United States Department of Agriculture

Natural Resources Conservation Service

In cooperation with Ohio Department of Natural Resources, Division of Soil and Water Conservation; Ohio Agricultural Research and Development Center; Ohio State University Extension; Columbiana Soil and Water Conservation District; and the Columbiana County Commissioners

Soil Survey of Columbiana County, Ohio

Interim Report
October 2006

How to use this survey

General Soil Map

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

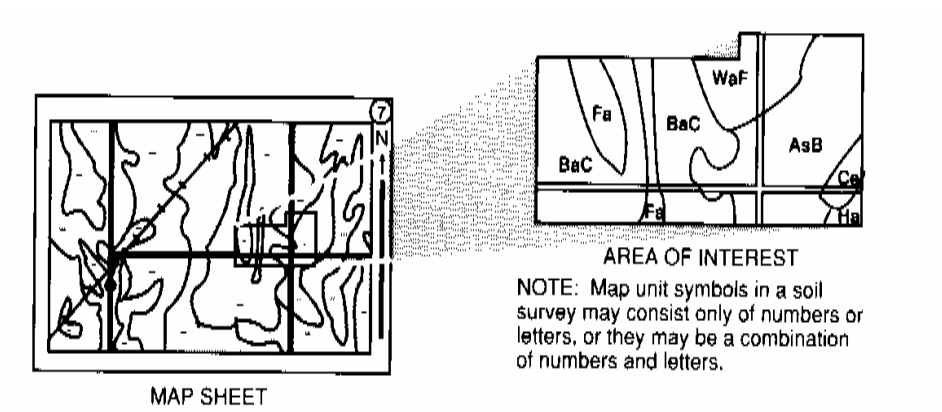
To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** of this survey for a general description of the soils in your area.

Detailed Soil Maps

Detailed soil maps can be generated with geographic information system software from the Natural Resources Conservation Service's Soil Data Mart Website (http://soildatamart.nrcs.usda.gov/Survey.aspx?State=OH). These maps are useful in planning the use and management of small areas.

To reference the soils information and area of interest locate the area using the information from the Soil Data Mart or use the Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/) . Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

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



This interim soil survey report is a publication of the National Cooperative Soil Survey. It is part of the technical assistance furnished to the Columbiana Soil and Water Conservation District. The survey was a joint effort of the United States Department of Agriculture, Natural Resources Conservation Service; Ohio Department of Natural Resources, Division of Soil and Water Conservation; Ohio Agricultural Research and Development Center; Ohio State University Extension; Columbiana County Commissioners, and the Columbiana Soil and Water Conservation District. The Natural Resources Conservation Service, USDA, has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 2003. Soil names and descriptions were approved in 2005. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2003.

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, the detail of small areas of contrasting soils that could have been shown at a larger scale is not mapped.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W. Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Cover: Typical family farmstead in Columbiana County where management is dedicated to growing crops of corn, soybeans, winter wheat, hay and pasture for livestock.

Contents

How to use this survey **2**
Contents **4**
Preface **8**
General Nature of the County 10
Climate 10
History 10
Geology, Physiography, Relief, and Drainage 11
Natural Resources 13
Agriculture 14
Soil Survey Procedures 16
General Soil Map Units **18**
1. Canfield-Ravenna Association 18
2. Rittman-Wadsworth Association 19
3. Teegarden-Kensington-Gilpin Association 19
4. Homeworth-Chili-Bogart Association 20
5. Fredericktown-Zepernick-Wick Association 20
6. Chili-Zepernick-Wick Association 21
7. Tioga-Omulga-Rainsboro Association .. 21
8. Berks-Coshocton-Gilpin Association 22
9. Fairpoint-Berks-Gilpin Association 23
10. Berks-Gilpin-Coshocton Association ... 23
11. Berks-Westmoreland-Gilpin Association 24
12. Vandergrift-Berks-Upshur Association 25
13. Westmoreland-Coshocton-Berks Association 25
14. Hazleton-Westmoreland-Berks Association 26
Detailed Soil Map Units **27**
AmF=Amanda loam, 35 to 70 percent slopes 28
BkB=Berks channery silt loam, 2 to 6 percent slopes 30
BkC=Berks channery silt loam, 6 to 15 percent slopes 31
BkD=Berks channery silt loam, 15 to 25 percent slopes 32
BkE=Berks channery silt loam, 25 to 40 percent slopes 34
BmB=Berks-Urban land complex, 2 to 6 percent slopes 35
BmC=Berks-Urban land complex, 6 to 15 percent slopes 36
BmD=Berks-Urban land complex, 15 to 25 percent slopes 37
BpF=Bethesda very channery silt loam, 25 to 70 percent slopes 38
BsC2=Bogart loam, 6 to 12 percent slopes, eroded 39
BtA=Bogart silt loam, 0 to 2 percent slopes ... 41
BtB=Bogart silt loam, 2 to 6 percent slopes ... 42
BtC=Bogart silt loam, 6 to 12 percent slopes . 43
CaA=Calcutta silt loam, 0 to 3 percent slopes 44
CcB=Canfield silt loam, 2 to 6 percent slopes 46
CcC=Canfield silt loam, 6 to 12 percent slopes 47
CcD=Canfield silt loam, 12 to 20 percent slopes 49
CcE=Canfield silt loam, 20 to 35 percent slopes 50
CeA=Carlisle muck, 0 to 1 percent slopes 52
CfD2=Chili loam, 12 to 20 percent slopes, eroded 53
ChA=Chili silt loam, 0 to 2 percent slopes 54
ChB=Chili silt loam, 2 to 6 percent slopes 55
ChC=Chili silt loam, 6 to 12 percent slopes ... 56
CmB=Conotton gravelly loam, 2 to 6 percent slopes 57
CmC=Conotton gravelly loam, 6 to 12 percent slopes 58
CoB=Coshocton silt loam, 2 to 6 percent slopes 60
CoC=Coshocton silt loam, 6 to 15 percent slopes 61
CoD=Coshocton silt loam, 15 to 25 percent slopes 63
DAM=Dam 64
DgA=Doles silt loam, 0 to 3 percent slopes ... 64
ErC=Ernest silt loam, 6 to 15 percent slopes . 66
ErD=Ernest silt loam, 15 to 25 percent slopes 67
FbB=Fairpoint very channery silt loam, 0 to 8 percent slopes 69
FbD=Fairpoint very channery silt loam, 8 to 25 percent slopes 70
FbF=Fairpoint very channery silt loam, 25 to 70 percent slopes 71
FcB=Fairpoint silty clay loam, 0 to 8 percent slopes 72
FcD=Fairpoint silty clay loam, 8 to 25 percent slopes 73
FdA=Fitchville silt loam, 0 to 2 percent slopes 75
FdB=Fitchville silt loam, 2 to 6 percent slopes 76
FeA=Fluvaquents, silty, 0 to 1 percent slopes, frequently flooded 78
FnC2=Fredericktown gravelly loam, 6 to 15 percent slopes, eroded 79
FnD2=Fredericktown gravelly loam, 15 to 25 percent slopes, eroded 80
FoB=Fredericktown silt loam, 2 to 6 percent slopes 81
FrA=Frenchtown silt loam, 0 to 2 percent slopes 82
GaB=Gavers silt loam, 2 to 6 percent slopes . 84

GeC=Germano fine sandy loam, 6 to 15 percent slopes 85
GeD=Germano fine sandy loam, 15 to 25 percent slopes 86
GnB=Gilpin silt loam, 2 to 6 percent slopes ... 88
GnC=Gilpin silt loam, 6 to 15 percent slopes . 89
GnD=Gilpin silt loam, 15 to 25 percent slopes 90
GoC=Gilpin-Coshocton silt loams, 6 to 15 percent slopes 92
GoD=Gilpin-Coshocton silt loams, 15 to 25 percent slopes 94
GpC=Gilpin-Coshocton-Urban land complex, 6 to 15 percent slopes 97
GrB=Glenford silt loam, 2 to 6 percent slopes 99
GrC=Glenford silt loam, 6 to 12 percent slopes 100
GuC=Guernsey silt loam, 6 to 15 percent slopes 102
GuC2=Guernsey silt loam, 6 to 15 percent slopes, eroded 104
GuD=Guernsey silt loam, 15 to 25 percent slopes 106
HeB=Hazleton channery loam, 2 to 6 percent slopes 107
HeC=Hazleton channery loam, 6 to 15 percent slopes 108
HeD=Hazleton channery loam, 15 to 25 percent slopes 110
HeE=Hazleton channery loam, 25 to 40 percent slopes 111
HfF=Hazleton-Rock outcrop complex, 40 to 70 percent slopes 112
HgF=Hazleton-Westmoreland channery loams, 40 to 70 percent slopes 114
HkA=Holly silt loam, 0 to 2 percent slopes, frequently flooded 116
HlB=Homewood silt loam, 2 to 6 percent slopes 118
HmA=Homeworth loam, 0 to 2 percent slopes 119
HmB=Homeworth loam, 2 to 6 percent slopes 120
HoA=Homeworth silt loam, 0 to 2 percent slopes 122
HoB=Homeworth silt loam, 2 to 6 percent slopes 123
JwA=Jimtown silt loam, 0 to 2 percent slopes 124
JwB=Jimtown silt loam, 2 to 6 percent slopes 126
KeB=Keene silt loam, 2 to 6 percent slopes 127
KnB=Kensington silt loam, 2 to 6 percent slopes 128
KnC=Kensington silt loam, 6 to 15 percent slopes 130
KnD=Kensington silt loam, 15 to 25 percent slopes 131
LbA=Lobdell silt loam, 0 to 2 percent slopes, occasionally flooded 133
LnA=Lorain silt loam, 0 to 2 percent slopes . 134
McB=Mechanicsburg silt loam, 2 to 6 percent slopes 135
McC=Mechanicsburg silt loam, 6 to 15 percent slopes 136
MnB=Morristown silty clay loam, 0 to 8 percent slopes 138
MnD=Morristown silty clay loam, 8 to 25 percent slopes 139
MoB=Morristown channery silty clay loam, 0 to 8 percent slopes 140
MoD=Morristown channery silty clay loam, 8 to 25 percent slopes 141
OdA=Olmsted and Valley soils, 0 to 2 percent slopes 143
OmB=Omulga silt loam, 2 to 6 percent slopes 145
OmC=Omulga silt loam, 6 to 12 percent slopes 147
OrA=Orrville silt loam, 0 to 2 percent slopes, occasionally flooded 148
Pg=Pits, gravel 150
RaB=Rainsboro silt loam, 2 to 6 percent slopes 150
RaC2=Rainsboro silt loam, 6 to 12 percent slopes, eroded 152
RbC=Rainsboro silt loam, 6 to 12 percent slopes, stony 153
ReA=Ravenna silt loam, 0 to 2 percent slopes 155
ReB=Ravenna silt loam, 2 to 6 percent slopes 156
RhD=Richland silt loam, 15 to 25 percent slopes, stony 158
RhE=Richland silt loam, 25 to 40 percent slopes, stony 159
RsB=Rittman silt loam, 2 to 6 percent slopes 161
RsC=Rittman silt loam, 6 to 12 percent slopes 162
RsD2=Rittman silt loam, 12 to 20 percent slopes, eroded 164
TeB=Teegarden silt loam, 2 to 6 percent slopes 165
TeC=Teegarden silt loam, 6 to 15 percent slopes 167
TeC2=Teegarden silt loam, 6 to 15 percent slopes, eroded 169
ToA=Tioga loam, 0 to 2 percent slopes, occasionally flooded 170
Ua=Udorthents, loamy, 2 to 25 percent slopes 171
Ub=Udorthents, refuse substratum, 2 to 25 percent slopes 173
Uc=Udorthents-Pits complex, 0 to 70 percent slopes 174

UkC2=Upshur-Berks complex, 6 to 15 percent slopes, eroded ... 175
UkD2=Upshur-Berks complex, 15 to 25 percent slopes, eroded ... 178
UkE2=Upshur-Berks complex, 25 to 40 percent slopes, eroded ... 181
Ur=Urban land, 0 to 15 percent slopes ... 183
UtB=Urban land-Canfield complex, 2 to 6 percent slopes ... 184
UtC=Urban land-Canfield complex, 6 to 12 percent slopes ... 185
UvB=Urban land-Chili complex, 2 to 6 percent slopes ... 186
VaA=Valley silt loam, 0 to 2 percent slopes ... 187
VbA=Valley silty clay loam, 0 to 2 percent slopes ... 188
VcA=Valley-Lorain silt loams, 0 to 2 percent slopes ... 190
VnB=Vandergrift silt loam, 2 to 6 percent slopes ... 192
VnC=Vandergrift silt loam, 6 to 15 percent slopes ... 194
W=Water ... 196
WaA=Wadsworth silt loam, 0 to 2 percent slopes ... 196
WaB=Wadsworth silt loam, 2 to 6 percent slopes ... 197
WkE=Westmoreland-Berks complex, 25 to 40 percent slopes ... 199
WkF=Westmoreland-Berks complex, 40 to 70 percent slopes ... 201
WmC=Westmoreland-Coshocton silt loams, 8 to 15 percent slopes ... 204
WmD=Westmoreland-Coshocton silt loams, 15 to 25 percent slopes ... 206
WoA=Wick silt loam, 0 to 2 percent slopes, frequently flooded ... 209
ZeA=Zepernick silt loam, 0 to 2 percent slopes, occasionally flooded ... 210
Important Farmland ... 213
Prime Farmland ... 213
Unique Farmland ... 213
Additional Farmland of Statewide Importance ... 213
Additional Farmland of Local Importance ... 214
Hydric Soils ... 215
Soil Quality ... 216
Use and Management of the Soils ... 219
Interpretive Ratings ... 219
Rating Class Terms ... 219
Numerical Ratings ... 219
Cropland Limitations and Hazards ... 219
Crops and Pasture ... 221
Managing Cropland ... 222
Managing Pasture and Hayland ... 223
Crop Yield Index ... 223
Land Capability Classification ... 224
Pasture and Hayland Suitability Groups ... 224
Interpretive Groups ... 226
Woodland Management and Productivity ... 227
Woodland Productivity ... 227
Woodland Management ... 228
Windbreaks and Environmental Plantings ... 229
Recreational Development ... 229
Wildlife Habitat ... 231
Engineering ... 233
Construction Materials ... 234
Building Site Development ... 235
Sanitary Facilities ... 236
Agricultural Waste Management ... 238
Water Management ... 240
Soil Properties ... 242
Engineering Index Properties ... 242
Physical Properties ... 243
Chemical Properties ... 244
Water Features ... 245
Soil Features ... 246
Classification of the Soils ... 248
Soil Series and Their Morphology ... 248
Amanda Series ... 248
Berks Series ... 250
Bethesda Series ... 250
Bogart Series ... 251
Calcutta Series ... 252
Canfield Series ... 254
Carlisle Series ... 256
Chili Series ... 256
Conotton Series ... 257
Coshocton Series ... 258
Doles Series ... 260
Ernest Series ... 261
Fairpoint Series ... 262
Fitchville Series ... 263
Fredericktown Series ... 265
Frenchtown Series ... 266
Gavers Series ... 268
Germano Series ... 270
Gilpin Series ... 271
Glenford Series ... 271
Guernsey Series ... 273
Hazleton Series ... 274
Holly Series ... 275
Homewood Series ... 276
Homeworth Series ... 277
Jimtown Series ... 279
Keene Series ... 280
Kensington Series ... 282
Lobdell Series ... 283
Lorain Series ... 284
Mechanicsburg Series ... 285
Morristown Series ... 286
Olmsted Series ... 287
Omulga Series ... 288
Orrville Series ... 290
Rainsboro Series ... 291

Ravenna Series **293**
Rittman Series **296**
Teegarden Series **297**
Tioga Series **299**
Upshur Series **300**
Valley Series **301**
Vandergrift Series **303**
Wadsworth Series **304**
Westmoreland Series **306**
Wick Series **307**
Zepernick Series **308**
Formation of the Soils **310**
Factors of Soil Formation 310
Parent Material 310
Climate 311
Relief 312
Time 313
Processes of Soil Formation 313
References **315**
Glossary **317**
TABLES **329**
TABLE 1.--TEMPERATURE AND PRECIPITATION 330
TABLE 2.--FREEZE DATES IN SPRING AND FALL 331
TABLE 3.--GROWING SEASON 331
TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE MAP UNITS 332
TABLE 5.--PRIME FARMLAND 334
TABLE 6.--HYDRIC SOILS LIST 335
TABLE 7.--NON-HYDRIC MAPUNITS WITH HYDRIC COMPONENTS 336
TABLE 8.--CROPLAND LIMITATIONS AND HAZARDS 338
TABLE 9.--CROP YIELD INDEX 346
TABLE 10.--ACREAGE BY CAPABILITY CLASSES AND SUBCLASSES 351
TABLE 11.--WOODLAND MANAGEMENT . 352
TABLE 12.--WOODLAND PRODUCTIVITY 362
TABLE 13.--WOODLAND HARVESTING ACTIVITIES 387
TABLE 14.--WOODLAND REGENERATION ACTIVITIES 400
TABLE 15.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS 412
TABLE 16.—RECREATION PART 1 421
TABLE 17.—RECREATION PART 2 435
TABLE 18.--WILDLIFE HABITAT 447
TABLE 19.--CONSTRUCTION MATERIALS PART 1 453
TABLE 20.--CONSTRUCTION MATERIALS PART 2 463
TABLE 21.--BUILDING SITE DEVELOPMENT PART 1 479
TABLE 22.--BUILDING SITE DEVELOPMENT PART 2 492
TABLE 23.--SANITARY FACILITIES PART 1 508
TABLE 24.--SANITARY FACILITIES PART 2 525
TABLE 25.--AGRICULTURAL WASTE MANAGEMENT 539
TABLE 26.--WATER MANAGEMENT PART 1 563
TABLE 27.--WATER MANAGEMENT PART 2 575
TABLE 28.--ENGINEERING INDEX PROPERTIES 593
TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS 622
TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS 636
TABLE 31.--WATER FEATURES 647
TABLE 32.--SOIL FEATURES 654
TABLE 33.--CLASSIFICATION OF THE SOILS 660
TABLE 34.--INTERPRETIVE GROUPS 661

Preface

This interim soil survey contains information that affects land use planning in Columbiana County. It contains predictions of soil behavior for selected land uses. The survey also highlights soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

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

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

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are shallow to bedrock. 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 interim soil survey. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Ohio State University Extension.

Soil Survey of Columbiana County, Ohio

E. Larry Milliron Natural Resources Conservation Service; Richard W. Buzard Ohio Department of Natural Resources, Division of Soil and Water Conservation.

Fieldwork by Linn E. Roth, Richard W. Buzard, Stephen T. Prebonick and James R. Svoboda Ohio Department of Natural Resources, Division of Soil and Water Conservation Service

United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Ohio Department of Natural Resources-Division of Soil and Water Conservation, Ohio Agricultural Research and Development Center, Ohio State University Extension, Columbiana County Commissioners, and the Columbiana Soil and Water Conservation District.

This soil survey is an inventory and evaluation of the soils in Columbiana County. It can be used beneficially to plan and manage land uses appropriate to the limitations and potentials of the soil resources and the environment.

This soil survey updates and supersedes the survey of Columbiana County published in 1968 (Lessig and others. 1968). It provides updated information including additional descriptive data, soil interpretations, and larger scale maps on a newer photographic background.

Knowledge and understanding of soils has increased as the soil survey has progressed in Ohio. Many new soil types have been identified and defined which were not previously recognized. Also, the modern system of soil classification has been refined to provide more accurate and additional interpretations. A careful evaluation of the 1968 Soil Survey of Columbiana County was conducted at the request of the Columbiana County Commissioners. The evaluation revealed significant need to update the soil survey and the cooperative effort was subsequently undertaken.

Columbiana County is in the eastern part of Ohio with an area of 343,027 acres, or 536 square miles, including land covered by water. (Figure 1) The population of the county was 112,075 in 2000 (Ohio Department of Development). Lisbon, the county seat, is located in the central part of the county. The largest city is East Liverpool.

Figure 1. Location of Columbiana County in Ohio

Columbiana County soils range widely in natural drainage, texture and other characteristics. Most coarse textured soils are formed from outwash deposits found on stream terraces. Finer textured soils account for the majority of county and formed in glacial till and lacustrine sediments. Topography is generally nearly level or gently sloping with the greatest relief found in areas of stream dissection, and the bluffs along the Ohio River. The major management concerns for cultivated crops are wetness and erosion.

In 1997, 980 farms were operating in the County. Most of the larger farms are in the northern part of the county. Grain and dairy farms are important agricultural industries. Nurseries, orchards, Christmas trees and other specialty crops are important enterprises located mostly in the northern part of the county (Figure 2).

Figure 2. Christmas trees are a specialty crop grown in Columbiana County. These are growing on Coshocton silt loam, 6 to 15 percent slopes.

Approximately 43 percent of the county is wooded. This includes idle and abandoned fields that are reverting to forest species. Areas that are difficult to drain are commonly left uncultivated. More productive, better drained fields are kept in crop production.

General Nature of the County

This section provides some general information about the survey area. It describes climate; history; physiography, relief, and drainage; glacial geology; bedrock geology; natural resources; transportation facilities; and recreation.

Climate

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

Climate Tables are created from the climate station MILLPORT 2 NW Ohio

Thunderstorm days, relative humidity, percent sunshine, and wind information are estimated from First Order station Cleveland, Ohio.

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

In winter, the average temperature is 28.6 degrees F and the average daily minimum temperature is 19.3 degrees. The lowest temperature on record, which occurred at MILLPORT 2 NW on January 19, 1994 is -34 degrees. In summer, the average temperature is 68.9 degrees and the average daily maximum temperature is 81.5 degrees. The highest temperature, which occurred at MILLPORT 2 NW on July 16, 1988 is 103 degrees.

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

The average annual total precipitation is about 38.46 inches. Of this, about 18.58 inches, or 48 percent, usually falls in May through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 3.71 inches at MILLPORT 2 NW on May 28, 1985. Thunderstorms occur on about 35 days each year, and most occur in June.

The average seasonal snowfall is 30.3 inches. The greatest snow depth at any one time during the period of record was 22 inches recorded on November 28, 1950. On an average, 11 days per year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was 20 inches recorded on December 2, 1974.

The average relative humidity in mid-afternoon is about 62 percent. Humidity is higher at night, and the average at dawn is about 79 percent. The sun shines 65 percent of the time in summer and 31 percent in winter. The prevailing wind is from the south southwest. Average wind speed is highest, 12.3 miles per hour, in January.

