A-6*	0	0	100	100	95-100	95-100	25-40	11-20
68A:												
Sable-----------	0-17	Silty clay loam*	CH*, CL, MH, ML	A-7-6*	0	0	100	100	95-100	95-100	41-65	15-35
	17-23	Silty clay loam*	CH*, CL, MH, ML	A-7-6*	0	0	100	100	95-100	95-100	41-65	15-35
	23-60	Silty clay loam*, silt loam.	CL*, CH	A-7-6*	0	0	100	100	95-100	95-100	40-55	20-35
86B:												
Osco------------	0-14	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	35-45	7-20
	14-55	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	40-50	15-25
	55-60	Silt loam*, silty clay loam.	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	35-45	7-25
86B2:												
Osco------------	0-8	Silt loam*	CL*, ML	A-6*	0	0	100	100	97-100	95-100	29-37	10-16
	8-42	Silty clay loam*, silt loam.	CL*, ML	A-7-6*, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	42-51	Silt loam*, silty clay loam.	CL*, ML	A-6*, A-4	0	0	100	100	97-100	95-100	24-37	7-17
	51-60	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	96-100	93-100	24-37	7-18
86C:												
Osco------------	0-14	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	97-100	95-100	35-45	10-20
	14-43	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	97-100	95-100	40-50	15-25
	43-60	Silt loam*, silty clay loam.	CL*	A-6*, A-7-6	0	0	100	100	97-100	93-100	35-45	15-25

Table 18.--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	
86C2:												
Osco------------	0-9	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	95-100	35-45	10-20
	9-34	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	95-100	95-100	40-50	15-25
	34-60	Silt loam*, silty clay loam.	CL*, ML	A-6*, A-4	0	0	100	100	95-100	95-100	35-45	7-25
86D2:												
Osco------------	0-8	Silt loam*, silty clay loam.	CL*	A-6*	0	0	100	100	97-100	97-100	40-50	15-25
	8-51	Silty clay loam*	CL*	A-7-6*	0	0	100	100	97-100	97-100	40-50	15-25
	51-60	Silt loam*, silty clay loam.	CL*	A-6*, A-7-6	0	0	100	100	97-100	93-100	35-45	15-25
119D2:												
Elco------------	0-6	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	95-100	25-40	5-15
	6-28	Silty clay loam*, silt loam.	CL*	A-7*, A-6	0	0	100	100	95-100	85-100	25-45	10-30
	28-60	Silty clay loam*, loam, clay.	CL*	A-7*, A-6	0	0	100	90-100	80-100	60-95	25-50	10-30
119E2:												
Elco------------	0-2	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-15
	2-9	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-15
	9-32	Silty clay loam*, silt loam.	CL*	A-7*, A-6	0	0	100	100	95-100	85-100	25-45	10-30
	32-60	Silty clay loam*, clay loam, clay.	CL*	A-7*, A-6	0	0	100	90-100	85-95	75-95	25-45	10-30
131B:												
Alvin-----------	0-4	Sandy loam*	SM*, SC	A-4*, A-2-4	0	0	100	100	80-95	30-60	15-25	NP-5
	4-10	Fine sandy loam*, sandy loam, loamy fine sand.	SC*, SM	A-2-4*, A-4	0	0	100	100	80-95	30-60	15-25	NP-7
	10-42	Sandy loam*, very fine sandy loam, loam.	SC, SM*, ML	A-4*, A-2-4, A-6	0	0	100	100	70-100	20-80	15-40	NP-15
	42-60	Stratified sandy loam to loamy sand to sand*, loamy sand.	SM*, SP, SP-SM	A-2-4*, A-1, A-3	0	0	95-100	90-100	45-95	4-35	15-20	NP-4

Table 18.--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	
131D:												
Alvin-----------	0-5	Sandy loam*	SM*, SC	A-4*, A-2-4	0	0	100	100	80-95	30-60	15-25	NP-5
	5-20	Fine sandy loam*, sandy loam, loamy fine sand.	SC*, SM	A-2-4*, A-4	0	0	100	100	80-95	30-60	15-25	NP-7
	20-45	Sandy loam*, very fine sandy loam, loam.	SC, SM*, ML	A-4*, A-2-4, A-6	0	0	100	100	70-100	20-80	15-40	NP-15
	45-60	Stratified sandy loam to loamy sand to sand*, loamy sand.	SM*, SP, SP-SM	A-2-4*, A-1, A-3	0	0	95-100	90-100	45-95	4-35	15-20	NP-4
131F:												
Alvin-----------	0-3	Sandy loam*	SM*, SC	A-4*, A-2-4	0	0	100	100	80-95	30-60	15-25	NP-5
	3-9	Fine sandy loam*, sandy loam, loamy fine sand.	SC*, SM	A-2-4*, A-4	0	0	100	100	80-95	30-60	15-25	NP-7
	9-40	Sandy loam*, very fine sandy loam, loam.	SC, SM*, ML	A-4*, A-2-4, A-6	0	0	100	100	70-100	20-80	15-40	NP-15
	40-60	Stratified sandy loam to loamy sand to sand*, loamy sand.	SM*, SP, SP-SM	A-2-4*, A-1, A-3	0	0	95-100	90-100	45-95	4-35	15-20	NP-4
134B:												
Camden----------	0-9	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0	100	100	95-100	95-100	24-37	6-15
	9-15	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0	100	100	95-100	95-100	24-35	6-15
	15-34	Silty clay loam*, silt loam.	CL*	A-6*	0	0	100	97-100	95-100	90-100	35-46	14-24
	34-40	Clay loam*, sandy loam, silt loam.	CL*, ML, SC	A-6*, A-4	0	0-5	90-100	90-100	70-85	45-70	25-33	8-14
	40-60	Stratified loamy sand to sandy loam*.	SM*, SC-SM	A-2-4*	0	0-5	90-100	70-100	35-60	14-40	19-25	1-7

Table 18.--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	
134C2:												
Camden----------	0-7	Silt loam*	CL*, CL-ML, ML	A-4*, A-6	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silty clay loam*, silt loam.	CL*	A-6*	0	0	100	97-100	95-100	95-100	35-46	14-24
	34-43	Loam*, clay loam	CL*, ML, SC	A-6*, A-4	0	0	90-100	90-100	70-85	45-70	25-33	8-14
	43-80	Stratified loamy sand to sandy loam*.	SM*, SC-SM	A-2-4*, A-4, A-1-b	0	0	90-100	80-100	35-60	15-40	19-25	1-7
134D2:												
Camden----------	0-7	Silt loam*	CL*, CL-ML, ML	A-6*, A-4	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silty clay loam*, silt loam.	CL*	A-6*	0	0	100	97-100	95-100	95-100	35-46	14-24
	34-43	Loam*, clay loam	CL*, ML, SC	A-6*, A-4	0	0	90-100	90-100	70-85	45-70	25-33	8-14
	43-80	Stratified loamy sand to sandy loam*.	SM*, SC-SM	A-2-4*, A-4, A-1-b	0	0	90-100	80-100	35-60	15-40	19-25	1-7
249A:												
Edinburg--------	0-16	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	90-100	35-50	16-25
	16-55	Silty clay loam*, silty clay.	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-45
	55-60	Silt loam*, silty clay loam.	CL*	A-6*, A-7	0	0	100	100	95-100	90-100	35-45	15-20
257A:												
Clarksdale------	0-8	Silt loam*	CL*	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	8-16	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	20-35	8-18
	16-47	Silty clay loam*, silty clay.	CH*, CL	A-7*	0	0	100	100	95-100	90-100	40-65	25-40
	47-67	Silt loam*, silty clay loam.	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	25-45	10-25
	67-80	Silt loam*	CL*	A-6*	0	0	95-100	95-100	95-100	90-100	25-40	10-20
259C2:												
Assumption------	0-8	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	8-20
	8-24	Silty clay loam*, silt loam.	CL*	A-6*, A-7	0	0	100	100	95-100	90-100	30-50	10-30
	24-60	Clay loam*, silty clay loam.	CL*	A-6*, A-7	0	0-5	100	95-100	90-100	70-90	35-50	10-30