History

D. Mitch Cattrell, District Conservationist, Natural Resoruces Conservation Service, prepared this section

The Wyandots, Delaware, and Mingo Tribes of Indians camped and hunted the grounds of Columbiana County before the early European settlers. The County was formed on March 25, 1803, and is named for Christopher Columbus. It originally contained five townships, but presently there are eighteen. The first recorded permanent settlement was by John Quinn about 1792 near what is East Liverpool, on the banks of the Ohio River.

Lisbon, the second oldest town in Ohio, is the County Seat. The first court house in Lisbon was a log structure constructed for $150, the lots on which it was erected is now the site of the present court house. A stone jail was built in 1807 on Beaver Street and still stands.

No common school system existed in the County until after 1820. In 1834 the Sandy & Beaver Canal was begun. It was finished in 1846 and abandoned in 1852. The main office of this waterway was in Lisbon. The Sandy & Beaver Canal was built in the decline of canal transportation and the coming of the railroads put an end to this leisurely era. The remains of numerous locks on the canal can still be found throughout the County.

The Columbiana County Agricultural Society was founded in 1846 to promote interest in scientific farming practices, and became the sponsor of the Columbiana County Fair. The first county fair was held in 1845.

The peace and progress of the first half of the century was ended with the onset of the Civil War in 1861. Many young men from Columbiana County who were in the military never returned

from the war. The only Civil War battle fought in the County took place near West Point and resulted in the capture of General John Morgan and his Confederate troops.

After the Civil War, East Liverpool continued to expand as the "Pottery Center of the World". Salem, Leetonia, Wellsville, and Salineville also experienced industrial expansion as the mining of coal, clay and gravel in these areas were necessary materials for the coming Industrial Age.

Stagecoaches traveled over the Lisbon-East Liverpool road, and another line connected Lisbon with Wellsville. In those days, a trip from Lisbon to the south end of the County took about six hours for the sixteen mile distance. Mail and passengers were also brought to East Liverpool and Wellsville by steam boat down the Ohio River. The use of automobiles after the turn of the century was the impetus that was needed to make the people of the County provide an improved system of roads and highways.

Geology, Physiography, Relief, and Drainage

Mike Angle, geologist, Ohio Department of Natural Resources, prepared this section

The majority of Columbiana County lies within the Glaciated Allegheny Plateau Province, the southern third of the county is on the edge of the Unglaciated Allegheny Plateau Province (Thornbury, 1965). Elevation ranges from about 1,447 feet above sea level at Round Knob in Madison Township to 652 feet above sea level at the Ohio River in Yellow Creek Township. Total relief within the county is approximately 795 feet.

Northern Columbiana County is characterized by hummocky to rolling uplands associated with the numerous end moraines (White and Totten, 1985). Valleys in this area tend to be relatively broad and flat-lying. Central and southern Columbiana County is typified by much higher relief and by steep, bedrock-controlled uplands. Valleys tend to be narrower and have steep sides. The topography becomes noticeably more "rugged" and the relief much higher upon approaching the glacial boundary from the north.

All of Columbiana County eventually drains into the Ohio River watershed. The southwestern corner of the county is drained by Sandy Creek. Sandy Creek flows westward, joining the Tuscarawas River in Tuscarawas County. The northwestern corner of the county is drained by the Mahoning River. The Mahoning River flows to the northwest into Mahoning and Portage County and then turns eastward into Trumbull County. The Mahoning River continues eastward, emptying into the Little Beaver River in Pennsylvania. The extreme southern end of the county is drained by Little Yellow Creek and North Fork Yellow Creek. The majority of the county is drained by Little Beaver Creek, Middle Fork Little Beaver Creek, and North Fork Little Beaver Creek.

Major changes in drainage occurred during the periods of glaciation (Stout and Lamborn, 1924). The Negley River, a major pre-glacial river, ran from west to east draining all of Columbiana County. The Negley River emptied into the northerly-flowing precursor of the Ohio River, referred to as the Pittsburgh River. The Pittsburgh-Negley drainage system was considered as being a rough time equivalent of the Teays (Stout and others, 1943).

The advancing ice front blocked many of the pre-existing drainages, causing ponding which eventually led to new outlets being cut and the initiation of new, southerly-flowing drainage systems. In northern and central Columbiana County, many of the pre-existing valleys were filled or "buried" by thick sequences of glacial drift. South of the glacial boundary, the reversed, now southerly-flowing streams helped to create entrenched, steep-sided gorges. Minor drainage changes occurred throughout the later Illinoian and Wisconsinan ice advances.

Bedrock Geology

Columbiana County is underlain by relatively flat-lying sedimentary rocks of the Pennsylvanian System. These rocks are horizontally bedded and dip to the east and south. The uppermost portion of the Pottsville Group, the Allegheny Group, and the majority of the Conemaugh Group are represented in Columbiana County (Stout and Lamborn, 1924). Rocks of the Pottsville Group and Allegheny Group contain highly variable sequences of interbedded shales, fine-grained, dirty sandstones, thin limestones, underclays, and coals (Collins, 1979 & Larsen, 1991). The rocks of the Allegheny Group have historically had the greatest economic importance. Of particular importance are the Lower Kittaning and Upper Freeport coals. Rocks of the Conemaugh Group consist primarily of interbedded shales, fine-grained sandstones, and mudstones. The Mahoning Coal, which is near the base of the Conemaugh, is the only important coal. The upper portion of the Conemaugh is dominated by reddish mudstones. The interval near the boundary between rocks of the Allegheny Group and rocks of the Conemaugh Group roughly marks the transition from deposition in a marine,

coastal environment to a more terrestrial floodplain environment (Collins, 1979).

Glacial Geology

During the Pleistocene Epoch several episodes of ice advance occurred in northeastern Ohio. The age of glacial deposits within Columbiana County is still somewhat poorly understood. Surficial deposits throughout northern Columbiana County are associated with the Late Wisconsinan Glaciation (approximately 20,000 years ago). The thin glacial till covering the bedrock uplands in central Columbiana County marks a transition between the thick glacial drift to the north and the unglaciated area to the south. The deposits have alternatively been interpreted as being either Early Wisconsinan (approximately 40,000 to 70,000 years ago) in age (White and Totten, 1985) or Illinoian (over 120,000 years ago) in age (Volpi and Szabo, 1988). Some highly-weathered, potentially pre-Illinoian or "Kansan" deposits (over 730,000 years ago) have been reported in the Elkton area.

Potentially the oldest unconsolidated deposits in Columbiana County are some ancient lacustrine deposits referred to as the Calcutta Silts (Lessig, 1963 & Lessig, 1964). The Calcutta Silts were believed to be the result of ponding of the Pittsburgh River-Negley River system during the initial ice advance. The Calcutta Silts are comprised of two to ten feet of silts, clays, and fine sands deposited between elevations of 1080 feet above sea level and 1180 feet above sea level. These deposits are found capping terraces along West Fork Little Beaver Creek and Little Beaver Creek south of the glacial boundary. Mapping done in conjunction with this Soil Survey has suggested that the extent of the Calcutta silts may have been exaggerated. Many areas may contain extremely weathered shale or loess deposits which were mis-identified as being of lacustrine origin.

The surficial tills which compose the end moraines and ground moraine in northern Columbiana County reflect two separate ice advances during the Late Wisconsinan. Till is an unsorted, non-bedded, mixture of sand, silt, clay, and gravel deposited directly by the ice sheet. Most of the material in till is locally derived. Some of the boulders are igneous or metamorphic rocks eroded from Canada. Such boulders are referred to as erratics. The older Kent Till is sandy, stony, loose, and contains abundant lenses of sand and gravel. The younger Lavery Till lies to the north of the Kent Till and is silty to clayey, less stony, more compacted, and commonly lacks sand and gravel lenses. End moraines are ridges which mark a thicker accumulation of till. These features were classically interpreted as being areas where material piled-up as the ice sheet melted. They also may be formed by material stacking up by an over-riding, advacing ice sheet. End moraines tend to have a hummocky, rolling topography and act as local drainage divides. Ground moraines have a thinner accumulation of till which was deposited by actively moving ice. Ground moraine is typically relatively flat-lying to rolling. In the central portion of Columbiana County, the till cover is quite thin and the topography is controlled by the steep bedrock ridges. The bedrock controlled topography makes it difficult to distinguish between end moraine and ground moraine. Along some of the steeper slopes and ridges, the till may be absent, having been eroded away over time.

Outwash deposits are created by active deposition of sediments by meltwater streams leading away from the melting ice sheets. These deposits generally contain interbedded, sorted sand and gravel. The degree of bedding and sorting in part reflects the velocity of the meltwater stream and the distance from the melting ice sheet. Outwash deposits in Columbiana County are predominantly located within stream valleys. Outwash is typically deposited by braided streams. Such streams have multiple channels which migrate across the valley floor, leaving behind a complex record of deposition and erosion. Modern streams have downcut and dissected these deposits, leaving behind older, now higher elevation remnants of the valley floors referred to as terraces. The majority of the outwash terraces are reported as being Wisconsinan in age (White and Totten, 1985).

Kames and kame terraces are ice contact features. They are composed of masses of generally poorly-sorted sand and gravel along with minor till. These materials are washed into depressions, tunnels, holes, or other cavities in the ice. As the surrounding ice melts, a mound of sediment is left behind. In Columbiana County the majority of these kames are deposited along the flanks of larger stream valleys. The kames tend to merge together along the valley margins and tend to occur at common elevations. Such features are referred to as kame terraces. They represent deposition of materials between the melting ice sheet and the bedrock slope flanking the valley. A few isolated kames can be found in the upland areas of Columbiana County. The majority of the kames in the county were probably associated with the deposition of the Kent Moraine during the Late Wisconsinan.

Lacustrine deposits were created by lakes or ponds which formed by the damming of streams

by either ice sheets or deposits associated with the ice sheet. The buried valleys may contain appreciable thicknesses of lacustrine sediments at depth. Thinner "slackwater" deposits reflect ponding of tributary streams in upland areas. These deposits consist of fairly dense, uniform silt and clay with lesser amounts of fine sand. The depoits may display very fine bedding referred to as laminations.

Loess is another glacially derived deposit found in Columbiana County. Loess is the accumulation of windblown silt. Loess is derived by the wind picking up fine silt-sized particles covering the floodplains of the wide, outwash covered valley floors. Loess is commonly found capping kames or high bedrock knobs to the east (downwind) of the major river valleys. In Columbiana County loess deposits are typically less than five feet thick. Loess is important in the soil development process.

Natural Resources

The Allegheny formation is the most important division of rocks appearing at the surface for economic significance in Columbiana County.

Coal

Coal is known to have been used by the local population as early as 1840. It is still of some economic importance to the county today.

The Lower and Middle Kittaning coals were mined near Leetonia and provided the coal used in making coke. (Figure 3)

Figure 3. These Beehive coke ovens are part of a facility of 200 which makes it the largest of its kind known to exist today. This historic point of interest is in the Cherry Valley Arboretum at Leetonia. The soil map unit of this site is Ua – Udorthents, loamy, 2 to 25 percent slopes.

Sand and Gravel

The sand and gravel in Columbiana County is a very important resource for construction and industrial uses.

These resources in Columbiana County have been mainly used for building aggregate, paving materials and other uses. At first many small pits were used but now larger operations are common.

The quality of rock materials of the glacial deposits varies considerably from place to place primarily due to the origin of the rock materials. Rock strength ranges from very strong in relatively unweathered igneous materials transported into Columbiana County from Canada by the glaciers to very soft weathered shales that were ripped off the upper bedrock stratas and incorporated into till or water sorted with the igneous rock fragments as gravel outwash deposits. The range of particle or fragment size determines need for washing and screening.

Sandstone

The Lower Freeport sandstone was once economically important and quarried as large grindstones called pulpstones in Center Township. Pulpstones were used in the paper making industry.

Some sandstone was used for construction.

Shale and clay

Shale and clay have been very important raw materials for the firing of a wide variety of tile and pottery products. Sewer pipes, terra cotta, fire proofing materials, fire brick, stoneware pottery, and tile have been made from these resources.

Shale is mined for tile production in the Summitville area. (Figure 4)

Figure 4. The shale mined in this quarry is used in making tile products at the nearby Summitville factory.

Salt

Salt making began actively near Salineville about 1809.

Iron ore

Local iron ores supplied early pioneer foundries in the county.

Limestone

The limestone in the county has long been used in the making of hydraulic cements and were used in the locks and dams of the Sandy Beaver Canal that crossed the county.

Natural Gas and Oil

Oil and gas reserves are recovered from drilled wells located throughout the county

Water Resources

Mike Angle, geologist, Ohio Department of Natural Resources, prepared this section

The water resources of Columbiana County are variable. The vast majority of residents depend upon ground water for their drinking supply. Many of the communities in Columbiana County, including Lisbon, East Palestine, and Leetonia utilize well fields to supply their municipal water systems.

The availability of ground water is much better in northern Columbiana County. Wells completed in sand and gravel outwash deposits occupying buried valleys can yield upwards of 100 gallons per minute (gpm) and are capable of supporting small municipalities or light industrial needs (Crowell 1978). Valleys containing modern streams typically have higher recharge and can better provide a long term ground water supply. Test drilling may be necessary to identify the higher yielding deposits. Outside of the major buried valley systems, wells can be completed in sand and gravel lenses interbedded in the glacial till where there is sufficient drift available. These wells typically yield 10 to 25 gpm (Crowell 1978) and are adequate for domestic or farm use. The majority of domestic wells in northern Columbiana County are completed in the interbedded snadstones, shales, limestones, and coal of the upper Pottsville and lower Allegheny Group. These wells yield 10 to 25 gpm on average (Crowell 1978). Yields are dependent upon the number of fractures and bedding planes encountered by the well. Yields tend to be higher in stream valleys due primarily to the increased fracturing.

In central Columbiana County, the glacial drift is too thin to serve as an aquifer. The thin outwash and alluvial deposits in the stream valleys allow for more rapid recharge to the under-lying bedrock aquifers. Wells completed in the interbedded sandstones, shales, limestones, and coal of the upper Allegheny Group typically yield from 3 to 10 gpm and are adequate for most domestic uses. (Crowell 1978)

The rocks of the Conemaugh Group in southern Columbiana County constitute a poor aquifer. The sequence is composed of fine-grained, dirty sandstones, shales, and mudstones. Yields under 3 gpm are commonly reported and supplies are meager for even domestic use (Crowell 1978). Additional well or holding tank storage is recommended and cisterns may be necessary on some of the higher ridgetops.

The alluvial and outwash deposits flanking the Ohio River are an excellent source of ground water and yields over 500 gpm are available from properly constructed, large diameter wells. The Ohio River itself is a major supplier of water to both industry and to the City of East Liverpool.

Agriculture

D. Mitch Cattrell, District Conservationist, Natural Resources Conservation Service, prepared this section

In 1985, 157,600 acres were in agricultural production, according to the Columbiana Soil and Water Conservation Distict Resources Inventory (USDA-SCS. 1985). Pasturelands accounted for 58,400 acres of this total with 99,200 acres in crop production, primarily for grains and forage. The most common grain crops grown in the county are corn, soybeans, oats, and wheat. Forage crops are dominated by alfalfa hay and mixed grasses hay.

Specialty crops grown in the county include vegetables, strawberries, raspberries, blueberries, potatoes, and sweet corn. Apples and peaches are the most common tree fruits. Other crops grown in smaller acreages are sunflowers, nursery plants and Christmas trees.

The soils in the survey area generally are well suited to row crop production. Most crop production occurs on uplands because the acreage of floodplains is limited. The northern glaciated part of the county is dominated by moderately well drained Canfield and Rittman and somewhat poorly drained Ravenna and

Wadsworth soils. The main farming enterprises are dairying and row crop production. If the major soils are intensively managed, they are more productive than most other upland soils in Columbiana County.

The central part of the county is characterized by moderately well drained soils and well drained soils that are moderately deep to very deep over bedrock, such as Kensington, Mechanicsburg, and Gilpin.

Southern Columbiana County consists of steeper upland soils developed in residuum from bedrock that are moderately deep, well drained, and tend to be more droughty. Soils such as Berks and Gilpin-Coshocton and Westmoreland-Coshocton complexes on moderate slopes are cropped in rotation with hay production. More intensive crop production occurs on foot slopes and benches which include Coshocton and Keene soils.

Normal agronomic crops such as corn, soybeans, and small grains and hay crops are generally successfully grown throughout the county. Specialty crops and orchards tend to be concentrated in the central to northeastern part of the survey area. Soils that tend to be droughty and have low available moisture holding capacity in southern areas are generally unsuited to the requirements of vegetables, fruit, and berry production. In addition to the land currently being cropped, some land that is not currently tilled and is reverting to Woodland, pasture or Woodland has good potential for use as cropland. Crop production could be increased by applying the latest technology to all the cropland in this soil survey area. The information in this survey can facilitate the application of such technology.

How This Survey Was Made

This survey was made to provide updated and more complete information about the soils and miscellaneous areas in Columbiana County than was reported in the original 1968 soil survey. The information includes descriptions of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses.

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

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

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

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted color, texture, size, and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field observed characteristics and the soil properties to determine the expected behavior of the soils

under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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

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

Soils are rated in their natural state. No unusual modification of the soil site or material is made other than that which is considered normal practice for the rated use. Even though soils may have limitations, it is important to remember that engineers and others can modify soil features or can design or adjust the plans for a structure to compensate for some of the limitations. Most of these practices, however, are costly. The final decision in selecting a site for a particular use generally involves weighing the costs of site preparation and maintenance.

Soil Survey Procedures

The general policies, standards and procedures followed in making the survey are described in the 'National Soil Survey Handbook', Natural Resource Conservation Service, USDA, and the 'Soil Survey Manual', U.S. Department of Agriculture Handbook No. 18, and 'Soil Taxonomy', U.S. Department of Agriculture Handbook No. 436. Other reference materials include the Soil Survey of Columbiana County, Ohio issued 1968 (Lessig, et al, 1968), archived documentary records, aerial photographs, both black and white and color infrared coverages, and relevant scientific and research reports in agronomy, engineering, geology, and soils.

Columbiana County is one of the first counties in Ohio to have the original soil survey updated in this fashion. In the modernization work, some problems were more obvious than others. Some soils clearly required more field work than others to standardize the database to current criteria. For example, some updates in Soil Taxonomy influenced some previous soil correlations more than others or updates in the National Soil Survey Handbook impacted some map units more than others of the 1968 survey. Field work involved activities to evaluate prior correlations and gathering documentation for a modern correlation. Patterns within the soil landscape are often complex. To provide more accurate soil maps, some areas were remapped to delineate soil types that were not recognized in the 1968 report.

Documentation for the soil database includes: (1) transects to record soil profile features within soil map units; (2) detailed soil pedon descriptions for representative references and correlation; (3) soil sampling for laboratory analysis and evaluation of those analyses; and (4) redrafting soil maps to reflect new information and improve accuracy or usefulness.

Soil scientists evaluated map unit designs and the soil types mapped in those units to determine if significant taxonomic or interpretative differences existed. Soils occur in an orderly pattern on the landscape that is related to geology, landforms, relief, climate, and the natural vegetation of the area. By observing the soils in the survey area and relating their attributes to specific positions or segments of the landscape, a concept or model of how the individual soils were formed is developed. This model enables the soil scientists to predict with a considerable degree of accuracy the kind of soil at any specific location on the landscape.

Soils transition in their various features across the landscape. Some transitions are gradual and subtle and the corresponding map unit is more difficult to recognize. Others are more contrasting and abrupt and the corresponding map unit is easily associated. Consistent professional judgment is required to determine and accurately place the boundary between the critical soil conditions of the landscape. Patterns of ecological relationships associated with specific soil conditions are also helpful and used by soil scientists in identifying soil map delineations.

Soil profiles are scrutinized carefully for better understanding of the soil formation processes and for proper classification. Attributes such as layer distinction, color, texture, size and shape of soil aggregates, kind and amount of rock fragments,

distribution of plant roots, reaction, and other features enables soil scientists to identify soils. Soil profiles are then classified by the conventions of Soil Taxonomy. 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. During field work, the soils were examined using hand augers and soil tubes as the soil scientists made walking transects across the land. Soils were examined to deeper depth from dug pits and samples extracted by truck mounted hydraulic probes. Opportunities to observe soils at road cuts, construction sites and back hoe pits dug for site-specific evaluations were maximized.

Soil Survey Findings

The summary of the findings of the soil survey is this updated survey report. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specific uses. The soil database and the revised soil maps are digitized for greater access and application. The spatial database for the soil maps is orthophotography at 1:12000 scale. The soil attribute database is used to generate standardized interpretation tables. The text includes descriptive and management information for the soil series and map units as well as other important information.

General Soil Map Units

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

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

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

Some soil boundaries and soil names in this survey area do not fully match those in adjacent survey areas that were published at an earlier date. Differences are the result of changes and refinements in soil series concepts, updated soil taxonomy, slightly different map unit composition in survey areas, and the use of the State Soil Geographic data (STATSGO) map as the base for the general soil map in this publication.

1. Canfield-Ravenna Association

Very deep, level to steep, somewhat poorly drained and moderately well drained soils that formed in till on till plains

Setting

Landform: Till plain (Figure 5)
Slope range: 0 to 70 percent; about 8% of the area is 0 to 2 percent slope, 41% is 2 to 6 percent slope, 38% is 6 to 12 percent slope, 7% is 12 to 20 percent slope, 3% is 20 to 40 percent slope and 3% is 40 to 70 percent slope

Composition

Extent of the association: 30 percent of the county
Extent of the soils in the association:
Canfield soils: 70 percent
Ravenna soils: 8 percent
Minor soils: 22 percent

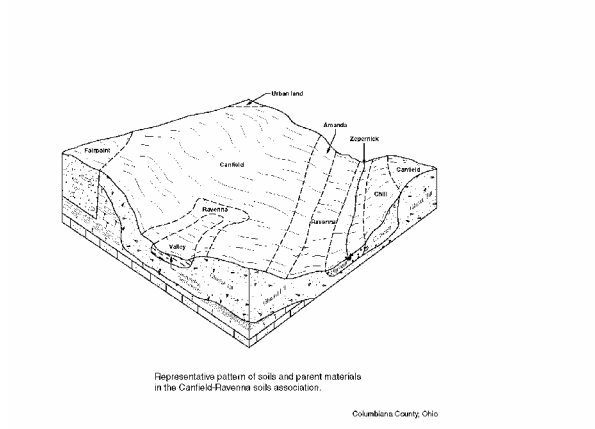


Figure 5. Representative pattern of soils and parent materials in the Canfield-Ravenna soils association.