Table 18.--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	
259D2:												
Assumption------	0-7	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	8-20
	7-28	Silty clay loam*, silt loam.	CL*	A-6*, A-7	0	0	100	100	95-100	90-100	30-50	10-30
	28-60	Clay loam*, silty clay loam, clay.	CL*	A-6*, A-7	0	0-5	100	95-100	90-100	70-90	35-50	20-35
259D3:												
Assumption------	0-8	Silty clay loam*	CL*	A-6*, A-7-6	0	0	100	100	95-100	90-100	30-45	15-30
	8-29	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	30-50	10-30
	29-60	Clay loam*, silty clay loam, clay.	CL*	A-7-6*, A-6	0	0-5	100	95-100	85-100	70-90	35-50	20-35
279B:												
Rozetta---------	0-7	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	7-11	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-55	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	55-60	Silt loam*, silty clay loam.	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20
279C2:												
Rozetta---------	0-8	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	8-56	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	56-80	Silt loam*, silty clay loam.	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20
280B:												
Fayette---------	0-9	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	5-15
	9-39	Silty clay loam*, silt loam.	CL*	A-7*, A-6	0	0	100	100	100	95-100	35-45	15-25
	39-60	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	10-20
280C2:												
Fayette---------	0-8	Silt loam*	CL*	A-6*, A-7	0	0	100	100	100	95-100	30-45	10-25
	8-64	Silty clay loam*, silt loam.	CL*	A-7*, A-6	0	0	100	100	100	95-100	35-45	15-25
	64-80	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	10-20
280D2:												
Fayette---------	0-6	Silt loam*	CL*	A-6*, A-7	0	0	100	100	100	95-100	30-45	10-25
	6-48	Silty clay loam*, silt loam.	CL*	A-7*, A-6	0	0	100	100	100	95-100	35-45	15-25
	48-60	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	10-20

Table 18.--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	
280F:												
Fayette---------	0-3	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	5-15
	3-10	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	10-45	Silty clay loam*, silt loam.	CL*	A-7*, A-6	0	0	100	100	100	95-100	35-45	15-25
	45-60	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	10-20
344B:												
Harvard---------	0-7	Silt loam*	CL*	A-6*, A-4	0	0	100	95-100	90-100	85-100	30-40	8-15
	7-37	Silty clay loam*, silt loam.	CL*, ML	A-7-6*, A-6	0	0	100	90-100	90-100	85-100	35-45	10-20
	37-45	Clay loam* silt loam, sandy loam.	CL*, ML	A-6*, A-4, A-7-6	0	0-3	95-100	85-95	75-90	55-85	30-45	5-20
	45-60	Stratified sandy loam to loam to loamy sand*.	SC-SM*, CL, CL-ML, SM	A-4*, A-2, A-6, A-7	0	0-5	90-100	80-95	40-90	15-70	20-45	NP-20
536.												
Dumps												
549D2:												
Marseilles------	0-5	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	5-15
	5-27	Silty clay loam*, clay loam, silty clay.	CL*, CH	A-7-6*, A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	27-60	Weathered bedrock*.	---	---	---	---	---	---	---	---	---	---
549F:												
Marseilles------	0-10	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	5-15
	10-35	Silty clay loam*, silty clay, clay loam.	CL*, CH	A-7-6*, A-7	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	35-60	Weathered bedrock*.	---	---	---	---	---	---	---	---	---	---
549G:												
Marseilles------	0-10	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	5-15
	10-35	Silty clay loam*, clay loam, silty clay.	CL*, CH	A-7-6*	0-1	0-5	95-100	90-100	85-100	80-95	40-60	15-30
	35-60	Weathered bedrock*.	---	---	---	---	---	---	---	---	---	---

Table 18.--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	
567B2:												
Elkhart---------	0-8	Silt loam*, silty clay loam.	CL*	A-6*, A-7	0	0	100	100	100	95-100	25-35	8-15
	8-30	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-50	18-30
	30-60	Silt loam*, silt	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	20-37	8-20
567C2:												
Elkhart---------	0-8	Silt loam*, silty clay loam.	CL*	A-6*, A-7	0	0	100	100	100	95-100	25-35	8-15
	8-25	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-50	18-30
	25-60	Silt loam*, silt	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	20-37	8-20
567D2:												
Elkhart---------	0-10	Silt loam*, silty clay loam.	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	25-35	8-15
	10-30	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	95-100	95-100	35-50	18-30
	30-60	Silt loam*, silt	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	20-37	8-20
567D3:												
Elkhart---------	0-7	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-50	18-30
	7-21	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-50	18-30
	21-60	Silt loam*, silt	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	20-37	8-20
660C2:												
Coatsburg-------	0-10	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-15
	10-80	Silty clay*, clay, silty clay loam.	CH*	A-7-6*	0	0	100	95-100	75-90	65-85	50-70	35-55
675B:												
Greenbush-------	0-14	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	100	95-100	25-35	5-15
	14-60	Silty clay loam*, silt loam.	CL*	A-6*, A-7	0	0	100	100	100	95-100	35-45	15-25
	60-80	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	11-20
801B:												
Orthents--------	0-80	Silty clay loam*, silt loam.	CL*, CL-ML	A-7-6*, A-4, A-6	0	0	100	100	90-100	80-95	25-45	5-25

Table 18.--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	
802B:												
Orthents--------	0-6	Loam*	CL*	A-6*	0-1	0-5	95-100	90-100	85-95	60-90	20-40	10-20
	6-60	Loam*, silt loam, clay loam.	CL*	A-6*	0-1	0-5	95-100	90-100	85-95	60-90	20-40	10-20
835G. Earthen dams												
863, 864, 865. Pits												
871B:												
Lenzburg--------	0-2	Silty clay loam*	CL*	A-7-6*, A-6, A-7	0-1	2-10	90-100	75-100	65-95	55-85	35-47	15-25
	2-17	Silty clay loam*, channery clay loam, clay loam.	CL*, CH	A-7-6*, A-6, A-7	0-2	2-10	70-95	60-90	55-90	50-90	30-55	15-30
	17-60	Channery loam*, channery clay loam, silty clay loam, silt loam.	CL*, CH	A-6*, A-7	0-5	2-10	80-95	60-95	50-90	35-85	29-55	13-27
871D:												
Lenzburg--------	0-2	Silty clay loam*	CL*	A-7-6*, A-6, A-7	0-1	2-10	90-100	75-100	65-95	55-85	35-47	15-25
	2-17	Silty clay loam*, channery clay loam, clay loam.	CL*, CH	A-7-6*, A-6, A-7	0-2	2-10	70-95	60-90	55-90	50-90	30-55	15-30
	17-60	Channery loam*, channery clay loam, silty clay loam, silt loam.	CL*, CH	A-6*, A-7	0-5	2-10	80-95	60-95	50-90	35-85	29-55	13-27
871G:												
Lenzburg--------	0-3	Silty clay loam*	CL*	A-7-6*, A-6, A-7	0-1	2-10	80-95	60-90	50-85	40-80	37-47	18-27
	3-24	Channery silty clay loam*, silty clay loam, silt loam.	CL*	A-6*, A-7	0-1	3-9	75-95	55-95	50-90	45-85	30-45	15-30
	24-60	Channery clay loam*, clay loam, silty clay loam.	CL*, CH	A-7-6*, A-6, A-7	0-3	2-14	75-95	40-85	35-82	25-80	30-55	13-27

Table 18.--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	
872B:												
Rapatee---------	0-3	Silty clay loam*, silt loam.	CL*, ML	A-7-6*, A-4, A-6	0	0	100	100	95-100	90-100	39-47	10-18
	3-48	Silty clay loam*, silt loam.	CL*, ML	A-7-6*, A-4, A-6	0	0-10	90-100	75-100	70-100	65-95	26-45	10-25
	48-60	Clay loam*, silty clay loam, loam.	CL*, ML	A-6*, A-4	0	0-15	90-100	65-90	60-90	55-80	24-43	9-25
901B:												
Ipava-----------	0-20	Silt loam*	ML*, CL	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	20-40	Silty clay loam*, silty clay.	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-40
	40-60	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20
Osco------------	0-14	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	35-45	7-20
	14-55	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	40-50	15-25
	55-60	Silt loam*, silty clay loam.	CL*, ML	A-6*, A-4	0	0	100	100	100	95-100	35-45	7-25
902A:												
Ipava-----------	0-20	Silt loam*	ML*, CL	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	20-40	Silty clay loam*, silty clay.	CH*, CL	A-7*	0	0	100	100	95-100	90-100	45-70	25-40
	40-60	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	5-20
Sable-----------	0-17	Silty clay loam*	CH*, CL, MH, ML	A-7-6*	0	0	100	100	95-100	95-100	41-65	15-35
	17-23	Silty clay loam*	CH*, CL, MH, ML	A-7-6*	0	0	100	100	95-100	95-100	41-65	15-35
	23-60	Silty clay loam*, silt loam.	CL*, CH	A-7-6*	0	0	100	100	95-100	95-100	40-55	20-35
3074A:												
Radford---------	0-12	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	85-100	28-36	5-15
	12-33	Silt loam*	CL*, ML	A-6*, A-4	0	0	100	100	95-100	85-100	28-36	5-15
	33-60	Silty clay loam*, silt loam, clay loam.	CL*	A-6*, A-7	0	0	100	100	85-100	70-95	35-50	15-25

Table 18.--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	
3107+:												
Sawmill---------	0-11	Silt loam*	CL*	A-6*	0	0	100	100	95-100	85-100	25-40	10-20
	11-36	Silty clay loam*	CL*	A-6*, A-7	0	0	100	100	95-100	85-100	30-50	15-30
	36-53	Silty clay loam*, clay loam, loam.	CL*	A-6*, A-4, A-7	0	0	100	100	95-100	70-95	25-50	8-25
	53-60	Silty clay loam*, clay loam, silt loam.	CL*	A-6*, A-4, A-7	0	0	100	100	85-100	70-95	20-50	8-30
3415A:												
Orion-----------	0-7	Silt loam*	CL*, CL-ML	A-4*, A-6	0	0	100	100	85-100	80-100	25-35	4-12
	7-22	Stratified very fine sand to silt loam*.	CL-ML*, CL	A-4*	0	0	100	100	90-100	70-80	20-30	4-10
	22-60	Silt loam*, silty clay loam.	CL*, CL-ML	A-6*, A-4	0	0	100	100	85-100	85-100	20-40	4-18
	60-80	Stratified sand to silt loam*.	CL-ML*, CL	A-4*	0	0	80-100	80-100	80-100	80-100	20-30	4-10
3451A:												
Lawson----------	0-14	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	90-100	85-100	20-35	5-15
	14-33	Silt loam*, silty clay loam.	CL*, CL-ML	A-4*	0	0	100	100	90-100	85-100	20-40	5-20
	33-80	Silt loam*, silty clay loam.	CL*	A-6*, A-4	0	0	100	100	90-100	60-100	30-40	10-20
7081B:												
Littleton-------	0-6	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	7-20
	6-32	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	25-40	7-20
	32-60	Silt loam*	CL*, CL-ML	A-6*, A-4, A-7	0	0	100	100	95-100	80-100	20-45	5-20
7104A:												
Virgil----------	0-8	Silt loam*	CL*	A-6*, A-4	0	0	100	100	90-100	85-95	20-35	8-20
	8-13	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	95-100	85-95	20-35	5-20
	13-19	Silt loam*, silty clay loam.	CL*	A-6*, A-4	0	0	100	100	90-100	85-95	20-35	5-20
	19-47	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	95-100	90-100	30-50	15-30
	47-55	Loam*	CL*	A-6*, A-7-6	0	0	100	100	80-100	55-80	23-37	8-20
	55-63	Stratified loam to silt loam to clay loam*, sandy loam, silty clay loam.	CL*, CL-ML, SC, SC-SM	A-4*, A-6, A-2-4, A-2-6	0	0-5	90-100	85-100	70-100	30-90	20-35	5-15

Table 18.--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	
8077A:												
Huntsville------	0-27	Silt loam*	CL*	A-6*	0	0	100	95-100	90-100	85-100	25-40	10-20
	27-54	Silt loam*	CL*	A-6*	0	0	100	95-100	90-100	85-100	20-35	10-20
	52-80	Silt loam*, loam, very fine sandy loam.	CL*, CL-ML, SC, SC-SM	A-6*, A-2, A-4	0	0	95-100	90-100	85-95	30-85	20-35	5-20
8239A:												
Dorchester------	0-6	Silt loam*	CL*, CL-ML, ML	A-4*	0	0	95-100	95-100	80-100	70-95	25-35	5-10
	6-60	Stratified silt loam*, silty clay loam, clay loam.	CL*, ML	A-6*, A-7-6	0	0	100	100	95-100	90-95	35-45	10-20
9017A:												
Keomah----------	0-9	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	5-15
	9-16	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	4-15
	16-49	Silty clay loam*, silty clay.	CH*	A-7*	0	0	100	100	100	95-100	45-60	30-45
	49-80	Silty clay loam*, silt loam.	CL*	A-6*, A-7	0	0	100	100	100	95-100	35-50	15-30
9086B:												
Osco------------	0-14	Silt loam*	CL*	A-6*, A-7-6	0	0	100	100	100	95-100	37-46	13-18
	14-55	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	34-47	16-25
	55-60	Silt loam*, silty clay loam.	CL*	A-6*, A-7	0	0	100	100	100	95-100	29-42	13-21
9257A:												
Clarksdale------	0-10	Silt loam*	CL*	A-6*	0	0	100	100	95-100	90-100	25-40	10-20
	10-16	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	90-100	20-35	8-18
	16-46	Silty clay loam*, silty clay.	CH*, CL	A-7*	0	0	100	100	95-100	90-100	40-65	25-40
	46-80	Silt loam*, silty clay loam.	CL*	A-6*	0	0	95-100	95-100	95-100	90-100	25-40	10-25
9279B:												
Rozetta---------	0-9	Silt loam*	CL*	A-6*, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	9-66	Silty clay loam*	CL*	A-7*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	66-76	Silt loam*, silty clay loam.	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20

Table 18.--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	
9279C2:												
Rozetta---------	0-7	Silt loam*	CL*	A-4*, A-6	0	0	100	100	95-100	95-100	24-35	8-15
	7-66	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	66-70	Silt loam*, silty clay loam.	CL*	A-6*, A-4	0	0	100	100	95-100	85-100	25-40	7-20
9280B:												
Fayette---------	0-9	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	25-35	5-15
	9-39	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-45	15-25
	39-60	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	10-20
9280C2:												
Fayette---------	0-8	Silt loam*	CL*	A-6*, A-7-6	0	0	100	100	100	95-100	30-45	10-25
	8-64	Silty clay loam*, silt loam.	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	35-45	15-25
	64-80	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	30-40	10-20
9675B:												
Greenbush-------	0-14	Silt loam*	CL*, CL-ML	A-6*, A-4	0	0	100	100	100	95-100	29-41	11-17
	14-60	Silty clay loam*	CL*	A-7-6*, A-6	0	0	100	100	100	95-100	37-47	18-25
	60-80	Silt loam*	CL*	A-6*	0	0	100	100	100	95-100	29-39	12-19
M-W. Miscellaneous water												
W. Water												