Soil Properties and Qualities

Canfield

Depth class: Very deep
Drainage class: Moderately well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Till
Surface textural class: Silt loam
Slope: Gently sloping to steep

Ravenna

Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on *Landform:* Summit, backslope, footslope, toeslope
Parent material: Till
Surface textural class: Silt loam
Slope: Level to gently sloping

Minor Soils

Fairpoint on summits, shoulders, backslopes
Zepernick on floodplain steps
Valley on toeslopes
Urban land on summits, shoulders, backslopes
Chili on treads and risers of terraces; summits, shoulders, backslopes of kames
Amanda on shoulders, backslopes

Use and Management

Major uses: Cropland, Woodland, urban land
Management concerns: Detrimental effects of seasonal wetness, compaction, and slope

2. Rittman-Wadsworth Association

Very deep, level to steep, moderately well drained and somewhat poorly drained soils that formed in till on till plains

Setting

Landform: Till plain
Slope range: 0 to 70 percent; about 12% of the area is 0 to 2 percent slope, 50% is 2 to 6 percent slope, 27% is 6 to 12 percent slope, 8% is 12 to 20 percent slope, 2% is 20 to 40 percent slope and <1% is 40 to 70 percent slope

Composition

Extent of the association: 3 percent of the county
Extent of the soils in the association:
Rittman soils: 71 percent
Wadsworth soils: 13 percent
Minor soils: 16 percent

Soil Properties and Qualities

Rittman

Depth class: Very deep
Drainage class: Moderately well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Till
Surface textural class: Silt loam
Slope: Gently sloping to steep

Wadsworth

Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on *Landform:* Summit, backslope, footslope, toeslope
Parent material: Till
Surface textural class: Silt loam
Slope: Level to gently sloping

Minor Soils

Valley on toeslopes
Canfield on summits, shoulders, backslopes
Fitchville on terrace treads
Orrville on floodplain steps

Use and Management

Major uses: Cropland, pasture, Woodland
Management concerns: Detrimental effects of seasonal wetness, compaction, and slope

3. Teegarden-Kensington-Gilpin Association (Figure 6)

Moderately deep to very deep, gently sloping to steep, well drained and moderately well drained soils that formed in loess, till, and/or residuum weathered from interbedded sedimentary rock on till plains and unglaciated hills

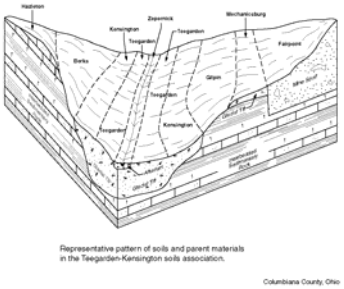


Figure 6. Representative pattern of soils and parent materials in the Teegarden-Kensington-Gilpin soils association.

Setting

Landform: Till plain and hill
Slope range: 0 to 70 percent; about 3% of the area is 0 to 2 percent slope, 9% is 2 to 6 percent slope, 41% is 6 to 15 percent slope, 25% is 15 to 25 percent slope, 11% is 25 to 40 percent slope and 11% is 40 to 70 percent slope

Composition

Extent of the association: 11 percent of the county
Extent of the soils in the association:
Teegarden soils: 22 percent
Kensington soils: 17 percent
Gilpin and similar soils: 29 percent
Minor soils: 34 percent

Soil Properties and Qualities

Teegarden

Depth class: Very deep
Drainage class: Moderately well drained
Position on *Landform:* Summit, shoulder, backslope, footslope
Parent material: Loess, till, and underlying residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping and moderately steep

Kensington

Depth class: Deep
Drainage class: Moderately well drained

Position on *Landform:* Summit, backslope, shoulder
Parent material: Loess, till, and underlying residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Gilpin
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, backslope, shoulder
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Minor Soils
Berks on summits, shoulders, backslopes
Fairpoint on summits, shoulders, backslopes
Mechanicsburg on summits, shoulders
Hazleton on summits, shoulders, backslopes
Zepernick on floodplain steps

Use and Management
Major uses: Woodland, pasture, cropland
Management concerns: Detrimental effects of seasonal wetness, compaction, slope, and shallow/hard bedrock

4. Homeworth-Chili-Bogart Association

Very deep, level to steep, somewhat poorly drained to well drained soils that formed in loamy glaciofluvial deposits over silty and clayey glaciolacustrine deposits, and stratified loamy outwash on outwash plains, outwash terraces, stream terraces and kames

Setting
Landform: Outwash plains, outwash terraces, stream terraces and kames
Slope range: 0 to 70 percent; about 58% of the area is 0 to 2 percent slope, 27% is 2 to 6 percent slope, 10% is 6 to 12 percent slope, 2% is 12 to 20 percent slope, 1% is 20 to 40 percent slope and 2% is 40 to 70 percent slope

Composition
Extent of the association: 1 percent of the county
Extent of the soils in the association:
Homeworth and similar soils: 43 percent
Chili soils: 14 percent
Bogart soils: 10 percent
Minor soils: 33 percent

Soil Properties and Qualities
Homeworth
Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on *Landform:* Tread
Parent material: Loamy glaciofluvial deposits over silty and clayey glaciolacustrine deposits
Surface textural class: Silt loam and loam
Slope: Level to gently sloping

Chili
Depth class: Very deep
Drainage class: Well drained
Position on *Landform:* Tread and riser on terrace; summit, shoulder and backslope on kames
Parent material: stratified loamy outwash
Surface textural class: Silt loam and loam
Slope: Level to steep

Bogart
Depth class: Very deep
Drainage class: Moderately well drained
Position on *Landform:* Tread and riser
Parent material: Stratified loamy outwash
Surface textural class: Silt loam and loam
Slope: Level to strongly sloping

Minor Soils
Lobdell on flood plain steps
Zepernick on flood plain steps
Orrville on flood plain steps

Use and Management
Major uses: Cropland, pasture, Woodland
Management concerns: Detrimental effects of seasonal wetness, low strength, and slope

5. Fredericktown-Zepernick-Wick Association

Very deep, level to steep, well drained to very poorly drained soils that formed in stratified loamy outwash on kame terraces, stream terraces, and silty alluvium on flood plains

Setting
Landform: Kame terraces, stream terraces and flood plains
Slope range: 0 to 70 percent; about 59% of the area is 0 to 2 percent slope, 33% is 2 to 6 percent slope, 20% is 6 to 15 percent slope, 2% is 15 to 25 percent slope, <1% is 25 to 40 percent slope and <1% is 40 to 70 percent slope

Composition

Extent of the association: 2 percent of the county
Extent of the soils in the association:
Fredericktown soils: 26 percent
Zepernick and similar soils: 33 percent
Wick soils: 12 percent
Minor soils: 29 percent

Soil Properties and Qualities

Fredericktown

Depth class: Very deep
Drainage class: Well drained
Position on *Landform:* Tread and riser
Parent material: Stratified loamy outwash
Surface textural class: Silt loam and gravelly loam
Slope: Gently sloping to steep

Zepernick

Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on *Landform:* Flood plain steps
Parent material: Silty alluvium
Surface textural class: Silt loam
Slope: Level and nearly level

Wick

Depth class: Very deep
Drainage class: Very poorly drained
Position on *Landform:* Flood plain steps
Parent material: Silty alluvium
Surface textural class: Silt loam
Slope: Level and nearly level

Minor Soils

Fitchville on terrace treads
Chili on treads and risers of terraces; summits, shoulders, backslopes of kames
Glenford on terrace treads, risers

Use and Management

Major uses: Woodland, cropland, pasture
Management concerns: Detrimental effects of wetness, low strength, flooding, and steeper slopes

6. Chili-Zepernick-Wick Association

Very deep, level to steep, well drained to very poorly drained soils that formed in stratified loamy outwash on outwash terraces, stream terraces and kames, and silty alluvium on flood plains

Setting

Landform: Outwash terrace, stream terrace, kames and flood plain
Slope range: 0 to 70 percent; about 42% of the area is 0 to 2 percent slope, 30% is 2 to 6 percent slope, 22% is 6 to 15 percent slope, 2% is 15 to 25 percent slope, 1% is 25 to 40 percent slope and 3% is 40 to 70 percent slope

Composition

Extent of the association: 3 percent of the county
Extent of the soils in the association:
Chili soils: 23 percent
Zepernick and similar soils: 27 percent
Wick soils: 12 percent
Minor soils: 38 percent

Soil Properties and Qualities

Chili

Depth class: Very deep
Drainage class: Well drained
Position on *Landform:* Tread and riser on terrace, summit, shoulder and backslope on kames
Parent material: Stratified loamy outwash
Surface textural class: Silt loam and loam
Slope: Level to steep

Zepernick

Depth class: Very deep
Drainage class: Somewhat poorly drained
Position on *Landform:* Flood plain steps
Parent material: Silty alluvium
Surface textural class: Silt loam
Slope: Level and nearly level

Wick

Depth class: Very deep
Drainage class: Very poorly drained
Position on *Landform:* Flood plain steps
Parent material: Silty alluvium
Surface textural class: Silt loam
Slope: Level and nearly level

Minor Soils

Jimtown on terrace treads
Fitchville on terrace treads
Orrville on flood plain steps
Bogart on terrace treads, risers

Use and Management

Major uses:Woodland, cropland, pasture
Management concerns: Detrimental effects of wetness, low strength, flooding and slope

7. Tioga-Omulga-Rainsboro Association

Very deep, level to strongly sloping, well and

moderately well drained soils that formed in alluvium on flood plains, loess over old alluvium or colluvium and loess over outwash on stream terraces

Setting

Landform: Flood plain, stream terrace
Slope range: 0 to 70 percent; about 47% of the area is 0 to 3 percent slope, 28% is 3 to 8 percent slope, 16% is 8 to 15 percent slope, <1% is 15 to 25 percent slope, <1% is 25 to 40 percent slope and 8% is 40 to 70 percent slope

Composition

Extent of the association: 2 percent of the county
Extent of the soils in the association:
Tioga and similar soils: 48 percent
Omulga soils: 10 percent
Rainsboro soils: 9 percent
Minor soils: 33 percent

Soil Properties and Qualities

Tioga

Depth class: Very deep
Drainage class: Well drained
Position on *Landform:* Toeslope
Parent material: Alluvium
Surface textural class: Loam
Slope: Level and nearly level

Omulga

Depth class: Very deep
Drainage class: Moderately well drained
Position on *Landform:* Tread
Parent material: Loess over old alluvium or colluvium
Surface textural class: Silt loam
Slope: Gently and strongly sloping

Rainsboro

Depth class: Very deep
Drainage class: Moderately well drained
Position on *Landform:* Tread and riser
Parent material: Loess over outwash
Surface textural class: Silt loam
Slope: Gently and strongly sloping

Minor Soils

Conotton on terrace treads, risers
Fredericktown on terrace treads, risers
Hazleton on summits, shoulders, backslopes
Chili on treads and risers of terraces; summits, shoulders, backslopes of kames
Zepernick on floodplain steps

Use and Management

Major uses: Woodland, cropland, and pasture
Management concerns: Detrimental effects of seasonal wetness, low strength, flooding, and slope

8. Berks-Coshocton-Gilpin Association

Moderately deep to very deep, gently sloping to steep, well and moderately well drained soils that formed in loamy colluvium and residuum weathered from interbedded sedimentary rock on unglaciated hills

Setting

Landform: Hill
Slope range: 0 to 70 percent; about 4% of the area is 0 to 3 percent slope, 13% is 3 to 8 percent slope, 44% is 8 to 15 percent slope, 19% is 15 to 25 percent slope, 17% is 25 to 40 percent slope and 3% is 40 to 70 percent slope

Composition

Extent of the association: 25 percent of the county
Extent of the soils in the association:
Berks soils: 49 percent
Coshocton soils: 16 percent
Gilpin soils: 10 percent
Minor soils: 25 percent

Soil Properties and Qualities

Berks

Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Channery silt loam
Slope: Gently sloping to steep

Coshocton

Depth class: Deep and very deep
Drainage class: Moderately well drained
Position on *Landform:* Summit, backslope, footslope
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Gilpin

Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope

Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Minor Soils
Fairpoint on summits, shoulders, backslopes
Orrville on flood plain steps
Keene on summits, shoulders, footslopes
Gavers on footslopes
Hazleton on summits, shoulders, backslopes

Use and Management
Major uses: Woodland, pasture and cropland
Management concerns: Detrimental effects of seasonal wetness, low strength, shallow/hard bedrock, and slope

9. Fairpoint-Berks-Gilpin Association

Moderately deep to very deep, gently sloping to very steep, well drained soils that formed in a mix of partly weathered fine earth and rock fragments from mine spoil or earthy fill of surface mines, and residuum weathered from interbedded sedimentary rock on unglaciated hills

Setting
Landform: Surface mine and hill
Slope range: 0 to 70 percent; about 3% of the area is 0 to 3 percent slope, 14% is 3 to 8 percent slope, 23% is 8 to 15 percent slope, 22% is 15 to 25 percent slope, 9% is 25 to 40 percent slope and 29% is 40 to 70 percent slope

Composition
Extent of the association: 7 percent of the county
Extent of the soils in the association:
Fairpoint soils: 35 percent
Berks soils: 24 percent
Gilpin soils: 7 percent
Minor soils: 34 percent

Soil Properties and Qualities
Fairpoint
Depth class: Very deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope, footslope
Parent material: Mix of partly weathered fine earth and rock fragments from mine spoil or earthy fill
Surface textural class: Very channery silt loam and silty clay loam
Slope: Gently sloping to very steep

Berks
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Channery silt loam
Slope: Gently sloping to steep

Gilpin
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Minor Soils
Coshocton on summits, shoulders, backslopes, footslopes
Morristown on summits, shoulders, backslopes, footslopes
Keene on summits, shoulders, footslopes
Orrville on flood plain steps
Hazleton on summits, shoulders, backslopes

Use and Management
Major uses: Woodland, pasture, and cropland
Management concerns: Detrimental effects of low strength, shallow/hard bedrock, slope and shrink-swell in fine textured mine spoil

10. Berks-Gilpin-Coshocton Association

Moderately deep to very deep, gently sloping to steep, well and moderately well drained soils that formed in loamy colluvium and residuum weathered from interbedded sedimentary rock on unglaciated hills

Setting
Landform: Hill
Slope range: 0 to 70 percent; about 1% of the area is 0 to 2 percent slope, 9% is 2 to 8 percent slope, 56% is 8 to 15 percent slope, 16% is 15 to 25 percent slope, 13% is 25 to 40 percent slope and 5% is 40 to 70 percent slope

Composition
Extent of the association: 4 percent of the

county
Extent of the soils in the association:
Berks soils: 41 percent
Gilpin soils: 22 percent
Coshocton soils: 12 percent
Minor soils: 25 percent

Soil Properties and Qualities
Berks
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Channery silt loam
Slope: Gently sloping to steep

Gilpin
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Coshocton
Depth class: Deep or very deep
Drainage class: Moderately well drained
Position on *Landform:* Summit, backslope, footslope
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Minor Soils
Fairpoint on summits, shoulders, backslopes
Orrville on flood plain steps
Keene summits, shoulders, footslopes
Gavers on footslopes
Hazleton on summits, shoulders, backslopes

Use and Management
Major uses: Woodland, pasture, and cropland
Management concerns: Detrimental effects of seasonal wetness, low strength, shallow/hard bedrock, and slope

11. Berks-Westmoreland-Gilpin Association

Moderately deep to very deep, gently sloping to very steep, well drained soils that formed in residuum weathered from interbedded sedimentary rock and loamy colluvium and residuum weathered from interbedded sedimentary rock on unglaciated hills

Setting
Landform: Hill
Slope range: 0 to 70 percent; about 4% of the area is 0 to 3 percent slope, 7% is 3 to 8 percent slope, 12% is 8 to 15 percent slope, 8% is 15 to 25 percent slope, 24% is 25 to 40 percent slope and 45% is 40 to 70 percent slope

Composition
Extent of the association: 6 percent of the county
Extent of the soils in the association:
Berks soils: 34 percent
Westmoreland soils: 24 percent
Gilpin soils: 5 percent
Minor soils: 37 percent

Soil Properties and Qualities
Berks
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Channery silt loam
Slope: Gently sloping to steep

Westmoreland
Depth class: Deep and very deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Strongly sloping to very steep

Gilpin
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Minor Soils
Coshocton on summits, shoulders,

backslopes, footslopes
Hazleton on summits, shoulders, backslopes
Tioga on flood plain steps
Orrville on flood plain steps
Fairpoint on summits, shoulders, backslopes

Use and Management
Major uses: Woodland, pasture, and cropland
Management concerns: Detrimental effects of low strength, shallow/hard bedrock, and slope

12. Vandergrift-Berks-Upshur Association

Moderately deep to very deep, gently sloping to steep, moderately well and well drained soils that formed in residuum weathered from clayey shale and siltstone, and residuum weathered from interbedded sedimentary rock on unglaciated hills

Setting
Landform: Hill
Slope range: 2 to 70 percent; about 12% of the area is 2 to 8 percent slope, 36% is 8 to 15 percent slope, 16% is 15 to 25 percent slope, 34% is 25 to 40 percent slope and 2% is 40 to 70 percent slope

Composition
Extent of the association: 1 percent of the county
Extent of the soils in the association:
Vandergrift soils: 40 percent
Berks soils: 28 percent
Upshur soils: 21 percent
Minor soils: 11 percent

Soil Properties and Qualities
Vandergrift
Depth class: Deep and very deep
Drainage class: Moderately well drained
Position on *Landform:* Summit, backslope, footslope
Parent material: Residuum weathered from calcareous and noncalcareous interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently and strongly sloping

Berks
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Channery silt loam
Slope: Gently sloping to steep

Upshur
Depth class: Deep and very deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from clayey shale
Surface textural class: Silty clay loam
Slope: Strongly sloping to steep

Minor Soils
Hazleton on summits, shoulders, backslopes
Fairpoint on summits, shoulders, backslopes
Westmoreland on shoulders, backslopes
Gilpin on summits, shoulders, backslopes

Use and Management
Major uses: Woodland, pasture, and cropland
Management concerns: Detrimental effects of seasonal wetness, low strength, shallow/hard bedrock, slope, and slippage/shrink-swell in fine textured horizons

13. Westmoreland-Coshocton-Berks Association

Moderately deep to very deep, gently sloping to steep, well and moderately well drained soils that formed in loamy colluvium and residuum weathered from interbedded sedimentary rock on unglaciated hills

Setting
Landform: Hill
Slope range: 0 to 70 percent; about 3% of the area is 0 to 2 percent slope, 5% is 2 to 8 percent slope, 83% is 8 to 15 percent slope, 9% is 15 to 25 percent slope, <1% is 25 to 40 percent slope and <1% is 40 to 70 percent slope

Composition
Extent of the association: 1 percent of the county
Extent of the soils in the association:
Westmoreland soils: 35 percent
Coshocton soils: 22 percent
Berks soils: 16 percent
Minor soils: 27 percent

Soil Properties and Qualities
Westmoreland
Depth class: Deep and very deep

Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Strongly sloping to steep

Coshocton
Depth class: Deep or very deep
Drainage class: Moderately well drained
Position on *Landform:* Summit, backslope, footslope
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Gently sloping to steep

Berks
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Channery silt loam
Slope: Gently sloping to steep

Minor Soils
Gilpin on summits, shoulders, backslopes
Orrville on flood plain steps
Keene on summits, shoulders, footslopes
Gavers on footslopes

Use and Management
Major uses: Woodland, pasture, and cropland
Management concerns: Detrimental effects of seasonal wetness, low strength, shallow/hard bedrock, and slope

14. Hazleton-Westmoreland-Berks Association

Moderately deep to very deep, gently sloping to very steep, well drained soils that formed in loamy colluvium and residuum weathered from sandstone and interbedded sedimentary rock on unglaciated hills

Setting
Landform: Hill
Slope range: 0 to 70 percent; about 2% of the area is 0 to 3 percent slope, 8% is 3 to 8 percent slope, 18% is 8 to 15 percent slope, 9% is 15 to 25 percent slope, 7% is 25 to 40 percent slope and 56% is 40 to 70 percent slope

Composition
Extent of the association: 4 percent of the county
Extent of the soils in the association:
Hazleton and similar soils: 37 percent
Westmoreland and similar soils: 18 percent
Berks soils: 12 percent
Minor soils: 33 percent

Soil Properties and Qualities
Hazleton
Depth class: Deep and very deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from sandstone
Surface textural class: Channery loam
Slope: Gently sloping to steep

Westmoreland
Depth class: Deep and very deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Surface textural class: Silt loam
Slope: Strongly sloping to very steep

Berks
Depth class: Moderately deep
Drainage class: Well drained
Position on *Landform:* Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded sedimentary rock
Surface textural class: Channery silt loam
Slope: Gently sloping to steep

Minor Soils
Gilpin on summits, shoulders, backslopes
Bethesda on summits, shoulders, backslopes, footslopes
Fairpoint on summits, shoulders, backslopes
Tioga on flood plain steps
Coshocton on summits, shoulders, backslopes, footslopes

Use and Management
Major uses: Woodland, pasture, and cropland
Management concerns: Detrimental effects of low strength, shallow/hard bedrock, and slope

Detailed Soil Map Units

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

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for important 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 adversely 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. (Figure 7) Some small areas of strongly contrasting soils or miscellaneous areas are identified by special symbols on the maps. The most common 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.

Figure 7. Oftentimes depressions such as this are minor components of upland soil map units. The depression commonly ponds water and usually is more restrictive to use and manage than the named soil map unit.

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 more precisely.

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 the differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, degree of erosion, 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 as map units 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, Homeworth silt loam, 0 to 2 percent slopes is a phase of the Homeworth series.

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

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Gilpin-Coshocton-Urban land complex, 6 to 15 percent slopes is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Olmsted and Valley soils, 0 to 2 percent slopes is an undifferentiated group in this survey of Columbiana County.

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

The detailed map unit descriptions list management statements for most major uses of the soils: cropland, pastureland, woodland, building Sites, septic tank absorption fields. and local roads and streets. The management statements listed for a particular map unit address the most limiting features of that soil for a certain use. Some management statements suggest specific measures that may help alleviate the effects of these limiting soil features. The mention of such management measures is not a recommendation, especially where current laws or programs may prohibit an activity, such as installation of drainage. Even the best management practices cannot overcome some limitations of the soil.

Land management units such as farms and smaller management units such as fields often are comprised of more than one soil map unit. Figure 8 shows a management unit of hayland that has three soil map units within it.

Figure 8. This field of grass and legumes being cut for hay is underlain by three soils; Fitchville silt loam, 2 to 6 Kensington silt loam, 6 to 15 percent slopes; and Berks channery silt loam, 15 to 25 percent slopes.

Figure 9 shows the relationship between slope positions and slope terminology in Columbiana County. (Wysoki and others, 2000.) These terms are applied only where slopes are more than 2 percent. More detailed definitions of these landform components are in the Glossary.