Table 19.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors			Wind erodi-bility group	Wind erodi-bility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
7D3:												
Atlas------------	0-4	30-40	1.35-1.55	0.06-0.2	0.14-0.19	6.0-8.9	0.5-1.0	.28	.28	2	4	86
	4-66	38-45	1.35-1.55	0.01-0.06	0.07-0.19	6.0-8.9	0.0-1.0	.28	.28			
	66-80	25-45	1.35-1.60	0.06-0.2	0.07-0.18	3.0-5.9	0.0-1.0	.28	.28			
8D2:												
Hickory----------	0-6	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	6-51	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	51-60	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.2	.28	.32			
8F:												
Hickory----------	0-4	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	4-12	15-22	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.37	.37			
	12-53	24-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	53-58	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
	58-63	15-30	1.50-1.75	0.6-2	0.10-0.15	0.0-2.9	0.0-0.5	.28	.32			
8F2:												
Hickory----------	0-12	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-2.0	.32	.32	5	6	48
	12-46	24-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	46-72	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
8G:												
Hickory----------	0-4	19-25	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	4-12	15-22	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.37	.37			
	12-40	24-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.32			
	40-58	15-32	1.50-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.32			
	58-63	15-30	1.50-1.75	0.6-2	0.10-0.15	0.0-2.9	0.0-0.5	.28	.32			
17A:												
Keomah-----------	0-11	16-26	1.35-1.45	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	11-18	16-26	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	0.1-1.0	.49	.49			
	18-33	35-42	1.30-1.40	0.06-0.2	0.15-0.19	6.0-8.9	0.1-0.5	.37	.37			
	33-51	27-35	1.35-1.45	0.2-0.6	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	51-89	15-27	1.40-1.60	0.2-2	0.19-0.22	0.0-2.9	0.0-0.2	.49	.49			
19C3:												
Sylvan-----------	0-7	27-32	1.25-1.45	0.6-2	0.20-0.22	3.0-5.9	0.5-1.0	.37	.37	5	6	48
	7-37	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	37-60	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
19D3:												
Sylvan-----------	0-9	27-32	1.25-1.45	0.6-2	0.20-0.22	3.0-5.9	0.5-1.0	.37	.37	4	6	48
	9-28	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	28-60	10-27	1.30-1.50	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
43A:												
Ipava------------	0-20	20-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	20-40	35-43	1.25-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	40-60	20-30	1.30-1.55	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
45A:												
Denny------------	0-9	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	9-22	15-22	1.25-1.45	0.2-0.6	0.18-0.20	0.0-2.9	0.0-0.5	.43	.43			
	22-45	35-45	1.20-1.40	0.06-0.2	0.11-0.22	6.0-8.9	0.0-1.0	.37	.37			
	45-60	25-35	1.40-1.60	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.2	.43	.43			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
68A:												
Sable------------	0-17	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	5.0-6.0	.24	.24	5	6	48
	17-23	27-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	2.0-4.0	.24	.24			
	23-60	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
86B:												
Osco-------------	0-14	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	14-55	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
86B2:												
Osco-------------	0-8	20-26	1.40-1.60	0.6-2	0.18-0.22	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-42	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.0-1.0	.37	.37			
	42-51	15-30	1.35-1.55	0.6-2	0.18-0.23	0.0-2.9	0.0-0.5	.49	.49			
	51-60	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			
86C:												
Osco-------------	0-14	20-26	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	14-43	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	43-60	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
86C2:												
Osco-------------	0-9	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	9-34	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	34-60	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
86D2:												
Osco-------------	0-8	20-27	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	8-51	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	51-60	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
119D2:												
Elco-------------	0-6	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	6-28	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-60	25-45	1.45-1.70	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.2	.28	.28			
119E2:												
Elco-------------	0-2	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	2-9	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	0.0-0.5	.49	.49			
	9-32	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	32-60	25-45	1.40-1.60	0.06-0.6	0.16-0.20	6.0-8.9	0.0-0.2	.28	.28			
131B:												
Alvin------------	0-4	10-15	1.45-1.65	2-6	0.14-0.17	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	4-10	5-15	1.45-1.65	2-6	0.10-0.17	0.0-2.9	0.0-0.5	.24	.24			
	10-42	10-22	1.40-1.65	2-6	0.14-0.18	0.0-2.9	0.0-0.5	.24	.24			
	42-60	3-15	1.45-1.65	2-6	0.10-0.15	0.0-2.9	0.0-0.3	.02	.02			
131D:												
Alvin------------	0-5	10-15	1.45-1.65	2-6	0.14-0.17	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	5-20	5-15	1.45-1.65	2-6	0.10-0.17	0.0-2.9	0.0-0.5	.24	.24			
	20-45	10-22	1.40-1.65	2-6	0.14-0.18	0.0-2.9	0.0-0.5	.24	.24			
	45-60	3-15	1.45-1.65	2-6	0.10-0.15	0.0-2.9	0.0-0.3	.02	.02			
131F:												
Alvin------------	0-3	10-15	1.45-1.65	2-6	0.14-0.17	0.0-2.9	0.5-1.0	.24	.24	5	3	86
	3-9	5-15	1.45-1.65	2-6	0.10-0.17	0.0-2.9	0.0-0.5	.24	.24			
	9-40	10-22	1.40-1.65	2-6	0.14-0.18	0.0-2.9	0.0-0.5	.24	.24			
	40-60	3-15	1.45-1.65	2-6	0.10-0.15	0.0-2.9	0.0-0.3	.02	.02			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
								Kw	Kf	T		
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
134B:												
Camden-----------	0-9	14-27	1.35-1.55	0.6-2	0.21-0.25	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	9-15	14-27	1.35-1.55	0.6-2	0.21-0.25	0.0-2.9	0.1-0.5	.43	.43			
	15-34	22-35	1.40-1.60	0.6-2	0.14-0.24	3.0-5.9	0.1-0.5	.37	.37			
	34-40	18-30	1.45-1.65	0.6-2	0.11-0.22	0.0-2.9	0.0-0.5	.32	.32			
	40-60	5-20	1.40-1.70	0.6-6	0.12-0.22	0.0-2.9	0.0-0.5	.28	.28			
134C2:												
Camden-----------	0-7	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.5	.43	.43	5	6	48
	7-34	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.5	.28	.28			
134D2:												
Camden-----------	0-7	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-2.5	.43	.43	5	6	48
	7-34	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.5	.28	.28			
249A:												
Edinburg---------	0-16	27-35	1.10-1.30	0.6-2	0.21-0.24	6.0-8.9	3.0-6.0	.24	.24	5	6	48
	16-55	35-46	1.20-1.40	0.06-0.2	0.13-0.20	6.0-8.9	0.2-1.0	.37	.37			
	55-60	22-30	1.30-1.50	0.2-2	0.18-0.22	3.0-5.9	0.0-0.2	.49	.49			
257A:												
Clarksdale-------	0-8	20-27	1.30-1.50	0.6-2	0.22-0.25	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	8-16	15-27	1.25-1.50	0.2-0.6	0.20-0.22	0.0-2.9	0.0-1.0	.43	.43			
	16-47	35-45	1.30-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	47-67	20-30	1.40-1.60	0.6-2	0.20-0.22	3.0-5.9	0.0-0.5	.43	.43			
	67-80	18-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
259C2:												
Assumption-------	0-8	20-27	1.25-1.45	0.6-2	0.23-0.25	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	8-24	25-35	1.20-1.40	0.6-2	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
	24-60	25-45	1.40-1.60	0.06-0.6	0.16-0.20	3.0-8.9	0.0-0.5	.28	.28			
259D2:												
Assumption-------	0-7	20-27	1.25-1.45	0.6-2	0.23-0.25	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	7-28	25-35	1.20-1.40	0.6-2	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
	28-60	30-45	1.45-1.65	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.5	.28	.28			
259D3:												
Assumption-------	0-8	27-35	1.30-1.50	0.6-2	0.15-0.19	3.0-5.9	1.0-2.0	.37	.37	5	6	48
	8-29	25-35	1.50-1.60	0.6-2	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
	29-60	30-45	1.45-1.65	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.5	.28	.28			
279B:												
Rozetta----------	0-7	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	7-11	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	11-55	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.0-0.5	.37	.37			
	55-60	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
279C2:												
Rozetta----------	0-8	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	8-56	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	56-80	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
280B:												
Fayette----------	0-9	15-27	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-39	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	39-60	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
280C2:												
Fayette----------	0-8	25-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	8-64	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	64-80	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
280D2:												
Fayette----------	0-6	25-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	6-48	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	48-60	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
280F:												
Fayette----------	0-3	15-27	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	3-10	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	10-45	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	45-60	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
344B:												
Harvard----------	0-7	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.32	.32	5	6	48
	7-37	25-35	1.25-1.55	0.6-2	0.15-0.20	3.0-5.9	0.0-0.5	.43	.43			
	37-45	15-35	1.30-1.60	0.6-2	0.12-0.19	0.0-2.9	0.0-0.4	.43	.43			
	45-60	5-25	1.40-1.70	2-6	0.05-0.15	0.0-2.9	0.0-0.4	.43	.43			
536.												
Dumps												
549D2:												
Marseilles-------	0-5	20-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	5-27	27-42	1.35-1.60	0.06-0.2	0.09-0.20	3.0-5.9	0.0-0.5	.37	.37			
	27-60	---	---	0.0015-0.2	---	---	---	---	---			
549F:												
Marseilles-------	0-10	20-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	10-35	27-42	1.35-1.60	0.06-0.2	0.09-0.20	3.0-5.9	0.0-0.5	.37	.37			
	35-60	---	---	0.0015-0.2	---	---	---	---	---			
549G:												
Marseilles-------	0-10	20-27	1.20-1.40	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.32	.32	3	6	48
	10-35	27-42	1.35-1.60	0.06-0.2	0.09-0.20	3.0-5.9	0.0-0.5	.37	.37			
	35-60	---	---	0.0015-0.2	---	---	---	---	---			
567B2:												
Elkhart----------	0-8	20-29	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.28	.28	4	6	48
	8-30	25-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.43	.43			
	30-60	10-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.0-0.1	.43	.43			
567C2:												
Elkhart----------	0-8	20-29	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	8-25	25-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	25-60	10-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.0-0.1	.49	.49			
567D2:												
Elkhart----------	0-10	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.28	.28	5	6	48
	10-30	25-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	30-60	10-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.0-0.1	.49	.49			
567D3:												
Elkhart----------	0-7	27-35	1.20-1.40	0.6-2	0.20-0.22	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	7-21	25-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	21-60	10-27	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.0-0.1	.49	.49			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
660C2:												
Coatsburg--------	0-10	20-30	1.20-1.40	0.2-0.6	0.22-0.24	3.0-5.9	3.0-4.0	.24	.24	3	6	48
	10-80	35-45	1.50-1.70	0.01-0.06	0.09-0.13	6.0-8.9	0.0-1.0	.28	.28			
675B:												
Greenbush--------	0-14	18-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	14-60	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	60-80	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
801B:												
Orthents---------	0-80	20-35	1.35-1.55	0.2-2	0.18-0.22	3.0-5.9	0.2-1.0	.43	.43	5	4L	86
802B:												
Orthents---------	0-6	22-30	1.70-1.75	0.2-0.6	0.18-0.22	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	6-60	22-30	1.70-1.80	0.2-0.6	0.16-0.20	3.0-5.9	0.2-1.0	.43	.43			
835G.												
Earthen dams												
863, 864, 865.												
Pits												
871B:												
Lenzburg---------	0-2	27-35	1.30-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.32	.32	5	4L	86
	2-17	25-40	1.40-1.70	0.2-0.6	0.11-0.17	3.0-5.9	0.2-1.0	.32	.32			
	17-60	20-35	1.50-1.70	0.2-0.6	0.08-0.18	3.0-5.9	0.2-0.5	.37	.43			
871D:												
Lenzburg---------	0-2	27-35	1.30-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-1.0	.32	.32	5	4L	86
	2-17	25-40	1.40-1.70	0.2-0.6	0.11-0.17	3.0-5.9	0.2-1.0	.32	.32			
	17-60	20-35	1.50-1.70	0.2-0.6	0.08-0.18	3.0-5.9	0.2-0.5	.37	.43			
871G:												
Lenzburg---------	0-3	27-35	1.30-1.60	0.6-2	0.17-0.22	3.0-5.9	0.5-4.0	.32	.32	5	4L	86
	3-24	20-35	1.40-1.70	0.2-0.6	0.11-0.17	3.0-5.9	0.2-1.0	.37	.43			
	24-60	25-40	1.40-1.70	0.2-0.6	0.08-0.18	3.0-5.9	0.2-1.0	.37	.43			
872B:												
Rapatee----------	0-3	24-35	1.25-1.60	0.2-0.6	0.15-0.20	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	3-48	15-35	1.50-1.90	0.06-0.6	0.08-0.15	3.0-5.9	0.0-2.5	.37	.43			
	48-60	15-35	1.60-1.90	0.0015-0.06	0.03-0.18	0.0-2.9	0.0-0.8	.37	.43			
901B:												
Ipava------------	0-20	20-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	20-40	35-43	1.25-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	40-60	20-30	1.30-1.55	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
Osco-------------	0-14	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	14-55	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
902A:												
Ipava------------	0-20	20-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	20-40	35-43	1.25-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.5-1.0	.37	.37			
	40-60	20-30	1.30-1.55	0.2-0.6	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			
Sable------------	0-17	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	5.0-6.0	.24	.24	5	6	48
	17-23	27-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	2.0-4.0	.24	.24			
	23-60	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
3074A:												
Radford----------	0-12	18-27	1.40-1.60	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	12-33	18-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-2.0	.49	.49			
	33-60	24-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
3107+:												
Sawmill----------	0-11	18-27	1.25-1.40	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.32	.32	5	6	48
	11-36	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	1.0-3.0	.28	.28			
	36-53	25-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	0.0-2.0	.32	.32			
	53-60	18-35	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.0-1.0	.28	.28			
3415A:												
Orion------------	0-7	10-18	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-22	9-18	1.20-1.30	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.55	.55			
	22-60	10-30	1.25-1.45	0.6-2	0.18-0.22	0.0-2.9	3.0-8.0	.37	.37			
	60-80	9-18	1.20-1.40	0.6-2	0.18-0.22	0.0-2.9	0.0-0.5	.37	.37			
3451A:												
Lawson-----------	0-14	10-27	1.20-1.55	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	14-33	10-30	1.20-1.55	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.32	.32			
	33-80	18-30	1.55-1.65	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.49	.49			
7081B:												
Littleton--------	0-6	18-27	1.20-1.45	0.6-2	0.20-0.24	0.0-2.9	3.0-4.0	.32	.32	5	6	48
	6-32	22-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.5-2.0	.49	.49			
	32-60	18-27	1.20-1.40	0.6-2	0.20-0.22	0.0-2.9	0.0-1.0	.49	.49			
7104A:												
Virgil-----------	0-8	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	8-13	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.43	.43			
	13-19	15-32	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.2-1.0	.32	.32			
	19-47	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	47-55	15-27	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.2-0.5	.32	.32			
	55-63	15-30	1.45-1.75	0.6-6	0.05-0.11	0.0-2.9	0.2-0.5	.28	.32			
8077A:												
Huntsville-------	0-27	18-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.32	.32	5	6	48
	27-54	18-27	1.20-1.40	0.6-2	0.20-0.22	3.0-5.9	0.5-1.0	.32	.32			
	52-80	10-25	1.20-1.50	0.6-2	0.17-0.21	0.0-2.9	0.2-1.0	.49	.49			
8239A:												
Dorchester-------	0-6	11-30	1.20-1.30	0.6-2	0.20-0.22	0.0-2.9	0.5-2.0	.37	.37	5	4L	86
	6-60	18-30	1.25-1.40	0.6-2	0.22-0.24	3.0-5.9	1.0-4.0	.37	.37			
9017A:												
Keomah-----------	0-9	16-26	1.30-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-16	16-26	1.35-1.45	0.2-0.6	0.18-0.20	0.0-2.9	0.2-1.0	.49	.49			
	16-49	35-42	1.30-1.45	0.06-0.6	0.18-0.20	6.0-8.9	0.0-0.5	.37	.37			
	49-80	24-38	1.40-1.55	0.2-2	0.18-0.20	3.0-5.9	0.0-0.5	.43	.43			
9086B:												
Osco-------------	0-14	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	14-55	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
9257A:												
Clarksdale-------	0-10	20-27	1.30-1.50	0.6-2	0.22-0.25	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	10-16	15-27	1.25-1.50	0.2-0.6	0.20-0.22	0.0-2.9	0.0-1.0	.43	.43			
	16-46	35-45	1.30-1.50	0.2-0.6	0.11-0.20	6.0-8.9	0.0-0.5	.37	.37			
	46-80	20-30	1.40-1.60	0.2-2	0.20-0.22	3.0-5.9	0.0-0.5	.49	.49			