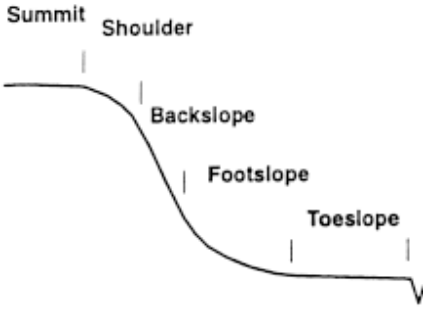


Figure 9. Diagram showing the relationship between slope position and slope terminology. (Adapted from Wysocki and others. 2000.)

AmF=Amanda loam, 35 to 70 percent slopes

Setting

Landform: Till plain
Position on the Landform: Shoulder
Backslope
Size of areas About 1.5 to 138 acres

Map Unit Composition

Amanda and similar components: 95 percent

Contrasting Components:

Zepernick soils: 5 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

AMANDA

Available water capacity: About 10.4 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 20 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 5.0 to 6.7 feet
Water table kind: Apparent
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate or moderately rapid
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Burning may destroy organic matter and increase sedimentation.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. Special design of structures is needed to prevent damage caused by wetness.

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

AMANDA
Pasture and hayland suitability group: H-1
Hydric soil: No

BkB=Berks channery silt loam, 2 to 6 percent slopes

Setting
Landform: Hill
Position on the Landform: Summit
Size of areas: About 1.0 to 118 acres

Map Unit Composition
Berks and similar components: 85 percent
Contrasting Components:
Gilpin soils: 10 percent
Coshocton soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

BERKS
Available water capacity: About 2.8 inches to a depth of 36 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 3.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery

Use and Management Considerations

Cropland

The rooting depth of crops is restricted by bedrock.

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: F-1
Hydric soil: No

BkC=Berks channery silt loam, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Shoulder
Backslope
Summit
Size of areas: About 1.0 to 383 acres

Map Unit Composition
Berks and similar components: 85 percent

Contrasting Components:
Gilpin soils: 10 percent
Guernsey soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

BERKS
Available water capacity: About 1.8 inches to a depth of 23 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.9 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery layers

Use and Management Considerations

Cropland

The rooting depth of crops is restricted by bedrock.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: F-1
Hydric soil: No

BkD=Berks channery silt loam, 15 to 25 percent slopes

Setting
Landform: Hill

Position on the Landform: Backslope
Shoulder
Size of areas: About 1.0 to 254 acres

Map Unit Composition
Berks and similar components: 90 percent

Contrasting Components:
Gilpin soils: 5 percent
Guernsey soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

BERKS
Available water capacity: About 1.9 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: F-1
Hydric soil: No

BkE=Berks channery silt loam, 25 to 40 percent slopes

Setting

Landform: Hill
Position on the Landform: Backslope
Size of areas: About 1.0 to 581 acres

Map Unit Composition

Berks and similar components: 85 percent

Contrasting Components:
Gilpin soils: 10 percent
Guernsey soils: 5 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

BERKS
Available water capacity: About 2.1 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 150 to 230 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 70.0 to 99.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Slightly decomposed plant material
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery layers

Use and Management Considerations

Pastureland

The slope may restrict the use of some farm equipment.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

The engineering properties of this soil are generally unfavorable for supporting heavy loads. Special design of footings and foundations may be needed to prevent the structural damage caused by low soil strength.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: F-2
Hydric soil: No

BmB=Berks-Urban land complex, 2 to 6 percent slopes

Setting
Landform: Hill
Position on the Landform: Summit
Size of areas: About 2.0 to 61 acres

Map Unit Composition
Berks and similar components: 50 percent
Urban land and similar components: 40 percent

Contrasting Components:
Coshocton soils: 5 percent
Gilpin soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: None assigned
Prime farmland: Not prime farmland

Soil Properties and Qualities

BERKS
Available water capacity: About 1.7 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low

Surface layer texture Channery silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: Not rated
Hydric soil: No

URBAN LAND
Definition: Urban land is a miscellaneous area where the original soils have been removed or altered during excavation and construction activities, often resulting in random soil mixing. The soil surface is largely covered by streets, structures and other engineered installations. Generally the infiltration of precipitation on urban land is very limited.

Use and Management Considerations

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

Component Interpretive Groups

URBAN LAND
Pasture and hayland suitability group: Not rated
Hydric soil: Unranked

BmC=Berks-Urban land complex, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Summit
Shoulder
Backslope
Size of areas: About 8.0 to 193 acres

Map Unit Composition
Berks and similar components: 50 percent
Urban land and similar components: 40 percent

Contrasting Components:
Coshocton soils: 5 percent
Gilpin soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: None assigned
Prime farmland: Not prime farmland

Soil Properties and Qualities

BERKS
Available water capacity: About 1.7 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: Not rated
Hydric soil: No

URBAN LAND
Definition: Urban land is a miscellaneous area where the original soils have been removed or altered during excavation and construction activities, often resulting in random soil mixing. The soil surface is largely covered by streets, structures and other engineered installations. Generally the infiltration of precipitation on urban land is very limited.

Use and Management Considerations

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

Component Interpretive Groups

URBAN LAND
Pasture and hayland suitability group: Not rated
Hydric soil: Unranked

BmD=Berks-Urban land complex, 15 to 25 percent slopes

Setting
Landform: Hill
Position on the Landform: Shoulder
Backslope
Size of areas: About 6.0 to 107 acres

Map Unit Composition
Berks and similar components: 50 percent
Urban land and similar components: 40 percent

Contrasting Components:
Gilpin soils: 5 percent
Guernsey soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: None assigned
Prime farmland: Not prime farmland

Soil Properties and Qualities

BERKS
Available water capacity: About 1.8 inches to a depth of 23 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.9 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Bedrock may interfere with the construction of haul roads and log landing sites.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: Not rated
Hydric soil: No

URBAN LAND
Definition: Urban land is a miscellaneous area where the original soils have been removed or altered during excavation and construction activities, often resulting in random soil mixing. The soil surface is largely covered by streets, structures and other engineered installations. Generally the infiltration of precipitation on urban land is very limited.

Use and Management Considerations

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

Component Interpretive Groups

URBAN LAND
Pasture and hayland suitability group: Not rated
Hydric soil: Unranked

BpF=Bethesda very channery silt loam, 25 to 70 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Shoulder
Backslope
Footslope
Summit
Size of areas: About 2.0 to 103 acres

Map Unit Composition
Bethesda and similar components: 85 percent

Contrasting Components:
Highwalls: 5 percent
Summits, benches: 5 percent
Water: 5 percent

Map Unit Interpretive Groups
Land capability classification: 7e
Prime farmland: Not prime farmland

Soil Properties and Qualities

BETHESDA
Available water capacity: About 4.3 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 7.0 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 0.5 percent
Parent material: Acid residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Very channery silt loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery layers

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

The hazard of slipppage increases the risk of mass soil movement. Sites subject to slippage are generally unsuited to building site development.

Septic Tank Absorption Fields

Because of the high potential for slippage, this soil is generally unsuited to septic tank absorption fields.

Local Roads and Streets

Because of the high potential for slippage, this soil is generally unsuited to use for local roads and streets.

Component Interpretive Groups

BETHESDA
Pasture and hayland suitability group: H-1
Hydric soil: No

BsC2=Bogart loam, 6 to 12 percent slopes, eroded

Setting
Landform: Stream terrace
Position on the Landform: Riser
Size of areas: About 3.0 to 19 acres

Map Unit Composition
Bogart and similar components: 80 percent
Contrasting Components:
Chili soils: 10 percent
Soils with till or colluvium in the substratum: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

BOGART
Available water capacity: About 8.5 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Stratified glaciofluvial outwash deposits
Permeability: Moderate
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

BOGART

Pasture and hayland suitability group: A-1
Hydric soil: No

BtA=Bogart silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 2.0 to 17 acres

Map Unit Composition

Bogart and similar components: 80 percent

Contrasting Components:
Chili soils: 5 percent
Glenford soils: 5 percent
Jimtown soils: 5 percent
Soils with silty lacustrine layers in the substratum: 5 percent

Map Unit Interpretive Groups

Land capability classification: 1
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

BOGART
Available water capacity: About 8.4 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Stratified glaciofluvial outwash deposits
Permeability: Moderate
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Systematic subsurface drainage will extend the period of planting and harvesting crops.

Pastureland

This soil is well suited to pasture.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BOGART
Pasture and hayland suitability group: A-1
Hydric soil: No

BtB=Bogart silt loam, 2 to 6 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 1.0 to 67 acres

Map Unit Composition
Bogart and similar components: 80 percent

Contrasting Components:
Chili soils: 5 percent
Glenford soils: 5 percent
Jimtown soils: 5 percent
Soils with silty lacustrine layers in the substratum: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

BOGART
Available water capacity: About 8.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 60 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Stratified glaciofluvial outwash deposits
Permeability: Moderate
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Erosion control is needed when pastures are renovated.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BOGART

Pasture and hayland suitability group: A-1

Hydric soil: No

BtC=Bogart silt loam, 6 to 12 percent slopes

Setting

Landform: Stream terrace
Position on the Landform: Riser
Size of areas: About 2.0 to 59 acres

Map Unit Composition

Bogart and similar components: 80 percent

Contrasting Components:
Chili soils: 10 percent
Soils with till or colluvium in the substratum: 10 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

BOGART

Available water capacity: About 8.5 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Stratified glaciofluvial outwash deposits
Permeability: Moderate
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

BOGART
Pasture and hayland suitability group: A-1
Hydric soil: No

CaA=Calcutta silt loam, 0 to 3 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 2.0 to 52 acres

Map Unit Composition
Calcutta and similar components: 80 percent

Contrasting Components:
Fitchville soils: 10 percent
Rainsboro soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

CALCUTTA
Available water capacity: About 5.3 inches to a depth of 27 inches
Cation-exchange capacity of the surface layer: 150 to 230 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 20 to 30 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 70.0 to 99.0 percent
Parent material: Loess over outwash over residuum
Permeability: Moderate or moderately slow above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Slightly decomposed plant material
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low pH in the soil may cause a nutrient imbalance in seedlings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The engineering properties of this soil are generally unfavorable for supporting heavy loads. Special design of footings and foundations may be needed to prevent the structural damage caused by low soil strength.

Moderate shrinking and swelling of the soil may crack foundations and basement walls.

Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of Local Roads and Streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

CALCUTTA
Pasture and hayland suitability group: D-1
Hydric soil: No

CcB=Canfield silt loam, 2 to 6 percent slopes

Setting
Landform: Till plain
Position on the Landform: Shoulder
Summit
Size of areas: About 0.5 to 1,233 acres

Map Unit Composition
Canfield and similar components: 90 percent

Contrasting Components:
Ravenna soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

CANFIELD
Available water capacity: About 4.2 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Depth to the top of the seasonal high water table: 1.2 to 2.3 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

CANFIELD
Pasture and hayland suitability group: F-3
Hydric soil: No

CcC=Canfield silt loam, 6 to 12 percent slopes

Setting
Landform: Till plain
Position on the Landform: Shoulder
Summit
Backslope
Size of areas: About 0.5 to 2,703 acres

Figure 10. Specialty farm enterprises include orchards such as this apple orchard growing on Canfield silt loam, 6 to12 percent slopes. This soil has a 3e Land Capability Classification.

Map Unit Composition
Canfield and similar components: 85 percent

Contrasting Components:
Ravenna soils: 10 percent

Amanda soils: 5 percent

Map Unit Interpretive Groups

Land capability classification: 3e (Figure 10)
Prime farmland: Not prime farmland

Soil Properties and Qualities

CANFIELD

Available water capacity: About 4.7 inches to a depth of 25 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Depth to the top of the seasonal high water table: 1.2 to 2.3 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building

maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

CANFIELD
Pasture and hayland suitability group: F-3
Hydric soil: No

CcD=Canfield silt loam, 12 to 20 percent slopes

Setting
Landform: Till plain
Position on the Landform: Backslope
Size of areas: About 0.5 to 125 acres

Map Unit Composition
Canfield and similar components: 90 percent

Contrasting Components:
Amanda soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

CANFIELD
Available water capacity: About 3.9 inches to a depth of 21 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Depth to the top of the seasonal high water table: 1.2 to 2.3 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

CANFIELD
Pasture and hayland suitability group: F-3
Hydric soil: No

CcE=Canfield silt loam, 20 to 35 percent slopes

Setting
Landform: Till plain
Position on the Landform: Backslope
Size of areas: About 0.5 to 107 acres

Map Unit Composition
Canfield and similar components: 80 percent

Contrasting Components:
Amanda soils: 10 percent
Zepernick soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 6e
Prime farmland: Not prime farmland

Soil Properties and Qualities

CANFIELD
Available water capacity: About 4.7 inches to a depth of 26 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams

Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Depth to the top of the seasonal high water table: 1.2 to 2.3 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

The slope may restrict the use of some farm equipment.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, the use of mechanical planting equipment is not practical.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

CANFIELD
Pasture and hayland suitability group: F-4
Hydric soil: No

CeA=Carlisle muck, 0 to 1 percent slopes

Setting
Landform: Depression on outwash plain
Depression on ground moraine
Position on the Landform: Toeslope
Size of areas: About 1.0 to 79 acres

Map Unit Composition
Carlisle and similar components: 90 percent

Contrasting Components:
Lorain soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 5w
Prime farmland: Not prime farmland

Soil Properties and Qualities

CARLISLE
Available water capacity: About 23.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 150 to 230 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.0 to 1.0 feet
Water table kind: Apparent
Ponding: Very long
Depth of ponding: 0.0 to 2.0 feet
Drainage class: Very poorly drained (Figure 11)
Flooding: None
Organic matter content in the surface layer: 70.0 to 99.0 percent
Parent material: Herbaceous and woody organic material
Permeability: Moderately slow to moderately rapid
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Muck
Potential for surface runoff: Negligible
Wind erosion hazard: Severe
Distinctive soil property: Layers of organic material

Figure 11. Hydric soils of wetlands support a wide diversity of hydrophytic vegetation such as the iris, cattails, reedsand shrubs in this picture.

Use and Management Considerations

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

Standing water can inhibit the growth of some species of seedlings by restricting root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

When drained, the organic layers in this soil subside. Subsidence leads to differential rates of settlement which may cause foundations to break. Because of the high potential for subsidence, this soil is generally unsuited to building site development.

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Subsidence of the organic material reduces the bearing capacity of this soil.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

CARLISLE
Pasture and hayland suitability group: D-1
Hydric soil: Yes

CfD2=Chili loam, 12 to 20 percent slopes, eroded

Setting

Landform: Kame
Stream terrace
Position on the Landform: Riser on terrace
backslope on kame
Size of areas: About 1.0 to 15 acres

Map Unit Composition

Chili and similar components: 90 percent

Contrasting Components:
Conotton soils: 10 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

Chili
Available water capacity: About 7.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Glaciofluvial outwash
Permeability: Moderately rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

Chili
Pasture and hayland suitability group: A-1
Hydric soil: No

ChA=Chili silt loam, 0 to 2 percent slopes

Setting
Landform: Kame
Stream terrace
Position on the Landform: Tread on terrace
summit on kame
Size of areas: About 2.0 to 63 acres

Map Unit Composition
Chili and similar components: 90 percent
Contrasting Components:
Conotton soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2s
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

Chili
Available water capacity: About 6.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Glaciofluvial outwash
Permeability: Moderately rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

This soil is well suited to pasture.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

This soil is well suited to use as building sites.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

Chili
Pasture and hayland suitability group: A-1
Hydric soil: No

ChB=Chili silt loam, 2 to 6 percent slopes

Setting

Landform: Stream terrace
Kame
Position on the Landform: Tread on terrace
summit and shoulder on kame
Size of areas: About 0.5 to 160 acres

Map Unit Composition

Chili and similar components: 90 percent

Contrasting Components:
Conotton soils: 10 percent

Map Unit Interpretive Groups

Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

Chili
Available water capacity: About 6.7 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Glaciofluvial outwash
Permeability: Moderately rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Erosion control is needed when pastures are renovated.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

This soil is well suited to use as building sites.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

Chili
Pasture and hayland suitability group: A-1
Hydric soil: No

ChC=Chili silt loam, 6 to 12 percent slopes

Setting
Landform: Stream terrace
Kame
Position on the Landform: Riser on terrace summit, shoulder and backslope on kame
Size of areas: About 0.5 to 102 acres

Map Unit Composition
Chili and similar components: 90 percent

Contrasting Components:
Conotton soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

Chili
Available water capacity: About 7.8 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Glaciofluvial outwash
Permeability: Moderately rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Building Sites

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

Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

Chili
Pasture and hayland suitability group: A-1
Hydric soil: No

CmB=Conotton gravelly loam, 2 to 6 percent slopes

Setting
Landform: Stream terrace
Kame terrace
Position on the Landform: Tread on terrace
shoulder on kame
Size of areas: About 1.5 to 48 acres

Map Unit Composition
Conotton and similar components: 90 percent

Contrasting Components:
Chili soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3s
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

CONOTTON
Available water capacity: About 5.3 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches

Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 3.0 percent
Parent material: Glaciofluvial outwash
Permeability: Rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Gravelly loam
Potential for surface runoff: Very low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

A loss of soil productivity may occur following an episode of fire.

Building Sites

This soil is well suited to use as building sites.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

CONOTTON
Pasture and hayland suitability group: B-1
Hydric soil: No

CmC=Conotton gravelly loam, 6 to 12 percent slopes

Setting
Landform: Stream terrace
Kame terrace
Position on the Landform: Riser on terrace; shoulder and footslope on kame
Size of areas: About 1.5 to 20 acres

Map Unit Composition
Conotton and similar components: 90 percent

Contrasting Components:
Chili soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

CONOTTON
Available water capacity: About 5.2 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 3.0 percent
Parent material: Glaciofluvial outwash
Permeability: Rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Gravelly loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

A loss of soil productivity may occur following an episode of fire.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

CONOTTON
Pasture and hayland suitability group: B-1
Hydric soil: No

CoB=Coshocton silt loam, 2 to 6 percent slopes

Setting
Landform: Hill
Position on the Landform: Summit
Size of areas: About 1.0 to 72 acres

Map Unit Composition
Coshocton and similar components: 90 percent

Contrasting Components:
Gilpin soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

COSHOCTON
Available water capacity: About 8.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 120 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of ;ocal roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

COSHOCTON
Pasture and hayland suitability group: A-6
Hydric soil: No

CoC=Coshocton silt loam, 6 to 15 percent slopes

Setting

Landform: Hill
Position on the Landform: Footslope
Backslope
Summit
Size of areas: About 1.0 to 322 acres

Map Unit Composition

Coshocton and similar components: 85 percent

Contrasting Components:
Gilpin soils: 15 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

COSHOCTON
Available water capacity: About 8.3 inches to a depth of 52 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 120 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

COSHOCTON
Pasture and hayland suitability group: A-6
Hydric soil: No

CoD=Coshocton silt loam, 15 to 25 percent slopes

Setting
Landform: Hill
Position on the Landform: Footslope
Backslope
Size of areas: About 2.0 to 31 acres

Map Unit Composition
Coshocton and similar components: 85 percent

Contrasting Components:
Gilpin soils: 15 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

COSHOCTON
Available water capacity: About 8.8 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 120 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

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

and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

COSHOCTON

Pasture and hayland suitability group: A-2
Hydric soil: No

DAM=Dam

Definition: An earthen barrier constructed across a valley to check the flow of a stream and create a small lake or reservoir. Spillways or other components of the dam may be hardened by concrete or other engineered materials.

DgA=Doles silt loam, 0 to 3 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 1.5 to 63 acres

Map Unit Composition
Doles and similar components: 90 percent

Contrasting Components:
Wetter soil: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

DOLES
Available water capacity: About 5.7 inches to a depth of 30 inches
Cation-exchange capacity of the surface layer: 10 to 20 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 20 to 30 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 3.0 percent
Parent material: Loess over old alluvium or silty colluvium
Permeability: Moderately slow or slow above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate

Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of **Local Roads and**

Streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

DOLES
Pasture and hayland suitability group: C-1
Hydric soil: No

ErC=Ernest silt loam, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Footslope
Size of areas: About 3.0 to 63 acres

Map Unit Composition
Ernest and similar components: 80 percent

Contrasting Components:
Coshocton soils: 5 percent
Guernsey soils: 5 percent
Omulga soils: 5 percent
Richland soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

ERNEST
Available water capacity: About 3.6 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 11 to 13 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 20 to 36 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Loamy colluvium derived from interbedded sedimentary rock
Permeability: Slow or moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

ERNEST
Pasture and hayland suitability group: F-3
Hydric soil: No

ErD=Ernest silt loam, 15 to 25 percent slopes

Setting
Landform: Hill
Position on the Landform: Footslope
Size of areas: About 2.0 to 55 acres

Map Unit Composition
Ernest and similar components: 80 percent

Contrasting Components:
Coshocton soils: 5 percent
Guernsey soils: 5 percent
Omulga soils: 5 percent
Richland soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

ERNEST
Available water capacity: About 5.1 inches to a depth of 33 inches
Cation-exchange capacity of the surface layer: 11 to 13 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 20 to 36 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Loamy colluvium derived from

interbedded sedimentary rock
Permeability: Slow or moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

ERNEST
Pasture and hayland suitability group: F-3
Hydric soil: No

FbB=Fairpoint very channery silt loam, 0 to 8 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Shoulder
Summit
Size of areas: About 1.0 to 70 acres

Map Unit Composition
Fairpoint and similar components: 90 percent

Contrasting Components:
Ultra acid soils: 8 percent
Water: 2 percent

Map Unit Interpretive Groups
Land capability classification: 4s
Prime farmland: Not prime farmland

Soil Properties and Qualities

FAIRPOINT
Available water capacity: About 4.5 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 7.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 0.5 percent
Parent material: Medium acid residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderate or moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Very channery silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very channery layers

Use and Management Considerations

Pastureland (Figure 12)

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Figure 12. Fairpoint very channery silt loam, 0 to 8 percent slopes sown in grasses and legumes being used as pasture.

Woodland

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

Moderate shrinking and swelling of the soil may crack foundations and basement walls.

Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

FAIRPOINT
Pasture and hayland suitability group: E-3
Hydric soil: No

FbD=Fairpoint very channery silt loam, 8 to 25 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Backslope
Shoulder
Summit
Footslope
Size of areas: About 1.0 to 215 acres

Map Unit Composition
Fairpoint and similar components: 85 percent

Contrasting Components:
Steeper areas and highwalls: 5 percent
Ultra acid soils: 5 percent
Water: 5 percent

Map Unit Interpretive Groups
Land capability classification: 6s
Prime farmland: Not prime farmland

Soil Properties and Qualities

FAIRPOINT
Available water capacity: About 4.4 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 7.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 0.5 percent
Parent material: Medium acid residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderate or moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Very channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Very channery layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

FAIRPOINT
Pasture and hayland suitability group: E-3
Hydric soil: No

FbF=Fairpoint very channery silt loam, 25 to 70 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Shoulder
Summit
Backslope
Size of areas: About 0.5 to 2,032 acres

Map Unit Composition
Fairpoint and similar components: 85 percent

Contrasting Components:
Highwalls: 5 percent
Summits and benches: 5 percent
Water: 5 percent

Map Unit Interpretive Groups
Land capability classification: 7e
Prime farmland: Not prime farmland

Soil Properties and Qualities

FAIRPOINT
Available water capacity: About 4.4 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 7.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet

Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 0.5 percent
Parent material: Medium acid residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderate or moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Very channery silt loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight
Distinctive soil property: Very channery layers

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

The hazard of slipppage increases the risk of mass soil movement. Sites subject to slippage are generally unsuited to building site development.

Septic Tank Absorption Fields

Because of the high potential for slippage, this soil is generally unsuited to septic tank absorption fields.

Local Roads and Streets

Because of the high potential for slippage, this soil is generally unsuited to use for local roads and streets.

Component Interpretive Groups

FAIRPOINT
Pasture and hayland suitability group: H-1
Hydric soil: No

FcB=Fairpoint silty clay loam, 0 to 8 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Shoulder
Summit
Size of areas: About 1.5 to 162 acres

Map Unit Composition
Fairpoint and similar components: 90 percent

Contrasting Components:
Unmined areas: 8 percent
Water: 2 percent

Map Unit Interpretive Groups
Land capability classification: 3s
Prime farmland: Not prime farmland

Soil Properties and Qualities

FAIRPOINT
Available water capacity: About 4.8 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 24 meq per 100 grams

Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Medium acid residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderate or moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silty clay loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very channery layers

Use and Management Considerations

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

FAIRPOINT
Pasture and hayland suitability group: B-4
Hydric soil: No

FcD=Fairpoint silty clay loam, 8 to 25 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Shoulder
Summit
Backslope
Footslope
Size of areas: About 2.0 to 278 acres

Map Unit Composition
Fairpoint and similar components: 90 percent

Contrasting Components:
Unmined areas: 8 percent
Highwalls: 2 percent

Map Unit Interpretive Groups
Land capability classification: 4s
Prime farmland: Not prime farmland

Soil Properties and Qualities

FAIRPOINT

Available water capacity: About 4.8 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 24 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Medium acid residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderate or moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silty clay loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Very channery layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

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

Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

FAIRPOINT
Pasture and hayland suitability group: B-4
Hydric soil: No

FdA=Fitchville silt loam, 0 to 2 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 1.0 to 110 acres

Map Unit Composition
Fitchville and similar components: 90 percent

Contrasting Components:
Heavier soils: 5 percent
Wetter soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

FITCHVILLE
Available water capacity: About 10.4 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 14 to 22 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Stratified glaciolacustrine deposits
Permeability: Moderate or moderately slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

FITCHVILLE
Pasture and hayland suitability group: C-1
Hydric soil: No

FdB=Fitchville silt loam, 2 to 6 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 0.5 to 41 acres

Map Unit Composition
Fitchville and similar components: 85 percent

Contrasting Components:
Glenford soils: 5 percent
Heavier soils: 5 percent
Wetter soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

FITCHVILLE
Available water capacity: About 10.2 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 14 to 22 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 2.0

to 3.0 percent
Parent material: Stratified glaciolacustrine deposits
Permeability: Moderate or moderately slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Erosion control is needed when pastures are renovated.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and

streets is needed to revent the structural damage caused by low soil strength.

Component Interpretive Groups

FITCHVILLE
Pasture and hayland suitability group: C-1
Hydric soil: No

FeA=Fluvaquents, silty, 0 to 1 percent slopes, frequently flooded

Setting
Landform: Flood plain
Position on the Landform: Step
Size of areas: About 8.0 to 131 acres

Map Unit Composition
Fluvaquents and similar components: 100 percent

Map Unit Interpretive Groups
Land capability classification: 5w
Prime farmland: Not prime farmland

Soil Properties and Qualities

FLUVAQUENTS
Available water capacity: About 13.2 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: ---
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: At or near the surface
Water table kind: Apparent
Ponding: Very long
Depth of ponding: 0.0 to 2.0 feet
Drainage class: Very poorly drained
Flooding: Frequent
Organic matter content in the surface layer:
Parent material: Alluvium
Permeability: Slow to rapid
Potential frost action: Not rated
Shrink-swell potential: Not rated
Surface layer texture Stratified variable
Potential for surface runoff: Negligible
Wind erosion hazard: Slight
Distinctive soil property: Fluvaquents are soils on flood plains which are perennially covered by water. The soil material consists of dark- and light-colored, stratified sandy, loamy, silty or clayey alluvial deposits.

Use and Management Considerations

Pastureland

Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.

Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low pH in the soil may cause a nutrient imbalance in seedlings.

Standing water can inhibit the growth of some species of seedlings by restricting root respiration.

Flooding may result in damage to haul roads and increased maintenance costs.

Soil wetness may limit the use of this soil by log trucks.

Flooding restricts the safe use of roads by log trucks.

Ponding restricts the safe use of roads by log trucks.

Building Sites

The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters. Because of the flooding, this soil is generally unsuited to building site development.

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic Tank Absorption Fields

This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper

treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Special design of roads and bridges is needed to prevent the damage caused by flooding.

Component Interpretive Groups

FLUVAQUENTS
Pasture and hayland suitability group: Not rated
Hydric soil: Yes

FnC2=Fredericktown gravelly loam, 6 to 15 percent slopes, eroded

Setting
Landform: Kame terrace
Stream terrace
Position on the Landform: Riser
Size of areas: About 1.0 to 58 acres

Map Unit Composition
Fredericktown and similar components: 90 percent

Contrasting Components:
Conotton soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

FREDICKTOWN
Available water capacity: About 5.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 6.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loess over glaciofluvial outwash
Permeability: Moderate to rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Gravelly loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

FREDICKTOWN
Pasture and hayland suitability group: B-1
Hydric soil: No

FnD2=Fredericktown gravelly loam, 15 to 25 percent slopes, eroded

Setting

Landform: Stream terrace
Kame terrace
Position on the Landform: Riser
Size of areas: About 1.5 to 16 acres

Map Unit Composition

Fredericktown and similar components: 90 percent

Contrasting Components:
Conotton soils: 10 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

FREDICKTOWN
Available water capacity: About 7.7 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 6.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loess over glaciofluvial outwash
Permeability: Moderate to rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Gravelly loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

FREDICKTOWN
Pasture and hayland suitability group: A-2
Hydric soil: No

FoB=Fredericktown silt loam, 2 to 6 percent slopes

Setting
Landform: Stream terrace
Kame terrace
Position on the Landform: Tread
Size of areas: About 1.0 to 139 acres

Map Unit Composition
Fredericktown and similar components: 90 percent

Contrasting Components:
Conotton soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

FREDICKTOWN
Available water capacity: About 6.4 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 6.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained

Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loess over glaciofluvial outwash
Permeability: Moderate to rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Erosion control is needed when pastures are renovated.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

This soil is well suited to use as building sites.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

FREDICKTOWN
Pasture and hayland suitability group: A-1
Hydric soil: No

FrA=Frenchtown silt loam, 0 to 2 percent slopes

Setting
Landform: Till plain
Position on the Landform: Footslope
Toeslope
Size of areas: About 1.0 to 23 acres

Map Unit Composition
Frenchtown and similar components: 100 percent

Map Unit Interpretive Groups
Land capability classification: 3w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

FREDICKTOWN
Available water capacity: About 4.2 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 10 to 22 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18

to 38 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Perched
Ponding: Brief
Depth of ponding: 0.0 to 1.0 feet
Drainage class: Poorly drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow or very slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

A combination of surface and subsurface drainage helps to remove excess water.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

FREDICKTOWN
Pasture and hayland suitability group: C-1
Hydric soil: Yes

GaB=Gavers silt loam, 2 to 6 percent slopes

Setting
Landform: Hill
Position on the Landform: Footslope
Size of areas: About 1.0 to 70 acres

Map Unit Composition
Gavers and similar components: 90 percent

Contrasting Components:
Coshocton soils: 5 percent
Wetter soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

GAVERS
Available water capacity: About 9.7 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loess over colluvium over interbedded siltstone, clayey shale and limestone residuum
Permeability: Slow or moderately slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Erosion control is needed when pastures are renovated.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

GAVERS
Pasture and hayland suitability group: C-1
Hydric soil: No

GeC=Germano fine sandy loam, 6 to 15 percent slopes

Setting

Landform: Hill
Position on the Landform: Shoulder
Summit
Backslope
Size of areas: About 1.5 to 30 acres

Map Unit Composition

Germano and similar components: 85 percent

Similar Components
More than 60 percent rock fragments in the surface layer

Contrasting Components:
Gilpin soils: 15 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

GERMANO
Available water capacity: About 4.0 inches to a depth of 33 inches
Cation-exchange capacity of the surface layer: 5.0 to 10 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum weathered from sandstone
Permeability: Moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Fine sandy loam
Potential for surface runoff: Low
Wind erosion hazard: Moderate
Distinctive soil property: Very channery layers

Use and Management Considerations

Cropland

The rooting depth of crops is restricted by bedrock.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Maintaining vegetative cover and establishing windbreaks reduce the hazard of wind erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

A loss of soil productivity may occur following an episode of fire.

Building Sites

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

GERMANO
Pasture and hayland suitability group: F-1
Hydric soil: No

GeD=Germano fine sandy loam, 15 to 25 percent slopes

Setting
Landform: Hill
Position on the Landform: Backslope
Shoulder
Summit
Size of areas: About 24 to 36 acres

Map Unit Composition
Germano and similar components: 85 percent

Similar Components
More than 60 percent rock fragments in the surface layer

Contrasting Components:
Gilpin soils: 15 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

GERMANO
Available water capacity: About 4.0 inches to a depth of 36 inches
Cation-exchange capacity of the surface layer: 5.0 to 10 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 3.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum weathered from sandstone
Permeability: Moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Fine sandy loam
Potential for surface runoff: Medium
Wind erosion hazard: Moderate
Distinctive soil property: Very channery layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

Sandy layers in this soil increase the maintenance of haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Burning may destroy organic matter.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

GERMANO
Pasture and hayland suitability group: F-1
Hydric soil: No

GnB=Gilpin silt loam, 2 to 6 percent slopes

Setting
Landform: Hill
Position on the Landform: Summit
Size of areas: About 0.5 to 134 acres

Map Unit Composition
Gilpin and similar components: 90 percent

Contrasting Components:
Berks soils: 5 percent
Coshocton soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

GILPIN
Available water capacity: About 3.2 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 8.0 to 18 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The rooting depth of crops is restricted by bedrock.

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

GILPIN
Pasture and hayland suitability group: F-1
Hydric soil: No

GnC=Gilpin silt loam, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Summit
Shoulder
Backslope
Size of areas: About 0.5 to 257 acres

Map Unit Composition

Gilpin and similar components: 85 percent

Contrasting Components:
Coshocton soils: 10 percent
Berks soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

GILPIN
Available water capacity: About 3.6 inches to a depth of 25 inches
Cation-exchange capacity of the surface layer: 8.0 to 18 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.1 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The rooting depth of crops is restricted by bedrock.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Burning may destroy organic matter.

Building Sites

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

GILPIN
Pasture and hayland suitability group: F-1
Hydric soil: No

GnD=Gilpin silt loam, 15 to 25 percent slopes

Setting
Landform: Hill
Position on the Landform: Shoulder
Backslope
Size of areas: About 1.0 to 117 acres

Map Unit Composition
Gilpin and similar components: 85 percent

Contrasting Components:
Coshocton soils: 10 percent
Berks soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

GILPIN

Available water capacity: About 4.3 inches to a depth of 30 inches
Cation-exchange capacity of the surface layer: 8.0 to 18 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.5 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

GILPIN
Pasture and hayland suitability group: F-1
Hydric soil: No

GoC=Gilpin-Coshocton silt loams, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Backslope
Summit
Shoulder
Size of areas: About 2.0 to 808 acres

Map Unit Composition
Gilpin and similar components: 55 percent
Coshocton and similar components: 30 percent

Contrasting Components:
Berks soils: 10 percent
Guernsey soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

GILPIN
Available water capacity: About 3.7 inches to a depth of 28 inches
Cation-exchange capacity of the surface layer: 8.0 to 18 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.3 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The rooting depth of crops is restricted by bedrock.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

GILPIN
Pasture and hayland suitability group: F-1
Hydric soil: No

Soil Properties and Qualities

COSHOCTON
Available water capacity: About 8.9 inches to a depth of 56 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 80 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

COSHOCTON
Pasture and hayland suitability group: A-6
Hydric soil: No

GoD=Gilpin-Coshocton silt loams, 15 to 25 percent slopes

Setting
Landform: Hill
Position on the Landform: Backslope
Size of areas: About 1.0 to 117 acres

Map Unit Composition
Gilpin and similar components: 55 percent
Coshocton and similar components: 30 percent
Contrasting Components:
Berks soils: 10 percent
Guernsey soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

GILPIN

Available water capacity: About 4.0 inches to a depth of 28 inches
Cation-exchange capacity of the surface layer: 8.0 to 18 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.3 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

GILPIN
Pasture and hayland suitability group: F-1
Hydric soil: No

Soil Properties and Qualities

COSHOCTON
Available water capacity: About 9.1 inches to a depth of 56 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 80 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

COSHOCTON
Pasture and hayland suitability group: A-2
Hydric soil: No

GpC=Gilpin-Coshocton-Urban land complex, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Shoulder
Summit
Backslope
Size of areas: About 10 to 169 acres

Map Unit Composition
Gilpin and similar components: 40 percent
Coshocton and similar components: 30 percent
Urban land and similar components: 20 percent

Contrasting Components:
Berks soils: 5 percent
Guernsey soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: None assigned
Prime farmland: Not prime farmland

Soil Properties and Qualities

GILPIN
Available water capacity: About 4.2 inches to a depth of 30 inches
Cation-exchange capacity of the surface layer: 8.0 to 18 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.5 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Building Sites

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

GILPIN
Pasture and hayland suitability group: Not rated
Hydric soil: No

Soil Properties and Qualities

COSHOCTON
Available water capacity: About 8.7 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 80 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

COSHOCTON
Pasture and hayland suitability group: Not rated

Hydric soil: No

URBAN LAND
Definition: Urban land is a miscellaneous area where the original soils have been removed or altered during excavation and construction activities, often resulting in random soil mixing. The soil surface is largely covered by streets, structures and other engineered installations. Generally the infiltration of precipitation on urban land is very limited.

Use and Management Considerations
Onsite investigation is needed to determine the suitability for specific uses.

GrB=Glenford silt loam, 2 to 6 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 1.0 to 38 acres

Map Unit Composition
Glenford and similar components: 95 percent

Contrasting Components:
Fitchville soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

GLENFORD
Available water capacity: About 9.4 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Stratified glaciolacustrine deposits
Permeability: Moderate or moderately slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and

damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

GLENFORD
Pasture and hayland suitability group: A-6
Hydric soil: No

GrC=Glenford silt loam, 6 to 12 percent slopes

Setting

Landform: Stream terrace
Position on the Landform: Riser
Size of areas: About 1.0 to 34 acres

Map Unit Composition

Glenford and similar components: 95 percent

Contrasting Components:
Coshocton soils: 5 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

GLENFORD
Available water capacity: About 9.4 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Stratified glaciolacustrine deposits
Permeability: Moderate or moderately slow

The GrC map unit has a permeability of the substratum that is slightly out of the range of the series. This should not adversely affect the use and management for most purposes.

Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

GLENFORD
Pasture and hayland suitability group: A-6
Hydric soil: No

GuC=Guernsey silt loam, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Footslope
Backslope
Size of areas: About 2.0 to 80 acres

Map Unit Composition
Guernsey and similar components: 90 percent

Contrasting Components:
Berks soils: 5 percent
Keene soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

GUERNSEY
Available water capacity: About 8.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 12 to 25 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 50 to 120 inches
Depth to the top of the seasonal high water table: 0.8 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Colluvium and residuum weathered from shale and siltstone over interbedded with some limestone
Permeability: Moderate to slow above the bedrock
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

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

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

GUERNSEY
Pasture and hayland suitability group: A-6
Hydric soil: No

GuC2=Guernsey silt loam, 6 to 15 percent slopes, eroded

Setting
Landform: Hill
Position on the Landform: Backslope
Footslope
Size of areas: About 1.0 to 25 acres

Map Unit Composition
Guernsey and similar components: 90 percent

Contrasting Components:
Berks soils: 5 percent
Keene soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

GUERNSEY
Available water capacity: About 8.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 12 to 25 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 50 to 120 inches
Depth to the top of the seasonal high water table: 0.8 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Colluvium and residuum weathered from shale and siltstone over interbedded with some limestone
Permeability: Moderate to slow above the bedrock
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

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

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and

streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

GUERNSEY
Pasture and hayland suitability group: A-6
Hydric soil: No

GuD=Guernsey silt loam, 15 to 25 percent slopes

Setting
Landform: Hill
Position on the Landform: Footslope
Backslope
Size of areas: About 1.5 to 30 acres

Map Unit Composition
Guernsey and similar components: 85 percent

Contrasting Components:
Berks soils: 10 percent
Somewhat poorly drained soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

GUERNSEY
Available water capacity: About 8.0 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 12 to 25 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 50 to 120 inches
Depth to the top of the seasonal high water table: 0.8 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Colluvium and residuum weathered from shale and siltstone over interbedded with some limestone
Permeability: Moderate to slow above the bedrock
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silt loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The hazard of slipppage increases the risk of mass soil movement. Sites subject to slippage are generally unsuited to building site development.

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

Septic Tank Absorption Fields

Because of the high potential for slippage, this soil is generally unsuited to septic tank absorption fields.

Local Roads and Streets

Because of the high potential for slippage, this soil is generally unsuited to use for local roads and streets.

Component Interpretive Groups

GUERNSEY
Pasture and hayland suitability group: A-2
Hydric soil: No

HeB=Hazleton channery loam, 2 to 6 percent slopes

Setting
Landform: Hill
Position on the Landform: Summit
Size of areas: About 2.0 to 12 acres

Map Unit Composition
Hazleton and similar components: 85 percent

Contrasting Components:
Westmoreland soils: 10 percent
Germano soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

HAZLETON
Available water capacity: About 4.5 inches to a depth of 44 inches
Cation-exchange capacity of the surface layer: 15 to 30 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 3.7 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from sandstone
Permeability: Moderate to rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery loam
Potential for surface runoff: Very low
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture

stress because of the limited available water capacity.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

HAZLETON
Pasture and hayland suitability group: B-1
Hydric soil: No

HeC=Hazleton channery loam, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Backslope
Summit
Shoulder
Size of areas: About 1.0 to 441 acres

Map Unit Composition
Hazleton and similar components: 85 percent

Contrasting Components:
Westmoreland soils: 10 percent
Germano soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

HAZLETON
Available water capacity: About 4.6 inches to a depth of 45 inches
Cation-exchange capacity of the surface layer: 15 to 30 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 3.7 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from

sandstone
Permeability: Moderate to rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Sandy layers in this soil increase the maintenance of haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HAZLETON
Pasture and hayland suitability group: B-1
Hydric soil: No

HeD=Hazleton channery loam, 15 to 25 percent slopes

Setting
Landform: Hill
Position on the Landform: Summit
Shoulder
Backslope
Size of areas: About 0.5 to 95 acres

Map Unit Composition
Hazleton and similar components: 85 percent

Contrasting Components:
Westmoreland soils: 10 percent
Germano soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

HAZLETON
Available water capacity: About 5.7 inches to a depth of 58 inches
Cation-exchange capacity of the surface layer: 15 to 30 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 4.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from sandstone
Permeability: Moderate to rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

Sandy layers in this soil increase the maintenance of haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The sandiness of the soil may reduce the traction of wheeled harvest equipment and log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HAZLETON
Pasture and hayland suitability group: B-1
Hydric soil: No

HeE=Hazleton channery loam, 25 to 40 percent slopes

Setting
Landform: Hill
Position on the Landform: Backslope
Size of areas: About 1.0 to 210 acres

Map Unit Composition
Hazleton and similar components: 90 percent

Contrasting Components:
Westmoreland soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 6e
Prime farmland: Not prime farmland

Soil Properties and Qualities

HAZLETON
Available water capacity: About 4.9 inches to a depth of 48 inches
Cation-exchange capacity of the surface layer: 15 to 30 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 4.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from sandstone
Permeability: Moderate to rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Extremely channery layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

The slope may restrict the use of some farm equipment.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Sandy layers in this soil increase the maintenance of haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HAZLETON
Pasture and hayland suitability group: B-2
Hydric soil: No

HfF=Hazleton-Rock outcrop complex, 40 to 70 percent slopes

Setting
Landform: Hill

Position on the Landform: Backslope
Size of areas: About 4.0 to 368 acres

Map Unit Composition
Hazleton and similar components: 65 percent
Rock outcrop and similar components: 25 percent

Contrasting Components:
Westmoreland soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 7e
Prime farmland: Not prime farmland

Soil Properties and Qualities

HAZLETON
Available water capacity: About 4.4 inches to a depth of 44 inches
Cation-exchange capacity of the surface layer: 15 to 30 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 3.7 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from sandstone
Permeability: Moderate to rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

Sandy layers in this soil increase the maintenance of haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter and increase sedimentation.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HAZLETON
Pasture and hayland suitability group: H-1
Hy HAZLETON
dric soil: No

ROCK OUTCROP
Definition: Rock outcrop is exposed bedrock escarpments, consisting mostly of sandstone, on vertical cliffs and ledges on upper side slopes. Large boulders and smaller fragments that have broken off the exposed bedrock accumulate below the outcrop.