Table 19.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T	Wind erodi- bility group	Wind erodi- bility index
	In	Pct	g/cc	In/hr	In/in	Pct	Pct					
9279B:												
Rozetta----------	0-9	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-66	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	66-76	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
9279C2:												
Rozetta----------	0-7	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	7-66	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	66-70	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
9280B:												
Fayette----------	0-9	15-27	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-39	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	39-60	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
9280C2:												
Fayette----------	0-8	25-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	8-64	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	64-80	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
9675B:												
Greenbush--------	0-14	18-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	14-60	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	60-80	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
M-W. Miscellaneous water												
W. Water												

Table 20.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	pH	Pct
7D3:				
Atlas----------------	0-4	19-26	4.5-7.3	0
	4-66	18-29	4.5-7.8	0-25
	66-80	12-20	6.1-7.8	0-25
8D2:				
Hickory--------------	0-6	14-19	4.5-7.3	0
	6-51	14-18	4.5-7.3	0
	51-60	9-19	5.1-8.4	0-25
8F:				
Hickory--------------	0-4	14-19	4.5-7.3	0
	4-12	9-14	4.5-7.3	0
	12-53	12-19	4.5-7.3	0
	53-58	9-19	5.1-7.8	0-15
	58-63	5-15	5.6-8.4	0-25
8F2:				
Hickory--------------	0-12	14-19	4.5-7.3	0
	12-46	16-22	4.5-7.3	0
	46-72	9-19	5.1-7.8	0-25
8G:				
Hickory--------------	0-4	14-19	4.5-7.3	0
	4-12	9-14	4.5-7.3	0
	12-40	12-19	4.5-7.3	0
	40-58	9-19	5.1-7.8	0-15
	58-63	5-15	5.6-8.4	0-25
17A:				
Keomah---------------	0-11	10-26	5.1-7.3	0
	11-18	9-24	5.1-7.3	0
	18-33	28-41	5.1-6.5	0
	33-51	16-29	5.6-7.3	0
	51-89	8-18	6.1-7.3	0-15
19C3:				
Sylvan---------------	0-7	17-21	5.6-7.3	0
	7-37	15-22	5.6-7.3	0
	37-60	6-18	6.6-8.4	0-35
19D3:				
Sylvan---------------	0-9	17-21	5.6-7.3	0
	9-28	15-22	5.6-7.3	0
	28-60	6-18	6.6-8.4	0-35
43A:				
Ipava----------------	0-20	20-27	5.6-7.3	0
	20-40	22-27	5.6-7.8	0
	40-60	12-19	6.1-8.4	0
45A:				
Denny----------------	0-9	18-24	5.6-7.3	0
	9-22	9-15	5.6-6.5	0
	22-45	21-29	5.6-6.5	0
	45-60	15-21	5.6-7.8	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	pH	Pct
68A:				
Sable	0-17	26-33	5.6-7.3	0
	17-23	20-30	5.6-7.3	0
	23-60	15-23	5.6-7.8	0
86B:				
Osco	0-14	18-25	5.1-7.3	0
	14-55	15-23	5.1-6.5	0
	55-60	12-18	5.6-7.3	0-15
86B2:				
Osco	0-8	18-25	5.1-7.3	0
	8-42	15-23	5.1-6.5	0
	42-51	12-18	5.1-6.5	0
	51-60	12-18	5.6-7.8	0-15
86C:				
Osco	0-14	18-25	5.1-7.3	0
	14-43	15-23	5.1-6.5	0
	43-60	12-18	5.6-7.3	0
86C2:				
Osco	0-9	18-25	5.1-7.3	0
	9-34	15-23	5.1-6.5	0
	34-60	12-18	5.1-7.3	0-15
86D2:				
Osco	0-8	18-25	5.1-7.3	0
	8-51	15-23	5.1-6.5	0
	51-60	12-18	5.6-7.3	0-15
119D2:				
Elco	0-6	14-22	5.6-7.3	0
	6-28	14-22	5.1-7.8	0
	28-60	15-27	5.1-7.8	0
119E2:				
Elco	0-2	14-22	5.6-7.3	0
	2-9	14-22	5.6-7.3	0
	9-32	14-22	5.1-7.8	0
	32-60	15-27	5.1-7.8	0
131B:				
Alvin	0-4	7-11	4.5-7.3	0
	4-10	6-10	4.5-7.3	0
	10-42	9-14	4.5-7.3	0
	42-60	2-5	5.1-8.4	0-25
131D:				
Alvin	0-5	7-11	4.5-7.3	0
	5-20	6-10	4.5-7.3	0
	20-45	9-14	4.5-7.3	0
	45-60	2-5	5.1-8.4	0-25
131F:				
Alvin	0-3	7-11	4.5-7.3	0
	3-9	6-10	4.5-7.3	0
	9-40	9-14	4.5-7.3	0
	40-60	2-5	5.1-8.4	0-25

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	pH	Pct
134B:				
Camden---------------	0-9	10-20	5.1-7.3	0
	9-15	10-20	5.1-7.3	0
	15-34	13-22	5.1-7.3	0
	34-40	10-19	5.1-7.3	0
	40-60	3-12	5.1-8.4	0-5
134C2:				
Camden---------------	0-7	11-29	5.1-7.3	0
	7-34	15-29	5.1-7.3	0
	34-43	9-20	5.1-7.3	0
	43-80	2-10	6.1-7.8	0-25
134D2:				
Camden---------------	0-7	11-29	5.1-7.3	0
	7-34	15-29	5.1-7.3	0
	34-43	9-20	5.1-7.3	0
	43-80	2-10	6.1-7.8	0-25
249A:				
Edinburg-------------	0-16	22-29	5.6-7.8	0
	16-55	21-28	5.6-7.3	0
	55-60	13-18	6.6-7.8	0-5
257A:				
Clarksdale-----------	0-8	10-22	5.1-7.3	0
	8-16	9-18	5.1-7.3	0
	16-47	21-28	5.1-7.3	0
	47-67	12-19	6.1-8.4	0-15
	67-80	12-18	6.1-8.4	0-15
259C2:				
Assumption-----------	0-8	18-24	5.6-7.3	0
	8-24	15-23	5.1-7.3	0
	24-60	15-22	5.1-7.3	0
259D2:				
Assumption-----------	0-7	18-24	5.6-7.3	0
	7-28	15-23	5.1-7.3	0
	28-60	18-28	5.1-7.3	0
259D3:				
Assumption-----------	0-8	18-25	5.6-7.3	0
	8-29	15-23	5.1-7.3	0
	29-60	18-28	5.1-7.3	0
279B:				
Rozetta--------------	0-7	10-22	5.1-7.3	0
	7-11	7-17	4.5-7.3	0
	11-55	16-22	4.5-6.0	0
	55-60	12-17	5.6-7.8	0-15
279C2:				
Rozetta--------------	0-8	10-22	5.1-7.3	0
	8-56	16-22	4.5-6.0	0
	56-80	12-17	5.6-7.8	0-15
280B:				
Fayette--------------	0-9	15-20	5.1-7.3	0
	9-39	15-23	4.5-6.0	0
	39-60	15-20	5.1-7.8	0-15

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	pH	Pct
280C2:				
Fayette--------------	0-8	18-25	5.1-7.3	0
	8-64	15-22	4.5-6.0	0
	64-80	15-20	5.1-7.8	0-15
280D2:				
Fayette--------------	0-6	18-25	5.1-7.3	0
	6-48	15-22	4.5-6.0	0
	48-60	15-20	5.1-7.8	0-15
280F:				
Fayette--------------	0-3	18-25	5.1-7.3	0
	3-10	7-17	4.5-7.3	0
	10-45	15-20	4.5-6.0	0
	45-60	15-20	5.1-7.8	0-15
344B:				
Harvard--------------	0-7	16-22	5.1-7.8	0
	7-37	15-22	5.1-7.3	0
	37-45	9-22	5.6-7.8	0-5
	45-60	3-19	5.1-8.4	0-20
536.				
Dumps				
549D2:				
Marseilles-----------	0-5	14-22	5.1-6.5	0
	5-27	16-27	4.5-6.5	0
	27-60	---	---	---
549F:				
Marseilles-----------	0-10	14-22	5.1-6.5	0
	10-35	14-23	4.5-6.5	0
	35-60	---	---	---
549G:				
Marseilles-----------	0-10	14-22	5.1-6.5	0
	10-35	14-23	4.5-6.5	0
	35-60	---	---	---
567B2:				
Elkhart--------------	0-8	18-27	5.6-7.8	0
	8-30	15-22	5.6-8.4	0-20
	30-60	12-21	7.4-8.4	10-40
567C2:				
Elkhart--------------	0-8	18-27	5.6-7.8	0
	8-25	15-22	5.6-8.4	0-20
	25-60	12-21	7.4-8.4	10-40
567D2:				
Elkhart--------------	0-10	16-24	5.6-7.8	0
	10-30	15-22	5.6-8.4	0-20
	30-60	12-21	7.4-8.4	10-40
567D3:				
Elkhart--------------	0-7	18-27	5.6-7.8	0
	7-21	15-22	5.6-8.4	0-20
	21-60	12-21	7.4-8.4	10-40