Use and Management Considerations

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

HgF=Hazleton-Westmoreland channery loams, 40 to 70 percent slopes

Setting
Landform: Hill
Position on the Landform: Backslope
Size of areas: About 0.5 to 1,581 acres

Map Unit Composition
Hazleton and similar components: 55 percent
Westmoreland and similar components: 35 percent

Similar Components

Stoney surface

Contrasting Components:
Rock outcrop: 10 percent

Map Unit Interpretive Groups
Land capability classification: 7e
Prime farmland: Not prime farmland

Soil Properties and Qualities

HAZLETON
Available water capacity: About 6.5 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 150 to 230 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 5.6 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 70.0 to 99.0 percent
Parent material: Residuum weathered from sandstone
Permeability: Moderate to rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Slightly decomposed plant material
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

Sandy layers in this soil increase the maintenance of haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The sandiness of the soil may reduce the traction of wheeled harvest equipment and log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Sandy layers may slough, thus reducing the efficiency of mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Building Sites

The engineering properties of this soil are generally unfavorable for supporting heavy loads. Special design of footings and foundations may be needed to prevent the structural damage caused by low soil strength.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HAZLETON
Pasture and hayland suitability group: H-1
Hydric soil: No

Soil Properties and Qualities

WESTMORELAND
Available water capacity: About 7.1 inches to a depth of 52 inches
Cation-exchange capacity of the surface layer: 15 to 30 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (lithic): 40 to 120 inches
Depth to the top of the seasonal high water table: Greater than 4.3 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Loamy colluvium and residuum weathered from sandstone and siltstone
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Burning may destroy organic matter and increase sedimentation.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing foundations and installing utilities.

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

WESTMORELAND
Pasture and hayland suitability group: H-1
Hydric soil: No

HkA=Holly silt loam, 0 to 2 percent slopes, frequently flooded

Setting
Landform: Flood plain
Position on the Landform: Step
Size of areas: About 1.0 to 151 acres

Map Unit Composition
Holly and similar components: 95 percent

Contrasting Components:
Tioga soils: 5 percent

Map Unit Interpretive Groups

Land capability classification: 3w
Prime farmland: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Soil Properties and Qualities

HOLLY

Available water capacity: About 9.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 24 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Bedrock (lithic): 70 to 120 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Apparent
Ponding: None
Drainage class: Poorly drained
Flooding: Frequent
Organic matter content in the surface layer: 2.0 to 5.0 percent
Parent material: Loamy alluvium
Permeability: Moderately slow to moderately rapid
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Winter grain crops are commonly not grown because of frequent flooding.

Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.

Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

Standing water can inhibit the growth of some species of seedlings by restricting root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Flooding may result in damage to haul roads and increased maintenance costs.

Soil wetness may limit the use of this soil by log trucks.

Flooding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters. Because of the flooding, this soil is generally unsuited to building site development.

Septic Tank Absorption Fields

This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Because of the seasonal high water table, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and bridges is needed to prevent the damage caused by flooding.

Component Interpretive Groups

HOLLY
Pasture and hayland suitability group: C-3
Hydric soil: Yes

HIB=Homewood silt loam, 2 to 6 percent slopes

Setting
Landform: Till plain
Position on the Landform: Backslope
Summit
Size of areas: About 2.0 to 56 acres

Map Unit Composition
Homewood and similar components: 90 percent

Contrasting Components:
Teegarden soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

HOMEWOOD
Available water capacity: About 4.7 inches to a depth of 25 inches
Cation-exchange capacity of the surface layer: 7.0 to 13 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 20 to 30 inches
Bedrock (paralithic): 60 to 120 inches
Depth to the top of the seasonal high water table: 1.5 to 2.3 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loess over till over residuum
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HOMEWOOD
Pasture and hayland suitability group: F-3
Hydric soil: No

HmA=Homeworth loam, 0 to 2 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 8.0 to 88 acres

Map Unit Composition
Homeworth and similar components: 90 percent

Contrasting Components:
Chili soils: 5 percent
Wetter soil: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

HOMEWORTH
Available water capacity: About 6.6 inches to a depth of 43 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Abrupt textural change: 30 to 50 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy water-sorted material over clayey lacustrine sediments
Permeability: Moderate in upper part; very slow in lower part
Potential frost action: High

Shrink-swell potential: Moderate
Surface layer texture Loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

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

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HOMEWORTH
asture and hayland suitability group: C-1
Hydric soil: No

HmB=Homeworth loam, 2 to 6 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 4.0 to 39 acres

Map Unit Composition
Homeworth and similar components: 90 percent

Contrasting Components:
Chili soils: 5 percent
Wetter soil: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

HOMEWORTH
Available water capacity: About 6.1 inches to a

depth of 38 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Abrupt textural change: 30 to 50 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy water-sorted material over clayey lacustrine sediments
Permeability: Moderate in upper part; very slow in lower part
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

The rooting depth of crops may be restricted by the high clay content.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Subsurface drainage helps to lower the seasonal high water table.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Erosion control is needed when pastures are renovated.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

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

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HOMEWORTH
Pasture and hayland suitability group: C-2
Hydric soil: No

HoA=Homeworth silt loam, 0 to 2 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 3.0 to 75 acres

Map Unit Composition
Homeworth and similar components: 90 percent

Contrasting Components:
Chili soils: 5 percent
Wetter soil: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

HOMEWORTH
Available water capacity: About 6.3 inches to a depth of 40 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Abrupt textural change: 30 to 50 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy water-sorted material over clayey lacustrine sediments
Permeability: Moderate in upper part; very slow in lower part
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

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

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HOMEWORTH
Pasture and hayland suitability group: C-1
Hydric soil: No

HoB=Homeworth silt loam, 2 to 6 percent slopes

Setting

Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 1.5 to 100 acres

Map Unit Composition
Homeworth and similar components: 90 percent

Contrasting Components:
Chili soils: 5 percent
Wetter soil: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

HOMEWORTH
Available water capacity: About 6.1 inches to a depth of 38 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Abrupt textural change: 30 to 50 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy water-sorted material over clayey lacustrine sediments
Permeability: Moderate in upper part; very slow in lower part
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Subsurface drainage helps to lower the seasonal high water table.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Erosion control is needed when pastures are renovated.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

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

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

HOMEWORTH
Pasture and hayland suitability group: C-2
Hydric soil: No

JwA=Jimtown silt loam, 0 to 2 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 1.5 to 30 acres

Map Unit Composition
Jimtown and similar components: 80 percent

Contrasting Components:

Fitchville soils: 5 percent
Fitchville soils with a till substratum above 60 inches: 5 percent
Homeworth soils: 5 percent
Valley soils: 5 percent

Map Unit Interpretive Groups

Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

JIMTOWN

Available water capacity: About 7.0 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Stratified glaciofluvial outwash deposits
Permeability: Moderate or moderately rapid
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly or extremely gravelly layers

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

JIMTOWN
Pasture and hayland suitability group: C-1
Hydric soil: No

JwB=Jimtown silt loam, 2 to 6 percent slopes

Setting
Landform: Stream terrace
Position on the Landform: Tread
Size of areas: About 1.0 to 36 acres

Map Unit Composition
Jimtown and similar components: 80 percent

Contrasting Components:
Fitchville soils: 5 percent
Fitchville soils with a till substratum above 60 inches: 5 percent
Homeworth soils: 5 percent
Valley soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

JIMTOWN
Available water capacity: About 8.0 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 15 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Stratified glaciofluvial outwash deposits
Permeability: Moderate or moderately rapid
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very gravelly or extremely gravelly layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Erosion control is needed when pastures are renovated.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

JIMTOWN
Pasture and hayland suitability group: C-1
Hydric soil: No

KeB=Keene silt loam, 2 to 6 percent slopes

Setting
Landform: Hill
Position on the Landform: Footslope
Backslope
Summit
Size of areas: About 0.5 to 141 acres

Map Unit Composition
Keene and similar components: 90 percent

Contrasting Components:
Gilpin soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

KEENE
Available water capacity: About 9.2 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 120 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loess over residuum weathered from shale and siltstone
Permeability: Moderate to slow above the bedrock
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

KEENE
Pasture and hayland suitability group: A-6
Hydric soil: No

KnB=Kensington silt loam, 2 to 6 percent slopes

Setting

Landform: Till plain
Position on the Landform: Summit

Size of areas: About 2.0 to 39 acres

Map Unit Composition
Kensington and similar components: 85 percent

Similar Components
Somewhat poorly drained soils

Contrasting Components:
Mechanicsburg soils: 15 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

KENSINGTON
Available water capacity: About 7.3 inches to a depth of 42 inches
Cation-exchange capacity of the surface layer: 6.0 to 15 meq per 100 grams
Depth class: Deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 60 inches
Depth to the top of the seasonal high water table: 1.5 to 3.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loess over till over residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Erosion control is needed when pastures are renovated.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic

systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

KENSINGTON
Pasture and hayland suitability group: A-1
Hydric soil: No

KnC=Kensington silt loam, 6 to 15 percent slopes

Setting
Landform: Till plain
Position on the Landform: Summit
Shoulder
Backslope
Size of areas: About 1.0 to 455 acres

Map Unit Composition
Kensington and similar components: 85 percent

Similar Components
Somewhat poorly drained soils

Contrasting Components:
Mechanicsburg soils: 15 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

KENSINGTON
Available water capacity: About 9.0 inches to a depth of 58 inches
Cation-exchange capacity of the surface layer: 6.0 to 15 meq per 100 grams
Depth class: Deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 60 inches
Depth to the top of the seasonal high water table: 1.5 to 3.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loess over till over residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

KENSINGTON
Pasture and hayland suitability group: A-1
Hydric soil: No

KnD=Kensington silt loam, 15 to 25 percent slopes

Setting
Landform: Till plain
Position on the Landform: Backslope
Size of areas: About 1.0 to 151 acres

Map Unit Composition
Kensington and similar components: 90 percent

Contrasting Components:
Mechanicsburg soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

KENSINGTON
Available water capacity: About 9.3 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 6.0 to 15 meq per 100 grams
Depth class: Deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 60 inches
Depth to the top of the seasonal high water table: 1.5 to 3.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained

Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loess over till over residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

KENSINGTON
Pasture and hayland suitability group: A-2
Hydric soil: No

LbA=Lobdell silt loam, 0 to 2 percent slopes, occasionally flooded

Setting
Landform: Flood plain
Position on the Landform: Step
Size of areas: About 1.5 to 180 acres

Map Unit Composition
Lobdell and similar components: 80 percent

Contrasting Components:
Holly soils: 5 percent
Orrville soils: 5 percent
Tioga soils: 5 percent
Zepernick soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 1
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

LOBDELL
Available water capacity: About 11.3 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 76 inches
Depth to the top of the seasonal high water table: 1.2 to 2.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Moderately well drained
Flooding: Occasional
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy alluvium
Permeability: Moderate or moderately rapid
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Very low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

Small grain crops may be damaged by flooding in winter and spring.

Systematic subsurface drainage will extend the period of planting and harvesting crops.

Pastureland

Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.

Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Flooding may result in damage to haul roads and increased maintenance costs.

Soil wetness may limit the use of this soil by log trucks.

Flooding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuited to homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent damage caused by flooding.

Septic Tank Absorption Fields

This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and bridges is needed to prevent the damage caused by flooding.

Component Interpretive Groups

LOBDELL
Pasture and hayland suitability group: A-5
Hydric soil: No

LnA=Lorain silt loam, 0 to 2 percent slopes

Setting
Landform: Till plain
Position on the Landform: Toeslope
Size of areas: About 1.0 to 108 acres

Map Unit Composition
Lorain and similar components: 80 percent

Similar Components
Soils with a thick, dark-colored surface layer
Soils with a surface layer formed in organic material

Contrasting Components:
Valley soils: 15 percent
Fitchville soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

LORAIN
Available water capacity: About 7.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 14 to 26 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 62 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Apparent
Ponding: Long
Depth of ponding: 0.0 to 0.5 feet
Drainage class: Very poorly drained
Flooding: None
Organic matter content in the surface layer: 4.0 to 8.0 percent
Parent material: Silty and clayey glaciolacustrine deposits
Permeability: Moderately slow to very slow
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silt loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

A combination of surface and subsurface drainage helps to remove excess water.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

Standing water can inhibit the growth of some species of seedlings by restricting root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building Sites

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

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

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of **Local Roads and Streets** is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

LORAIN
Pasture and hayland suitability group: C-2
Hydric soil: Yes

McB=Mechanicsburg silt loam, 2 to 6 percent slopes

Setting
Landform: Till plain
Position on the Landform: Summit
Size of areas: About 1.0 to 73 acres

Map Unit Composition
Mechanicsburg and similar components: 90 percent

Contrasting Components:
Kensington soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

MECHANICSBURG
Available water capacity: About 7.5 inches to a depth of 50 inches
Cation-exchange capacity of the surface layer: 10 to 20 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 4.2 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till over residuum weathered from sandstone and siltstone
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Very channery or extremely channery layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Erosion control is needed when pastures are renovated.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Building Sites

This soil is well suited to use as **Building Sites**.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

MECHANICSBURG
Pasture and hayland suitability group: A-1
Hydric soil: No

McC=Mechanicsburg silt loam, 6 to 15 percent slopes

Setting

Landform: Till plain
Position on the Landform: Summit
Shoulder
Size of areas: About 1.0 to 163 acres

Map Unit Composition

Mechanicsburg and similar components: 90 percent

Contrasting Components:
Kensington soils: 10 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

MECHANICSBURG

Available water capacity: About 7.8 inches to a depth of 50 inches
Cation-exchange capacity of the surface layer: 10 to 20 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 4.2 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till over residuum weathered from sandstone and siltstone
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very channery or extremely channery layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

MECHANICSBURG
Pasture and hayland suitability group: A-1
Hydric soil: No

MnB=Morristown silty clay loam, 0 to 8 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Summit
Shoulder
Size of areas: About 3.0 to 175 acres

Map Unit Composition
Morristown and similar components: 90 percent

Contrasting Components:
Unmined areas: 8 percent
Water: 2 percent

Map Unit Interpretive Groups
Land capability classification: 3s
Prime farmland: Not prime farmland

Soil Properties and Qualities

MORRISTOWN
Available water capacity: About 4.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 25 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Calcareous residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silty clay loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very channery or extremely channery layers

Use and Management Considerations

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the

soil may create unsafe conditions for log trucks.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

MORRISTOWN
Pasture and hayland suitability group: B-4
Hydric soil: No

MnD=Morristown silty clay loam, 8 to 25 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Backslope
Footslope
Shoulder
Summit
Size of areas: About 2.0 to 237 acres

Map Unit Composition
Morristown and similar components: 85 percent

Contrasting Components:
Highwalls: 5 percent
Unmined areas: 5 percent
Water: 5 percent

Map Unit Interpretive Groups
Land capability classification: 4s
Prime farmland: Not prime farmland

Soil Properties and Qualities

MORRISTOWN
Available water capacity: About 4.6 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 25 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Calcareous residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silty clay loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Very channery or extremely channery layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

MORRISTOWN
Pasture and hayland suitability group: B-4
Hydric soil: No

MoB=Morristown channery silty clay loam, 0 to 8 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Shoulder
Summit
Size of areas: About 3.0 to 66 acres

Map Unit Composition

Morristown and similar components: 90 percent

Contrasting Components:
Unmined areas: 8 percent
Water: 2 percent

Map Unit Interpretive Groups
Land capability classification: 4s
Prime farmland: Not prime farmland

Soil Properties and Qualities

MORRISTOWN
Available water capacity: About 4.3 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 25 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 0.5 percent
Parent material: Calcareous residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Channery silty clay loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight
Distinctive soil property: Very channery or extremely channery layers

Use and Management Considerations

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

MORRISTOWN
Pasture and hayland suitability group: E-3
Hydric soil: No

MoD=Morristown channery silty clay loam, 8 to 25 percent slopes

Setting
Landform: Surface mine on hill
Position on the Landform: Backslope
Footslope
Shoulder
Summit
Size of areas: About 2.0 to 181 acres

Map Unit Composition
Morristown and similar components: 85 percent

Contrasting Components:
Steeper areas and highwalls: 5 percent
Unmined areas: 5 percent
Water: 5 percent

Map Unit Interpretive Groups
Land capability classification: 6s
Prime farmland: Not prime farmland

Soil Properties and Qualities

MORRISTOWN
Available water capacity: About 4.3 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 25 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 0.5 percent
Parent material: Calcareous residuum of fine earth and rock fragments from coal extraction mine spoil derived from interbedded sedimentary rock
Permeability: Moderately slow
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Channery silty clay loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Very channery or extremely channery layers

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

MORRISTOWN
Pasture and hayland suitability group: E-3
Hydric soil: No

OdA=Olmsted and Valley soils, 0 to 2 percent slopes

Setting
Landform: Terrace
Till plain
Position on the Landform: Depression on terrace tread; toeslope on plain
Size of areas: About 1.0 to 25 acres

Map Unit Composition
Olmsted and similar components:
Valley and similar components:

Similar Components
Soil with less clay and more silt in the subsoil than valley

Contrasting Components:
Homeworth soils: 10 percent
Fitchville soils: 5 percent
Jimtown soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3w
Prime farmland: Not prime farmland

Soil Properties and Qualities

OLMSTED
Available water capacity: About 7.7 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 11 to 19 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 60 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Apparent
Ponding: Long
Depth of ponding: 0.0 to 1.0 feet
Drainage class: Very poorly drained
Flooding: None
Organic matter content in the surface layer: 3.0 to 8.0 percent
Parent material: Loamy glaciofluvial deposits
Permeability: Moderate or moderately rapid
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

A combination of surface and subsurface drainage helps to remove excess water.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

Standing water can inhibit the growth of some species of seedlings by restricting root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

OLMSTED
Pasture and hayland suitability group: C-1
Hydric soil: Yes

Soil Properties and Qualities

VALLEY
Available water capacity: About 8.6 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 15 to 22 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Apparent
Ponding: Brief
Depth of ponding: 0.0 to 0.5 feet
Drainage class: Poorly drained
Flooding: None
Organic matter content in the surface layer: 3.0 to 11.0 percent
Parent material: Glaciolacustrine deposits over till
Permeability: Very slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

A combination of surface and subsurface drainage helps to remove excess water.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building Sites

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

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

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

VALLEY
Pasture and hayland suitability group: C-2
Hydric soil: Yes

OmB=Omulga silt loam, 2 to 6 percent slopes

Setting
Landform: Terrace
Position on the Landform: Tread
Size of areas: About 1.0 to 138 acres

Map Unit Composition
Omulga and similar components: 90 percent

Contrasting Components:

Doles soils: 10 percent

Map Unit Interpretive Groups

Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

OMULGA

Available water capacity: About 7.0 inches to a depth of 34 inches
Cation-exchange capacity of the surface layer: 10 to 20 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 36 inches
Depth to the top of the seasonal high water table: 1.0 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over old alluvium and/or colluvium
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

A loss of soil productivity may occur following an episode of fire.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

OMULGA
Pasture and hayland suitability group: F-3
Hydric soil: No

OmC=Omulga silt loam, 6 to 12 percent slopes

Setting
Landform: Terrace
Position on the Landform: Riser
Size of areas: About 1.5 to 89 acres

Map Unit Composition
Omulga and similar components: 90 percent

Contrasting Components:
Well drained soils without a fragipan: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

OMULGA
Available water capacity: About 4.7 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 10 to 20 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 36 inches
Depth to the top of the seasonal high water table: 1.0 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over old alluvium and/or colluvium
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

A loss of soil productivity may occur following an episode of fire.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

OMULGA
Pasture and hayland suitability group: F-3
Hydric soil: No

OrA=Orrville silt loam, 0 to 2 percent slopes, occasionally flooded

Setting
Landform: Flood plain
Position on the Landform: Step
Size of areas: About 1.0 to 824 acres

Map Unit Composition
Orrville and similar components: 85 percent

Similar Components
Soils w/ thin layers having more than 15% gravel

Contrasting Components:
Tioga soils: 10 percent
Holly soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

ORRVILLE
Available water capacity: About 9.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 20 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: Occasional
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Loamy alluvium
Permeability: Moderate or moderately rapid
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

Small grain crops may be damaged by flooding in winter and spring.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.

Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Flooding may result in damage to haul roads and increased maintenance costs.

Soil wetness may limit the use of this soil by log trucks.

Flooding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuited to homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent damage caused by flooding.

Septic Tank Absorption Fields

This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and bridges is needed to prevent the damage caused by flooding.

Component Interpretive Groups

ORRVILLE
Pasture and hayland suitability group: C-3
Hydric soil: No

Pg=Pits, gravel

Setting
Landform: Till plain
Terrace
Size of areas: About 0.5 to 89 acres

Map Unit Composition
Pits and similar components: 85 percent

Contrasting Components:
Reclaimed areas: 5 percent
Spoil piles: 5 percent
Water: 5 percent

PITS, GRAVEL
Definition: Open excavations from which soil, sand or gravel are being removed, exposing the underlying substratum material. Also includes spoil from grading and washing processes, and inactive pits that are not reclaimed.

Use and Management Considerations
Onsite investigation is needed to determine the suitability for specific uses.

RaB=Rainsboro silt loam, 2 to 6 percent slopes

Setting
Landform: Terrace
Position on the Landform: Tread
Size of areas: About 1.5 to 63 acres

Map Unit Composition
Rainsboro and similar components: 85 percent

Contrasting Components:
Calcutta soils: 5 percent
Doles soils: 5 percent
Fredericktown soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

RAINSBORO
Available water capacity: About 5.4 inches to a depth of 26 inches
Cation-exchange capacity of the surface layer: 6.0 to 11 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 20 to 30 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over outwash
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium

Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Burning may destroy organic matter.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

RAINSBORO
Pasture and hayland suitability group: F-3
Hydric soil: No

RaC2=Rainsboro silt loam, 6 to 12 percent slopes, eroded

Setting
Landform: Terrace
Position on the Landform: Riser
Size of areas: About 0.5 to 50 acres

Map Unit Composition
Rainsboro and similar components: 80 percent

Contrasting Components:
Fredericktown soils: 10 percent
Omulga soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

RAINSBORO
Available water capacity: About 5.3 inches to a depth of 25 inches
Cation-exchange capacity of the surface layer: 6.0 to 11 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 20 to 30 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over outwash
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight
The RaC2 map unit has silty residual material below depths of 60 inches that is not typical of the series. This should not affect use and management of the map unit for most purposes.

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Burning may destroy organic matter.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

RAINSBORO
Pasture and hayland suitability group: F-3
Hydric soil: No

RbC=Rainsboro silt loam, 6 to 12 percent slopes, stony

Setting
Landform: Terrace
Position on the Landform: Riser
Size of areas: About 2.0 to 15 acres

Map Unit Composition
Rainsboro and similar components: 80 percent
Contrasting Components:
Fredericktown soils: 10 percent
Omulga soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

RAINSBORO
Available water capacity: About 5.2 inches to a depth of 28 inches
Cation-exchange capacity of the surface layer:

6.0 to 11 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 20 to 30 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 2.0 percent
Parent material: Loess over outwash
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

The RbC map unit has a higher rock fragment content in the surface, a lower rock fragment content in the substratum, and a thinner argilic horizon than typical for the series. This should not adversely affect the use and management of the map unit for most purposes.