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	pH	Pct
660C2:				
Coatsburg	0-10	18-26	5.1-7.8	0
	10-80	21-29	5.1-6.5	0
675B:				
Greenbush	0-14	20-25	5.1-7.3	0
	14-60	25-30	4.5-7.3	0
	60-80	20-25	5.6-7.3	0
801B:				
Orthents	0-80	10-25	5.1-7.8	0-10
802B:				
Orthents	0-6	10-25	5.6-7.8	0-10
	6-60	10-20	5.6-7.8	0-20
835G:				
Earthen dams				
863, 864, 865.				
Pits				
871B:				
Lenzburg	0-2	17-29	6.6-8.4	0-20
	2-17	15-29	7.4-8.4	0-26
	17-60	12-23	7.4-8.4	0-25
871D:				
Lenzburg	0-2	17-29	6.6-8.4	0-20
	2-17	15-29	7.4-8.4	0-26
	17-60	12-23	7.4-8.4	0-25
871G:				
Lenzburg	0-3	17-29	6.6-8.4	0-20
	3-24	15-29	7.4-8.4	0-25
	24-60	12-23	7.4-8.4	0-26
872B:				
Rapatee	0-3	20-35	6.1-7.3	0-1
	3-48	10-30	6.6-8.4	0-15
	48-60	10-25	6.6-8.4	0-10
901B:				
Ipava	0-20	20-27	5.6-7.3	0
	20-40	22-27	5.6-7.8	0
	40-60	12-19	6.1-8.4	0
Osco	0-14	18-25	5.1-7.3	0
	14-55	15-23	5.1-6.5	0
	55-60	12-18	5.6-7.3	0-15
902A:				
Ipava	0-20	20-27	5.6-7.3	0
	20-40	22-27	5.6-7.8	0
	40-60	12-19	6.1-8.4	0
Sable	0-17	26-33	5.6-7.3	0
	17-23	20-30	5.6-7.3	0
	23-60	15-23	5.6-7.8	0

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	pH	Pct
3074A:				
Radford--------------	0-12	15-24	5.6-7.8	0
	12-33	11-20	6.1-7.8	0
	33-60	14-23	6.1-7.8	0-20
3107+:				
Sawmill--------------	0-11	19-26	6.1-7.8	0
	11-36	17-27	6.1-7.8	0
	36-53	16-25	6.1-7.8	0-10
	53-60	11-22	6.1-8.4	0-30
3415A:				
Orion----------------	0-7	7-20	5.6-7.8	0
	7-22	7-20	5.6-7.8	0
	22-60	10-35	5.6-7.8	0
	60-80	5-15	5.6-7.8	0
3451A:				
Lawson---------------	0-14	11-28	6.1-7.8	0
	14-33	11-29	6.1-7.8	0
	33-80	11-23	6.1-7.8	0
7081B:				
Littleton------------	0-6	11-28	5.6-7.8	0
	6-32	11-29	5.6-7.8	0
	32-60	11-23	5.6-7.8	0
7104A:				
Virgil---------------	0-8	13-24	6.1-7.8	0
	8-13	9-17	5.1-7.3	0
	13-19	13-24	6.1-7.8	0
	19-47	16-23	5.1-7.8	0
	47-55	16-23	5.1-7.8	0
	55-63	9-20	5.6-8.4	0-20
8077A:				
Huntsville-----------	0-27	17-24	5.6-7.8	0
	27-54	11-17	5.6-7.8	0
	52-80	6-17	5.6-7.8	0-5
8239A:				
Dorchester-----------	0-6	15-20	7.4-8.4	5-30
	6-60	15-20	6.6-8.4	0-15
9017A:				
Keomah---------------	0-9	15-20	4.5-7.3	0
	9-16	15-20	4.5-7.3	0
	16-49	25-30	4.5-5.5	0
	49-80	15-20	5.1-7.3	0
9086B:				
Osco-----------------	0-14	18-25	5.1-7.3	0
	14-55	15-23	5.1-7.3	0
	55-60	12-18	5.6-7.3	0
9257A:				
Clarksdale-----------	0-10	10-22	5.1-7.3	0
	10-16	9-18	5.1-6.5	0
	16-46	21-28	5.1-7.3	0
	46-80	12-19	6.1-8.4	0-15

Table 20.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation-exchange capacity	Soil reaction	Calcium carbonate
	In	meq/100 g	pH	Pct
9279B:				
Rozetta	0-9	10-22	5.1-7.3	0
	9-66	16-22	4.5-6.0	0
	66-76	12-17	5.6-7.8	0-15
9279C2:				
Rozetta	0-7	10-22	5.1-7.3	0
	7-66	16-22	4.5-6.0	0
	66-70	12-17	5.6-7.8	0-15
9280B:				
Fayette	0-9	15-20	5.1-7.3	0
	9-39	15-20	4.5-6.5	0
	39-60	15-20	5.1-7.8	0-15
9280C2:				
Fayette	0-8	18-25	5.1-7.3	0
	8-64	15-20	4.5-6.0	0
	64-80	15-20	5.1-7.8	0-15
9675B:				
Greenbush	0-14	20-25	5.1-7.3	0
	14-60	25-30	4.5-7.3	0
	60-80	20-25	5.6-7.3	0
M-W.				
Miscellaneous water				
W.				
Water				

Table 21.--Water 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	Hydrologic group	Annual ponding: Surface water depth	Annual ponding: Duration	Annual ponding: Frequency	Annual flooding: Duration	Annual flooding: Frequency	Water table: Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
7D3:										
Atlas	D	---	---	---	---	None	Jan-May	0.5-2.0	1.2-2.5	Perched
8D2:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
8F:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
8F2:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
8G:										
Hickory	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
17A:										
Keomah	C	---	---	---	---	None	Jan-May	0.5-2.0	>6.0	Apparent
19C3:										
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
19D3:										
Sylvan	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
43A:										
Ipava	B	---	---	---	---	None	Jan-May	1.0-2.0	>6.0	Apparent
45A:										
Denny	D	0.0-1.0	Brief	Frequent	---	None	Jan-May	0.0	>6.0	Apparent
68A:										
Sable	B/D	0.0-0.5	Brief	Occasional	---	None	Jan-May	0.0-1.0	>6.0	Apparent
86B:										
Osco	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
86B2:										
Osco	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
86C:										
Osco	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
86C2:										
Osco	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
86D2:										
Osco	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
119D2:										
Elco	B	---	---	---	---	None	Feb-Apr	2.0-3.5	2.8-4.5	Perched
119E2:										
Elco	B	---	---	---	---	None	Feb-Apr	2.0-3.5	2.8-4.5	Perched