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Large stones restrict the use of most farm machinery.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Large stones on the surface may restrict the operation of some farm machinery during pasture renovation.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

A loss of soil productivity may occur following an episode of fire.

Building Sites

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

and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

RAINSBORO
Pasture and hayland suitability group: F-3
Hydric soil: No

ReA=Ravenna silt loam, 0 to 2 percent slopes

Setting
Landform: Till plain
Position on the Landform: Toeslope
Summit
Size of areas: About 1.0 to 70 acres

Map Unit Composition
Ravenna and similar components: 90 percent

Contrasting Components:
Canfield soils: 5 percent
Wetter soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

RAVENNA
Available water capacity: About 4.4 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 14 to 30 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

RAVENNA
Pasture and hayland suitability group: C-1
Hydric soil: No

ReB=Ravenna silt loam, 2 to 6 percent slopes

Setting
Landform: Till plain
Position on the Landform: Shoulder
Footslope
Backslope
Summit
Size of areas: About 0.5 to 120 acres

Map Unit Composition
Ravenna and similar components: 90 percent

Contrasting Components:
Canfield soils: 5 percent
Wetter soils: 5 percent

Map Unit Interpretive Groups

Land capability classification: 2e
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

RAVENNA

Available water capacity: About 4.7 inches to a depth of 25 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 14 to 30 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building

site development and structures may need special design to avoid damage from wetness.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

RAVENNA
Pasture and hayland suitability group: C-1
Hydric soil: No

RhD=Richland silt loam, 15 to 25 percent slopes, stony

Setting
Landform: Hill
Position on the Landform: Footslope
Size of areas: About 3.0 to 59 acres

Map Unit Composition
Richland and similar components: 85 percent

Contrasting Components:
Coshocton soils: 5 percent
Guernsey soils: 5 percent
Westmoreland soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

RICHLAND
Available water capacity: About 7.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 2.0 to 3.5 feet
Water table kind: Apparent
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Colluvium derived from interbedded sedimentary rock
Permeability: Moderate
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Large stones on the surface may restrict the operation of some farm machinery during pasture renovation.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

RICHLAND
Pasture and hayland suitability group: A-2
Hydric soil: No

RhE=Richland silt loam, 25 to 40 percent slopes, stony

Setting
Landform: Hill
Position on the Landform: Footslope
Size of areas: About 3.0 to 68 acres

Map Unit Composition
Richland and similar components: 85 percent

Contrasting Components:
Coshocton soils: 5 percent
Guernsey soils: 5 percent
Westmoreland soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 6e
Prime farmland: Not prime farmland

Soil Properties and Qualities

RICHLAND
Available water capacity: About 7.2 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 2.0 to 3.5 feet
Water table kind: Apparent
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0

to 3.0 percent
Parent material: Colluvium derived from interbedded sedimentary rock
Permeability: Moderate
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

The slope may restrict the use of some farm equipment.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

Large stones on the surface may restrict the operation of some farm machinery during pasture renovation.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

RICHLAND
Pasture and hayland suitability group: A-3
Hydric soil: No

RsB=Rittman silt loam, 2 to 6 percent slopes

Setting
Landform: Till plain
Position on the Landform: Summit
Shoulder
Backslope
Size of areas: About 1.0 to 338 acres

Map Unit Composition
Rittman and similar components: 90 percent

Contrasting Components:
Wadsworth soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

RITTMAN
Available water capacity: About 3.8 inches to a depth of 21 inches
Cation-exchange capacity of the surface layer: 12 to 25 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 36 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above the fragipan; slow in the fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

RITTMAN
Pasture and hayland suitability group: F-3
Hydric soil: No

RsC=Rittman silt loam, 6 to 12 percent slopes

Setting
Landform: Till plain
Position on the Landform: Backslope
Shoulder
Summit
Size of areas: About 0.5 to 254 acres

Map Unit Composition
Rittman and similar components: 90 percent

Contrasting Components:
Well drained soils without a fragipan: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

RITTMAN
Available water capacity: About 4.2 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 12 to 25 meq per 100 grams
Depth class: Very deep

Depth to root restrictive feature: Fragipan: 18 to 36 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above the fragipan; slow in the fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

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

Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

RITTMAN
Pasture and hayland suitability group: F-3
Hydric soil: No

RsD2=Rittman silt loam, 12 to 20 percent slopes, eroded

Setting
Landform: Till plain
Position on the Landform: Backslope
Size of areas: About 1.0 to 113 acres

Map Unit Composition
Rittman and similar components: 90 percent

Contrasting Components:
Well drained soils without a fragipan: 10 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

RITTMAN
Available water capacity: About 3.4 inches to a depth of 20 inches
Cation-exchange capacity of the surface layer: 12 to 25 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 36 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above the fragipan; slow in the fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

RITTMAN
Pasture and hayland suitability group: F-3
Hydric soil: No

TeB=Teegarden silt loam, 2 to 6 percent slopes

Setting
Landform: Till plain
Position on the Landform: Summit
Shoulder
Backslope
Size of areas: About 1.0 to 53 acres

Map Unit Composition
Teegarden and similar components: 90 percent

Contrasting Components:
Somewhat poorly drained soils without a fragipan: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

TEEGARDEN
Available water capacity: About 4.1 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 5.0 to 13 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Bedrock (paralithic): 60 to 120 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loess over till over residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the fragipan; slow in the fragipan
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

TEEGARDEN
Pasture and hayland suitability group: F-3
Hydric soil: No

TeC=Teegarden silt loam, 6 to 15 percent slopes

Setting
Landform: Till plain
Position on the Landform: Backslope
Shoulder
Summit
Footslope
Size of areas: About 0.5 to 271 acres

Map Unit Composition
Teegarden and similar components: 90 percent

Contrasting Components:
Gilpin soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

TEEGARDEN
Available water capacity: About 4.5 inches to a depth of 25 inches
Cation-exchange capacity of the surface layer: 5.0 to 13 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Bedrock (paralithic): 60 to 120 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loess over till over residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the fragipan; slow in the fragipan
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

TEEGARDEN
Pasture and hayland suitability group: F-3
Hydric soil: No

TeC2=Teegarden silt loam, 6 to 15 percent slopes, eroded

Setting

Landform: Till plain
Position on the Landform: Shoulder
Backslope
Size of areas: About 1.5 to 372 acres

Map Unit Composition

Teegarden and similar components: 90 percent

Contrasting Components:
Gilpin soils: 10 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

TEEGARDEN
Available water capacity: About 4.5 inches to a depth of 25 inches
Cation-exchange capacity of the surface layer: 5.0 to 13 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Bedrock (paralithic): 60 to 120 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loess over till over residuum weathered from interbedded sedimentary rock
Permeability: Moderate above the fragipan; slow in the fragipan
Potential frost action: Moderate
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

TEEGARDEN
Pasture and hayland suitability group: F-3
Hydric soil: No

ToA=Tioga loam, 0 to 2 percent slopes, occasionally flooded

Setting
Landform: Flood plain
Position on the Landform: Step
Size of areas: About 0.5 to 614 acres

Map Unit Composition
Tioga and similar components: 90 percent

Contrasting Components:
Orrville soils: 5 percent
Poorly drained soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 1
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

TIOGA
Available water capacity: About 8.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 12 to 28 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water

table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: Occasional
Organic matter content in the surface layer: 2.0 to 6.0 percent
Parent material: Loamy alluvium
Permeability: Moderate to rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

Small grain crops may be damaged by flooding in winter and spring.

Pastureland

Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.

Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Woodland

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Flooding may result in damage to haul roads and increased maintenance costs.

Flooding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuited to homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent damage caused by flooding.

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

Septic Tank Absorption Fields

This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Special design of roads and bridges is needed to prevent the damage caused by flooding.

Component Interpretive Groups

TIOGA
Pasture and hayland suitability group: A-5
Hydric soil: No

Ua=Udorthents, loamy, 2 to 25 percent slopes

Setting
Landform: Hill
Terrace
Till plain
Size of areas: About 3.0 to 120 acres

Map Unit Composition
Udorthents and similar components: 85 percent

Contrasting Components:
Areas that have not been excavated: 10 percent
Urban land: 5 percent

Soil Properties and Qualities

UDORTHENTS

Available water capacity: About 5.5 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: ---
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6 feet
Ponding: None
Drainage class: Somewhat excessively drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 5.0 percent
Parent material:
Permeability: Slow in surface layer; slow to moderately rapid below surface layer
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight
Distinctive soil property: Udorthents have been randomly altered by construction activities in developing major highway right-of-ways or commercial areas. Also included are rail yards in rural areas and small landfills and gravel pits that have been closed and reclaimed.

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low pH in the soil may cause a nutrient imbalance in seedlings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

UDORTHENTS

Pasture and hayland suitability group: B-1
Hydric soil: Unranked

Ub=Udorthents, refuse substratum, 2 to 25 percent slopes

Setting

Landform: Till plain
Terrace
Hill
Size of areas: About 2.0 to 170 acres

Map Unit Composition

Udorthents and similar components: 90 percent

Contrasting Components:
Areas that have not been excavated: 10 percent

Soil Properties and Qualities

UDORTHENTS
Available water capacity: About 2.2 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: ---
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6 feet
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 4.0 percent
Parent material:
Permeability: Slow in surface layer; slow to moderately rapid below surface layer
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Channery loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight
Distinctive soil property: These areas were mostly very deep, excessively drained to moderately well drained soils used as sites for sanitary landfills. The soils have been cut, filled and graded. About 2 feet of soil material is used to cap compacted refuse and other buried debris. Due to extensive mixing of the unconsolidated soil material, soil texture can be highly variable and soil profile development is absent or weak.

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low pH in the soil may cause a nutrient imbalance in seedlings.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

UDORTHENTS
Pasture and hayland suitability group: A-6
Hydric soil: Unranked

Uc=Udorthents-Pits complex, 0 to 70 percent slopes

Setting
Landform: Till plain
Terrace
Hill
Size of areas: About 0.5 to 166 acres

Map Unit Composition
Udorthents and similar components: 60 percent
Pits and similar components: 30 percent

Contrasting Components:
Moderately deep and deep soils: 5 percent
Water: 5 percent

Soil Properties and Qualities

UDORTHENTS
Available water capacity: About 5.5 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: ---
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6 feet
Ponding: None
Drainage class: Somewhat excessively drained
Flooding: None
Organic matter content in the surface layer: 0.0 to 5.0 percent
Parent material:
Permeability: Slow in surface layer; slow to moderately rapid below surface layer
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery sandy loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight
Distinctive soil property: Udorthents are unconsolidated soil materials that have been excavated, mixed and redeposited as spoil in active or recent surface mining operations. They commonly are composed of a high content of rock fragments poorly mixed with weathered and non-weathered fine-earth materials. The spoil is dumped in cone-shaped or ridged piles 10 to 70 feet high to the side of the mining pit being dug.

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low pH in the soil may cause a nutrient imbalance in seedlings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

UDORTHENTS
Pasture and hayland suitability group: E-2
Hydric soil: Unranked

PITS
Definition: Pits are the nearly level areas between Udorthents and the vertical high walls created during surface mining operations.

Use and Management Considerations

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

Component Interpretive Groups

PITS
Pasture and hayland suitability group: Not rated
Hydric soil: Unranked

UkC2=Upshur-Berks complex, 6 to 15 percent slopes, eroded

Setting
Landform: Hill
Position on the Landform: Summit
Backslope
Shoulder
Size of areas: About 1.5 to 101 acres

Map Unit Composition
Upshur and similar components: 70 percent
Berks and similar components: 20 percent

Contrasting Components:
Guernsey soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 4e
Prime farmland: Not prime farmland

Soil Properties and Qualities

UPSHUR
Available water capacity: About 5.4 inches to a depth of 44 inches
Cation-exchange capacity of the surface layer: 14 to 20 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 3.7 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum weathered from clayey shale
Permeability: Moderately slow or slow above the bedrock
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silty clay loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.

Incorporating crop residue or other organic matter into the surface layer increases the

capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

Because of the content of clay, this soil becomes sticky when wet. The stickiness increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Because of the stickiness of the soil, the use of equipment for site preparation is restricted to the drier periods.

Burning may destroy organic matter.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

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

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

UPSHUR
Pasture and hayland suitability group: A-6
Hydric soil: No

Soil Properties and Qualities

BERKS
Available water capacity: About 1.9 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The rooting depth of crops is restricted by bedrock.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Erosion has removed part of the surface soil, and the remaining surface soil is less productive and more difficult to manage.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

Because of the moderate content of rock fragments, excavation may be more difficult and cutbanks may become unstable. Excavations and trench walls may require reinforcement.

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The high content of large stones affects the ease of excavation and grading.

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: F-1
Hydric soil: No

UkD2=Upshur-Berks complex, 15 to 25 percent slopes, eroded

Setting
Landform: Hill
Position on the Landform: Backslope
Size of areas: About 2.0 to 82 acres

Map Unit Composition
Upshur and similar components: 70 percent
Berks and similar components: 20 percent

Contrasting Components:
Guernsey soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 6e
Prime farmland: Not prime farmland

Soil Properties and Qualities

UPSHUR
Available water capacity: About 7.0 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 14 to 20 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum weathered from clayey shale
Permeability: Moderately slow or slow above the bedrock
Potential frost action: High

Shrink-swell potential: High
Surface layer texture Silty clay loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

Because of the content of clay, this soil becomes sticky when wet. The stickiness increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Because of the stickiness of the soil, the use of equipment for site preparation is restricted to the drier periods.

Burning may destroy organic matter.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

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

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

UPSHUR
Pasture and hayland suitability group: A-2
Hydric soil: No

Soil Properties and Qualities

BERKS
Available water capacity: About 1.7 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

Bedrock may interfere with the construction of haul roads and log landing sites.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: F-1
Hydric soil: No

UkE2=Upshur-Berks complex, 25 to 40 percent slopes, eroded

Setting
Landform: Hill
Position on the Landform: Backslope
Size of areas: About 5.0 to 222 acres

Map Unit Composition
Upshur and similar components: 70 percent
Berks and similar components: 20 percent
Contrasting Components:
Guernsey soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 7e
Prime farmland: Not prime farmland

Soil Properties and Qualities

UPSHUR
Available water capacity: About 6.0 inches to a depth of 50 inches
Cation-exchange capacity of the surface layer: 14 to 20 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 72 inches
Depth to the top of the seasonal high water table: Greater than 4.2 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 0.5 to 3.0 percent
Parent material: Residuum weathered from clayey shale
Permeability: Moderately slow or slow above the bedrock
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silty clay loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

The slope may restrict the use of some farm equipment.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

Because of the content of clay, this soil becomes sticky when wet. The stickiness increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, the use of mechanical planting equipment is not practical.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Because of the stickiness of the soil, the use of equipment for site preparation is restricted to the drier periods.

Burning may destroy organic matter.

Building Sites

The hazard of slipppage increases the risk of mass soil movement. Sites subject to slippage are generally unsuited to building site development.

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

Septic Tank Absorption Fields

Because of the high potential for slippage, this soil is generally unsuited to septic tank absorption fields.

Local Roads and Streets

Because of the high potential for slippage, this soil is generally unsuited to use for local roads and streets.

Component Interpretive Groups

UPSHUR
Pasture and hayland suitability group: B-2
Hydric soil: No

Soil Properties and QualitieS

BERKS
Available water capacity: About 1.7 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock

Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

The slope may restrict the use of some farm equipment.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: F-2
Hydric soil: No

Ur=Urban land, 0 to 15 percent slopes

Setting
Landform: Till plain
Terrace
Hill
Size of areas: About 5.0 to 410 acres

Map Unit Composition
Urban land and similar components: 90 percent

Contrasting Components:
Natural soils not disturbed by excavation or construction: 10 percent

Map Unit Interpretive Groups
Land capability classification: None assigned
Prime farmland: Not prime farmland

URBAN LAND
Definition: Urban land is a miscellaneous area where the original soils have been removed or altered during excavation and construction activities, often resulting in random soil mixing. The soil surface is largely covered by streets, structures and other engineered installations. Generally the infiltration of precipitation on urban land is very limited.

Use and Management Considerations
Onsite investigation is needed to determine the suitability for specific uses.

Component Interpretive Groups

URBAN LAND
Pasture and hayland suitability group: Not rated
Hydric soil: Unranked

UtB=Urban land-Canfield complex, 2 to 6 percent slopes

Setting
Landform: Till plain
Position on the Landform: Summit
Size of areas: About 2.0 to 1,001 acres

Map Unit Composition
Urban land and similar components: 60 percent
Canfield and similar components: 30 percent

Contrasting Components:
Ravenna soils: 5 percent
Zepernick soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: None assigned
Prime farmland: Not prime farmland

URBAN LAND
Definition: Urban land is a miscellaneous area where the original soils have been removed or altered during excavation and construction activities, often resulting in random soil mixing. The soil surface is largely covered by streets, structures and other engineered installations. Generally the infiltration of precipitation on urban land is very limited.

Use and Management Considerations
Onsite investigation is needed to determine the suitability for specific uses.

Component Interpretive Groups

URBAN LAND
Pasture and hayland suitability group: Not rated
Hydric soil: Unranked

Soil Properties and Qualities

CANFIELD
Available water capacity: About 5.0 inches to a depth of 28 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Depth to the top of the seasonal high water table: 1.2 to 2.3 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

CANFIELD
Pasture and hayland suitability group: Not rated
Hydric soil: No

UtC=Urban land-Canfield complex, 6 to 12 percent slopes

Setting
Landform: Till plain
Position on the Landform: Backslope
Shoulder
Size of areas: About 2.0 to 436 acres

Map Unit Composition
Urban land and similar components: 60 percent
Canfield and similar components: 30 percent

Contrasting Components:
Steeper areas: 10 percent

Map Unit Interpretive Groups
Land capability classification: None assigned
Prime farmland: Not prime farmland

URBAN LAND
Definition: Urban land is a miscellaneous area where the original soils have been removed or altered during excavation and construction activities, often resulting in random soil mixing. The soil surface is largely covered by streets, structures and other engineered installations. Generally the infiltration of precipitation on urban land is very limited.

Use and Management Considerations
Onsite investigation is needed to determine the suitability for specific uses.

Component Interpretive Groups

URBAN LAND
Pasture and hayland suitability group: Not rated
Hydric soil: Unranked

Soil Properties and Qualities

CANFIELD
Available water capacity: About 4.3 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Depth to the top of the seasonal high water table: 1.2 to 2.3 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy till
Permeability: Moderate above fragipan; slow in fragipan
Potential frost action: High
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Building Sites
The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

The moderate permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

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

Component Interpretive Groups

CANFIELD
Pasture and hayland suitability group: Not rated
Hydric soil: No

UvB=Urban land-Chili complex, 2 to 6 percent slopes

Setting

Landform: Stream terrace
Kame
Position on the Landform: Tread on terrace summit and shoulder on kame
Size of areas: About 5.0 to 503 acres

Map Unit Composition

Urban land and similar components: 60 percent
Chili and similar components: 30 percent

Contrasting Components:

Conotton soils: 5 percent
Steeper areas: 5 percent

Map Unit Interpretive Groups

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

URBAN LAND

Definition: Urban land is a miscellaneous area where the original soils have been removed or altered during excavation and construction activities, often resulting in random soil mixing. The soil surface is largely covered by streets, structures and other engineered installations. Generally the infiltration of precipitation on urban land is very limited.

Use and Management Considerations

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

Component Interpretive Groups

CANFIELD
Pasture and hayland suitability group: Not rated
Hydric soil: Unranked

Soil Properties and Qualities

CHILI
Available water capacity: About 6.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 16 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Glaciofluvial outwash
Permeability: Moderately rapid
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Building Sites

Because of the high content of sand or gravel in the soil, the resistance to sloughing is reduced in shallow excavations and cutbanks are susceptible to caving.

This soil is well suited to use as **Building Sites**.

Septic Tank Absorption Fields

The excessive permeability limits the proper treatment of the effluent from septic systems in areas of this soil. The poorly treated effluent may pollute the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Component Interpretive Groups

CHILI
Pasture and hayland suitability group: Not rated
Hydric soil: No

VaA=Valley silt loam, 0 to 2 percent slopes

Setting
Landform: Till plain
Position on the Landform: Footslope
Toeslope
Size of areas: About 1.0 to 113 acres

Map Unit Composition
Valley and similar components: 80 percent

Similar Components
Soils with less clay and more silt in the subsoil

Contrasting Components:
Lorain soils: 10 percent
Fitchville soils: 5 percent
Olmsted soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3w
Prime farmland: Not prime farmland

Soil Properties and Qualities

VALLEY
Available water capacity: About 8.6 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 15 to 22 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Apparent
Ponding: Brief
Depth of ponding: 0.0 to 0.5 feet
Drainage class: Poorly drained
Flooding: None
Organic matter content in the surface layer: 3.0 to 11.0 percent
Parent material: Glaciolacustrine deposits over till
Permeability: Very slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

A combination of surface and subsurface drainage helps to remove excess water.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building Sites

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

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

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

VALLEY
Pasture and hayland suitability group: C-2
Hydric soil: Yes

VbA=Valley silty clay loam, 0 to 2 percent slopes

Setting
Landform: Till plain
Position on the Landform: Footslope
Toeslope
Size of areas: About 1.5 to 25 acres

Map Unit Composition
Valley and similar components: 80 percent

Similar Components
Soils with less clay and more silt in the subsoil

Contrasting Components:
Lorain soils: 10 percent
Fitchville soils: 5 percent
Olmsted soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3w
Prime farmland: Not prime farmland

Soil Properties and Qualities

VALLEY
Available water capacity: About 8.7 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 15 to 22 meq per 100 grams
Depth class: Very deep

Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Apparent
Ponding: Brief
Depth of ponding: 0.0 to 0.5 feet
Drainage class: Poorly drained
Flooding: None
Organic matter content in the surface layer: 3.0 to 11.0 percent
Parent material: Glaciolacustrine deposits over till
Permeability: Very slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silty clay loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

A combination of surface and subsurface drainage helps to remove excess water.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

A loss of soil productivity may occur following an episode of fire.