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Annual ponding: Surface water depth	Annual ponding: Duration	Annual ponding: Frequency	Annual flooding: Duration	Annual flooding: Frequency	Water table: Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
131B:										
Alvin	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
131D:										
Alvin	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
131F:										
Alvin	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
134B:										
Camden	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
134C2:										
Camden	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
134D2:										
Camden	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
249A:										
Edinburg	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
257A:										
Clarksdale	C	---	---	---	---	None	Jan-May	0.5-2.0	>6.0	Apparent
259C2:										
Assumption	B	---	---	---	---	None	Feb-Apr	2.0-3.5	2.8-4.5	Perched
259D2:										
Assumption	B	---	---	---	---	None	Feb-Apr	2.0-3.5	2.8-4.5	Perched
259D3:										
Assumption	B	---	---	---	---	None	Feb-Apr	2.0-3.5	2.8-4.5	Perched
279B:										
Rozetta	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
279C2:										
Rozetta	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
280B:										
Fayette	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
280C2:										
Fayette	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
280D2:										
Fayette	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
280F:										
Fayette	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
344B:										
Harvard	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
536.										
Dumps										
549D2:										
Marseilles	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Annual ponding: Surface water depth	Annual ponding: Duration	Annual ponding: Frequency	Annual flooding: Duration	Annual flooding: Frequency	Water table: Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
549F:										
Marseilles	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
549G:										
Marseilles	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
567B2:										
Elkhart	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
567C2:										
Elkhart	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
567D2:										
Elkhart	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
567D3:										
Elkhart	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
660C2:										
Coatsburg	D	---	---	---	---	None	Jan-May	0.0-1.0	0.5-2.5	Perched
675B:										
Greenbush	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
801B:										
Orthents	B	---	---	---	---	None	Jan-May	1.0-3.0	>6.0	Apparent
802B:										
Orthents	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
835G.										
Earthen dams										
863, 864, 865.										
Pits										
871B:										
Lenzburg	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
871D:										
Lenzburg	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
871G:										
Lenzburg	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
872B:										
Rapatee	D	---	---	---	---	None	Feb-Apr	3.5-5.0	4.5-6.0	Perched
901B:										
Ipava	B	---	---	---	---	None	Jan-May	1.0-2.0	>6.0	Apparent
Osco	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
902A:										
Ipava	B	---	---	---	---	None	Jan-May	1.0-2.0	>6.0	Apparent
Sable	B/D	0.0-0.5	Brief	Occasional	---	None	Jan-May	0.0	>6.0	Apparent
3074A:										
Radford	B	---	---	---	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent

Table 21.--Water Features--Continued

Map symbol and soil name	Hydro-logic group	Annual ponding: Surface water depth	Annual ponding: Duration	Annual ponding: Frequency	Annual flooding: Duration	Annual flooding: Frequency	Water table: Months	Water table: Upper limit	Water table: Lower limit	Water table: Kind of water table
		Ft						Ft	Ft	
3107+:										
Sawmill---------------	B/D	---	---	---	Brief	Frequent	Jan-May	0.0-2.0	>6.0	Apparent
3415A:										
Orion-----------------	C	---	---	---	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
3451A:										
Lawson----------------	B	---	---	---	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
7081B:										
Littleton-------------	B	---	---	---	Very brief	Rare	Jan-May	1.0-2.0	>6.0	Apparent
7104A:										
Virgil----------------	B	---	---	---	Very brief	Rare	Jan-May	1.0-2.0	>6.0	Apparent
8077A:										
Huntsville------------	B	---	---	---	Brief	Occasional	Feb-Apr	4.0-6.0	>6.0	Apparent
8239A:										
Dorchester------------	B	---	---	---	Brief	Occasional	Jan-Dec	>6.0	>6.0	---
9017A:										
Keomah----------------	C	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
9086B:										
Osco------------------	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
9257A:										
Clarksdale------------	C	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
9279B:										
Rozetta---------------	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
9279C2:										
Rozetta---------------	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
9280B:										
Fayette---------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
9280C2:										
Fayette---------------	B	---	---	---	---	None	Jan-Dec	>6.0	>6.0	---
9675B:										
Greenbush-------------	B	---	---	---	---	None	Feb-Apr	4.0-6.0	>6.0	Apparent
M-W.										
Miscellaneous water										
W.										
Water										

Table 22.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
7D3:					
Atlas	---	---	High	High	Moderate
8D2:					
Hickory	---	---	Moderate	Moderate	Moderate
8F:					
Hickory	---	---	Moderate	Moderate	Moderate
8F2:					
Hickory	---	---	Moderate	Moderate	Moderate
8G:					
Hickory	---	---	Moderate	Moderate	Moderate
17A:					
Keomah	---	---	High	High	Moderate
19C3:					
Sylvan	---	---	High	Moderate	Moderate
19D3:					
Sylvan	---	---	High	Moderate	Moderate
43A:					
Ipava	---	---	High	High	Moderate
45A:					
Denny	---	---	High	High	Moderate
68A:					
Sable	---	---	High	High	Low
86B:					
Osco	---	---	High	Moderate	Moderate
86B2:					
Osco	---	---	High	Moderate	Moderate
86C:					
Osco	---	---	High	Moderate	Moderate
86C2:					
Osco	---	---	High	Moderate	Moderate
86D2:					
Osco	---	---	High	Moderate	Moderate
119D2:					
Elco	---	---	High	High	Low
119E2:					
Elco	---	---	High	High	Low
131B:					
Alvin	---	---	Moderate	Low	Moderate

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
131D:					
Alvin	---	---	Moderate	Low	High
131F:					
Alvin	---	---	Moderate	Low	High
134B:					
Camden	---	---	High	Low	Moderate
134C2:					
Camden	---	---	High	Moderate	Moderate
134D2:					
Camden	---	---	High	Low	Moderate
249A:					
Edinburg	---	---	High	High	Moderate
257A:					
Clarksdale	---	---	High	High	Moderate
259C2:					
Assumption	---	---	High	High	Moderate
259D2:					
Assumption	---	---	High	High	Moderate
259D3:					
Assumption	---	---	High	High	Moderate
279B:					
Rozetta	---	---	High	Moderate	Moderate
279C2:					
Rozetta	---	---	High	Moderate	Moderate
280B:					
Fayette	---	---	High	Moderate	Moderate
280C2:					
Fayette	---	---	High	Moderate	Moderate
280D2:					
Fayette	---	---	High	Moderate	Moderate
280F:					
Fayette	---	---	High	Moderate	Moderate
344B:					
Harvard	---	---	High	Moderate	Moderate
536.					
Dumps					
549D2:					
Marseilles	Bedrock (soft)	20-40	High	High	Moderate
549F:					
Marseilles	Bedrock (soft)	20-40	High	High	Moderate

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
549G:					
Marseilles	Bedrock (soft)	20-40	High	High	Moderate
567B2:					
Elkhart	---	---	High	Moderate	Moderate
567C2:					
Elkhart	---	---	High	Moderate	Moderate
567D2:					
Elkhart	---	---	High	Moderate	Moderate
567D3:					
Elkhart	---	---	High	Moderate	Moderate
660C2:					
Coatsburg	---	---	High	High	Moderate
675B:					
Greenbush	---	---	High	Moderate	Low
801B:					
Orthents	---	---	High	High	Moderate
802B:					
Orthents	---	---	Moderate	Moderate	Moderate
835G.					
Earthen dams					
863, 864, 865.					
Pits					
871B:					
Lenzburg	---	---	Moderate	Moderate	Low
871D:					
Lenzburg	---	---	Moderate	Moderate	Low
871G:					
Lenzburg	---	---	Moderate	Moderate	Low
872B:					
Rapatee	---	---	High	Moderate	Low
901B:					
Ipava	---	---	High	High	Moderate
Osco	---	---	High	Moderate	Moderate
902A:					
Ipava	---	---	High	High	Moderate
Sable	---	---	High	High	Low
3074A:					
Radford	---	---	High	High	Moderate
3107+:					
Sawmill	---	---	High	High	Low

Table 22.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Potential for frost action	Risk of corrosion	
	Kind	Depth to top		Uncoated steel	Concrete
		In			
3415A:					
Orion------------------	---	---	High	High	Low
3451A:					
Lawson-----------------	---	---	High	High	Low
7081B:					
Littleton--------------	---	---	High	High	Low
7104A:					
Virgil-----------------	---	---	High	High	Moderate
8077A:					
Huntsville-------------	---	---	High	Low	Low
8239A:					
Dorchester-------------	---	---	High	High	Low
9017A:					
Keomah-----------------	---	---	High	High	Moderate
9086B:					
Osco-------------------	---	---	High	Moderate	Moderate
9257A:					
Clarksdale-------------	---	---	High	High	Moderate
9279B:					
Rozetta----------------	---	---	High	Moderate	Moderate
9279C2:					
Rozetta----------------	---	---	High	Moderate	Moderate
9280B:					
Fayette----------------	---	---	High	Moderate	Moderate
9280C2:					
Fayette----------------	---	---	High	Moderate	Moderate
9675B:					
Greenbush--------------	---	---	High	Moderate	Moderate
M-W.					
Miscellaneous water					
W.					
Water					