Building Sites

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

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

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

VALLEY
Pasture and hayland suitability group: C-2
Hydric soil: Yes

VcA=Valley-Lorain silt loams, 0 to 2 percent slopes

Setting
Landform: Till plain
Position on the Landform: Footslope
Toeslope
Size of areas: About 1.5 to 166 acres

Map Unit Composition
Valley and similar components: 45 percent
Lorain and similar components: 35 percent

Similar Components
Soils with less clay and more silt in the subsoil

Contrasting Components:
Fitchville soils: 10 percent
Ravenna soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3w
Prime farmland: Not prime farmland

Soil Properties and Qualities

VALLEY
Available water capacity: About 8.6 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 15 to 22 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Apparent
Ponding: Brief
Depth of ponding: 0.0 to 0.5 feet
Drainage class: Poorly drained
Flooding: None
Organic matter content in the surface layer: 3.0 to 11.0 percent
Parent material: Glaciolacustrine deposits over till
Permeability: Very slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

A combination of surface and subsurface drainage helps to remove excess water.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building Sites

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

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

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

VALLEY
Pasture and hayland suitability group: C-2
Hydric soil: Yes

Soil Properties and Qualities

LORAIN
Available water capacity: About 7.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 14 to 26 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 62 inches
Depth to the top of the seasonal high water table: 0.0 to 0.5 feet
Water table kind: Apparent
Ponding: Long
Depth of ponding: 0.0 to 0.5 feet
Drainage class: Very poorly drained
Flooding: None
Organic matter content in the surface layer: 4.0 to 8.0 percent
Parent material: Silty and clayey glaciolacustrine deposits
Permeability: Moderately slow to very slow
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silt loam
Potential for surface runoff: Negligible
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

A combination of surface and subsurface drainage helps to remove excess water.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

Standing water can inhibit the growth of some species of seedlings by restricting root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Ponding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building Sites

Because water tends to pond on this soil, the period when excavations can be made may be restricted and intensive construction site development and building maintenance may be needed. The soil is generally unsuited to building site development.

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

Septic Tank Absorption Fields

Because of ponding, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Ponding affects the ease of excavation and grading and limits the bearing capacity of this soil.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

LORAIN
Pasture and hayland suitability group: C-2
Hydric soil: Yes

VnB=Vandergrift silt loam, 2 to 6 percent slopes

Setting
Landform: Hill
Position on the Landform: Backslope
Footslope
Size of areas: About 1.5 to 214 acres

Map Unit Composition
Vandergrift and similar components: 90 percent

Similar Components
Moderately deep soils

Contrasting Components:
Gilpin soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 2e
Prime farmland: All areas are prime farmland

Soil Properties and Qualities

VANDERGRIFT
Available water capacity: About 7.4 inches to a depth of 56 inches
Cation-exchange capacity of the surface layer: 9.5 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 80 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Calcareous and noncalcareous interbedded shale and siltstone residuum
Permeability: Slow above the bedrock
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.

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

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

VANDERGRIFT
Pasture and hayland suitability group: A-6
Hydric soil: No

VnC=Vandergrift silt loam, 6 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Backslope
Footslope
Size of areas: About 1.5 to 80 acres

Map Unit Composition
Vandergrift and similar components: 90 percent

Similar Components
Moderately deep soils

Contrasting Components:
Gilpin soils: 10 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

VANDERGRIFT
Available water capacity: About 7.9 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 9.5 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 80 inches
Depth to the top of the seasonal high water table: 1.0 to 2.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Calcareous and noncalcareous interbedded shale and siltstone residuum
Permeability: Slow above the bedrock
Potential frost action: High
Shrink-swell potential: High
Surface layer texture Silt loam
Potential for surface runoff: Very high
Wind erosion hazard: Slight
Distinctive soil property: Clayey layers

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

The rooting depth of crops may be restricted by the high clay content.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Subsurface drainage helps to lower the seasonal high water table.

Including deep-rooted cover crops in the rotation is important for improving soil structure and providing pathways in the clayey subsoil to facilitate the movement of water into subsurface drains.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

The stickiness of the soil reduces the efficiency of mechanical planting equipment.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Severe shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures generally require special design and construction techniques or intensive maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

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

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the

effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

VANDERGRIFT
Pasture and hayland suitability group: A-6
Hydric soil: No

W=Water

Setting
Landform: None assigned
Size of areas: About 0.5 to 396 acres

Map Unit Composition
Water and similar components: 100 percent

WATER
Definition: Water includes creeks, rivers, lakes, and ponds that are water bodies in most years at least during the period warm enough for plants to grow; most areas persist throughout the year.

WaA=Wadsworth silt loam, 0 to 2 percent slopes

Setting
Landform: Till plain
Position on the Landform: Summit
Toeslope
Size of areas: About 1.5 to 30 acres

Map Unit Composition
Wadsworth and similar components: 90 percent

Contrasting Components:
Rittman soils: 5 percent
Wetter soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

WADSWORTH
Available water capacity: About 4.2 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 14 to 20 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Till
Permeability: Moderately slow above fragipan; slow or very slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture

stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

WADSWORTH
Pasture and hayland suitability group: C-1
Hydric soil: No

WaB=Wadsworth silt loam, 2 to 6 percent slopes

Setting
Landform: Till plain
Position on the Landform: Shoulder
Summit
Backslope
Footslope
Size of areas: About 1.0 to 91 acres

Map Unit Composition
Wadsworth and similar components: 90 percent

Contrasting Components:
Rittman soils: 5 percent
Wetter soils: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

WADSWORTH
Available water capacity: About 4.7 inches to a depth of 27 inches
Cation-exchange capacity of the surface layer: 14 to 20 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Fragipan: 18 to 30 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Perched
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Till
Permeability: Moderately slow above fragipan; slow or very slow in fragipan
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Grassed waterways can be used in some areas to slow and direct the movement of water and reduce erosion.

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Incorporating crop residue or other organic matter into the surface layer increases the capacity of the soil to hold and retain moisture. Plants may suffer from moisture stress because of the limited available water capacity.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

The movement of water into subsurface drains is restricted. Drainage guides can be used to determine tile spacing requirements.

Subsurface drainage helps to lower the seasonal high water table.

The rooting depth of crops is restricted by dense soil material.

Pastureland

Erosion control is needed when pastures are renovated.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

Component Interpretive Groups

WADSWORTH
Pasture and hayland suitability group: C-1
Hydric soil: No

WkE=Westmoreland-Berks complex, 25 to 40 percent slopes

Setting

Landform: Hill
Position on the Landform: Backslope
Size of areas: About 2.0 to 179 acres

Map Unit Composition

Westmoreland and similar components: 55 percent
Berks and similar components: 35 percent
Contrasting Components:
Hazleton: 10 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

WESTMORELAND
Available water capacity: About 6.6 inches to a depth of 50 inches
Cation-exchange capacity of the surface layer: 15 to 25 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 120 inches
Depth to the top of the seasonal high water table: Greater than 4.2 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loamy colluvium and residuum weathered from sandstone and siltstone
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

The slope may restrict the use of some farm equipment.

Removing excess water can reduce the possibility of soil slippage.

Slippage may cause uneven slopes, which can affect equipment use and the grazing patterns of animals.

Slips may affect fencing patterns and increase the cost of maintaining fences and buried water pipelines.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Burning may destroy organic matter.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

WESTMORELAND
Pasture and hayland suitability group: A-3
Hydric soil: No

Soil Properties and Qualities

BERKS
Available water capacity: About 1.8 inches to a depth of 24 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (lithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 2.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid

above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

The slope may restrict the use of some farm equipment.

Plants may suffer moisture stress during the drier summer months because of the limited available water capacity.

Using a system of conservation tillage when pastures are renovated conserves soil moisture.

This soil provides poor summer pasture.

The rooting depth of plants may be restricted by bedrock.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Stones restrict the use of equipment during site preparation for planting or seeding.

Building Sites

The depth to bedrock and hardness of the bedrock greatly reduce the ease of excavation and increase the difficulty in constructing foundations and installing utilities.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Because of the moderate content of rock fragments, excavation may be more difficult and cutbanks may become unstable. Excavations and trench walls may require reinforcement.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

The depth to bedrock and hardness of the bedrock reduce the ease of excavation and increase the difficulty of constructing roads.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The high content of large stones affects the ease of excavation and grading.

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: F-2
Hydric soil: No

WkF=Westmoreland-Berks complex, 40 to 70 percent slopes

Setting

Landform: Hill
Position on the Landform: Backslope
Size of areas: About 0.5 to 1,354 acres

Map Unit Composition

Westmoreland and similar components: 55 percent
Berks and similar components: 35 percent
Contrasting Components:
Hazleton: 10 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

WESTMORELAND
Available water capacity: About 7.8 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 150 to 230 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 120 inches
Depth to the top of the seasonal high water table: Greater than 6.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 70.0 to 99.0 percent
Parent material: Loamy colluvium and residuum weathered from sandstone and siltstone
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Slightly decomposed plant material
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The potential for slippage may interfere with the construction and use of haul roads and log landings and creates unsafe operating conditions.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Building Sites

The potential for slippage may interfere with excavation and building site development. For foundations and other structures and buried utility lines, special design and construction may be needed to help prevent structural damage caused by slippage.

The engineering properties of this soil are generally unfavorable for supporting heavy loads. Special design of footings and foundations may be needed to prevent the structural damage caused by low soil strength.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

Slippage may result in damage to effluent distribution lines and increased maintenance costs.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Slippage may result in damage to roads and increase the cost of design, construction, and maintenance.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

WESTMORELAND
Pasture and hayland suitability group: H-1
Hydric soil: No

Soil Properties and Qualities

BERKS
Available water capacity: About 1.6 inches to a depth of 22 inches
Cation-exchange capacity of the surface layer: 5.0 to 15 meq per 100 grams
Depth class: Moderately deep
Depth to root restrictive feature: Bedrock (paralithic): 20 to 40 inches
Depth to the top of the seasonal high water table: Greater than 1.8 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Residuum weathered from interbedded sedimentary rock
Permeability: Moderate or moderately rapid above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Channery silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

This soil is generally not recommended for pasture.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

Because of the slope, use of equipment to prepare this site for planting and seeding is not practical.

Because of the slope, the use of mechanical planting equipment is not practical.

Rock fragments in the soil obstruct the use of mechanical planting equipment.

Stones restrict the use of equipment during site preparation for planting or seeding.

Burning may destroy organic matter and increase sedimentation.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

The nature and depth of the soft bedrock in this soil reduces the ease of excavation and increases the difficulty in constructing foundations and installing utilities.

Septic Tank Absorption Fields

Because of the limited depth to bedrock, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Component Interpretive Groups

BERKS
Pasture and hayland suitability group: H-1
Hydric soil: No

WmC=Westmoreland-Coshocton silt loams, 8 to 15 percent slopes

Setting
Landform: Hill
Position on the Landform: Footslope
Shoulder
Summit
Size of areas: About 0.5 to 605 acres

Map Unit Composition
Westmoreland and similar components: 55 percent
Coshocton and similar components: 30 percent

Contrasting Components:
Berks soils: 5 percent
Guernsey soils: 5 percent
Hazleton: 5 percent

Map Unit Interpretive Groups
Land capability classification: 3e
Prime farmland: Not prime farmland

Soil Properties and Qualities

WESTMORELAND
Available water capacity: About 7.2 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 15 to 25 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 120 inches
Depth to the top of the seasonal high water table: Greater than 5.0 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loamy colluvium and residuum weathered from sandstone and siltstone
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

WESTMORELAND
Pasture and hayland suitability group: A-1
Hydric soil: No

Soil Properties and Qualities

COSHOCTON
Available water capacity: About 9.0 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 120 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

Using a system of conservation tillage and planting cover crops reduce the runoff rate and help to minimize soil loss by erosion.

The root system of winter grain crops may be damaged by frost action.

Controlling traffic can minimize soil compaction.

Maintaining or increasing the content of organic matter in the soil helps to prevent crusting, improves tilth, and increases the rate of water infiltration.

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope may restrict the use of some mechanical planting equipment.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs may be required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines and seepage of poorly treated effluent is a concern.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

COSHOCTON
Pasture and hayland suitability group: A-6
Hydric soil: No

WmD=Westmoreland-Coshocton silt loams, 15 to 25 percent slopes

Setting

Landform: Hill
Position on the Landform: Backslope
Shoulder
Size of areas: About 0.5 to 21 acres

Map Unit Composition

Westmoreland and similar components: 55 percent
Coshocton and similar components: 30 percent

Contrasting Components:
Berks soils: 5 percent
Guernsey soils: 5 percent
Hazleton: 5 percent

Map Unit Interpretive Groups

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

Soil Properties and Qualities

WESTMORELAND

Available water capacity: About 7.5 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 15 to 25 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 120 inches
Depth to the top of the seasonal high water table: Greater than 5.4 feet
Ponding: None
Drainage class: Well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 4.0 percent
Parent material: Loamy colluvium and residuum weathered from sandstone and siltstone
Permeability: Moderate above the bedrock
Potential frost action: Moderate
Shrink-swell potential: Low
Surface layer texture Silt loam
Potential for surface runoff: Medium
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Building Sites

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Septic Tank Absorption Fields

The limited depth to bedrock reduces the filtering capacity of the soil and greatly increases the difficulty of proper installation of the effluent distribution lines.

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

WESTMORELAND
Pasture and hayland suitability group: A-2
Hydric soil: No

Soil Properties and Qualities

COSHOCTON
Available water capacity: About 8.1 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 10 to 18 meq per 100 grams
Depth class: Deep or very deep
Depth to root restrictive feature: Bedrock (paralithic): 40 to 120 inches
Depth to the top of the seasonal high water table: 1.5 to 2.5 feet
Water table kind: Perched
Ponding: None
Drainage class: Moderately well drained
Flooding: None
Organic matter content in the surface layer: 1.0 to 3.0 percent
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Permeability: Moderately slow or slow
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: High
Wind erosion hazard: Slight

Use and Management Considerations

Pastureland

Avoiding overgrazing can reduce the hazard of erosion.

Maintaining healthy plants and vegetative cover can reduce the hazard of erosion.

Erosion control is needed when pastures are renovated.

The root systems of plants may be damaged by frost action.

Woodland

If the soil is disturbed, the slope increases the hazard of erosion.

The slope increases excavation costs, poses safety hazards, and creates a potential for erosion during construction of haul roads and log landings.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Soil wetness may limit the use of this soil by log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

The slope creates unsafe operating conditions and reduces the operating efficiency of harvesting and mechanical planting equipment.

The slope may restrict the use of some mechanical planting equipment.

The slope restricts the use of equipment for preparing this site for planting and seeding.

Burning may destroy organic matter.

Building Sites

The seasonal high water table may restrict the period when excavations can be made and may require a higher degree of construction site development and building maintenance. It is poorly suited to building site development and structures may need special design to avoid damage from wetness.

The slope influences the use of machinery and the amount of excavation required. Special building practices and designs are required to ensure satisfactory performance.

Moderate shrinking and swelling of the soil may crack foundations and basement walls. Foundations and other structures may require some special design and construction techniques or maintenance.

Septic Tank Absorption Fields

The restricted permeability of this soil limits the absorption and proper treatment of the effluent from septic systems.

Because of the slope, special design and installation techniques are needed for the effluent distribution lines.

The seasonal high water table in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Costly measures may be needed to lower the water table in the area of the absorption field.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

The low bearing strength of this soil is generally unfavorable for supporting heavy loads. Special design of local roads and streets is needed to prevent the structural damage caused by low soil strength.

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

Component Interpretive Groups

COSHOCTON
Pasture and hayland suitability group: A-2
Hydric soil: No

WoA=Wick silt loam, 0 to 2 percent slopes, frequently flooded

Setting
Landform: Flood plain
Position on the Landform: Step
Size of areas: About 1.0 to 590 acres

Map Unit Composition
Wick and similar components: 90 percent

Similar Components
Soils with less silt and more sand in the subsoil

Contrasting Components:
Somewhat poorly drained soils: 4 percent
Zepernick soils: 4 percent
Carlisle soils: 2 percent

Map Unit Interpretive Groups
Land capability classification: 5w
Prime farmland: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Soil Properties and Qualities

WICK
Available water capacity: About 10.3 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 33 to 34 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: At or near the surface
Water table kind: Apparent
Ponding: None
Drainage class: Very poorly drained
Flooding: Frequent
Organic matter content in the surface layer: 2.0 to 4.0 percent
Parent material: Silty alluvium
Permeability: Moderately slow or moderate
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight
Distinctive soil property: Hydric soil

Use and Management Considerations

Pastureland

Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.

Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

Standing water can inhibit the growth of some species of seedlings by restricting root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Flooding may result in damage to haul roads and increased maintenance costs.

Soil wetness may limit the use of this soil by log trucks.

Flooding restricts the safe use of roads by log trucks.

Building Sites

The frequent flooding in areas of this soil greatly increases the risk of damage associated with floodwaters. Because of the flooding, this soil is generally unsuited to building site development.

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

Septic Tank Absorption Fields

This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Because of the seasonal high water table, this soil is generally unsuited to use as a site for septic tank absorption fields.

Local Roads and Streets

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Special design of roads and bridges is needed to prevent the damage caused by flooding.

Component Interpretive Groups

WICK
Pasture and hayland suitability group: C-3
Hydric soil: Yes

ZeA=Zepernick silt loam, 0 to 2 percent slopes, occasionally flooded

Setting
Landform: Flood plain (Figure 13)
Position on the Landform: Step
Size of areas: About 1.5 to 792 acres

Figure 13. Zepernick silt loam, 0 to 2 percent slopes, occasionally flooded soils under floodwater. Zepernick soil is prime farmland if protected from floodwaters and drained.

Map Unit Composition
Zepernick and similar components: 85 percent

Similar Components
Soils with less silt and more sand in the subsoil

Contrasting Components:
Wick soils: 13 percent
Moderately well drained soils: 2 percent

Map Unit Interpretive Groups
Land capability classification: 2w
Prime farmland: Prime farmland if drained

Soil Properties and Qualities

ZEPERNICK

Available water capacity: About 12.2 inches to a depth of 60 inches
Cation-exchange capacity of the surface layer: 8.0 to 18 meq per 100 grams
Depth class: Very deep
Depth to root restrictive feature: Greater than 80 inches
Depth to the top of the seasonal high water table: 0.5 to 1.0 feet
Water table kind: Apparent
Ponding: None
Drainage class: Somewhat poorly drained
Flooding: Occasional
Organic matter content in the surface layer: 2.0 to 5.0 percent
Parent material: Silty alluvium
Permeability: Moderately slow or moderate
Potential frost action: High
Shrink-swell potential: Moderate
Surface layer texture Silt loam
Potential for surface runoff: Low
Wind erosion hazard: Slight

Use and Management Considerations

Cropland

The root system of winter grain crops may be damaged by frost action.

Careful selection and application of chemicals and fertilizers help to minimize the possibility of groundwater contamination.

Controlling traffic can minimize soil compaction.

Measures that protect the soil from scouring and minimize the loss of crop residue by floodwaters are needed.

Small grain crops may be damaged by flooding in winter and spring.

Subsurface drainage helps to lower the seasonal high water table.

Pastureland

Forage production can be improved by seeding grass-legume mixtures that are tolerant of flooding.

Sediment left on forage plants after a flood event may reduce palatability and forage intake by the grazing animal.

Excess water should be removed, or grass or legume species that are adapted to wet soil conditions should be planted.

The root systems of plants may be damaged by frost action.

Restricting grazing during wet periods can minimize compaction.

Woodland

A seasonal high water table can inhibit the growth of some species of seedlings by reducing root respiration.

The low strength of the soil may cause the formation of ruts, which can result in unsafe conditions and damage to equipment.

The low strength of the soil increases the cost of constructing haul roads and log landings.

Flooding may result in damage to haul roads and increased maintenance costs.

Soil wetness may limit the use of this soil by log trucks.

Flooding restricts the safe use of roads by log trucks.

Because of low soil strength, harvesting equipment may be difficult to operate and damage may result. The low strength of the soil may create unsafe conditions for log trucks.

Building Sites

Under normal weather conditions, this soil is subject to occasional flooding. The flooding may result in physical damage and costly repairs to buildings. This soil is generally unsuited to homesites. Special design of some structures, such as farm outbuildings, may be needed to prevent damage caused by flooding.

Septic Tank Absorption Fields

This soil is generally unsuited to septic tank absorption fields. The flooding in areas of this soil greatly limits the absorption and proper treatment of the effluent from septic systems. Rapidly moving floodwaters may damage some components of septic systems.

Local Roads and Streets

Because of shrinking and swelling, this soil may not be suitable for use as base material for local roads and streets.

Local Roads and Streets may be damaged by frost action, which is caused by the freezing and thawing of soil moisture.

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

Special design of roads and streets is needed to prevent the structural damage caused by low soil strength.

Special design of roads and bridges is needed to prevent the damage caused by flooding.

Component Interpretive Groups

ZEPERNICK
Pasture and hayland suitability group: C-3
Hydric soil: No

Important Farmland

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, woodland, 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, 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.

About 103,000 acres in the county, about 30 percent of the total acreage in the county, are mapped in soil map units that meet the requirements for prime farmland as defined by the Natural Resources Conservation Service.

Most of the prime farmland in the county is used as cropland. Urbanization in and around cities and along interstate corridors accounts for the majority of prime farmland lost to non-agricultural uses.

A recent trend in land use in some parts of Columbiana County 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.

The map units in Columbiana County that are considered prime farmland are listed in Table 5-Prime Farmland and Table 34-Interpretative Groups. These lists do not constitute a recommendation for a particular land use. On some soils included in the lists, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in Table 4-Acreage and Proportionate Extent of the Map Units. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units”.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil qualities, location, growing season, and moisture supply needed for the economic production of sustained high yields of a specific high- quality crop when treated and managed by acceptable farming methods. Examples of such crops are tree fruits, berries, and vegetables.

Unique farmland has an adequate supply of available moisture for the specific crops for which it is used because of stored moisture, precipitation, or irrigation and has a combination of soil qualities, growing season, temperature, humidity, air drainage, elevation, aspect, and other factors, such as nearness to markets that favors the production of a specific food or fiber crop.

Lists of unique farmland are developed as needed in cooperation with conservation districts and others.

Additional Farmland of Statewide Importance

Some areas other than areas of prime farmland and unique farmland are of statewide importance in the production of food, feed, fiber, forage, and oilseed crops. The criteria used in

defining and delineating these areas are determined by the appropriate state agency or agencies. Generally, additional farmland of statewide importance includes areas that nearly meet the criteria for prime farmland and that economically produce high yields of crops when treated and managed by acceptable farming methods. Some areas can produce as high a yield as areas of prime farmland if conditions are favorable. In some states additional farmland of statewide importance may include tracts of land that have been designated for agriculture by state law.

Additional Farmland of Local Importance

This land consists of areas that are of local importance in the production of food, feed, fiber, forage, and oilseed crops and are not identified as having national or statewide importance. Where appropriate, this land is identified by local agencies. It may include tracts of land that have been designated for agriculture by local ordinance.

Lists of this land are developed as needed in cooperation with conservation districts and others.

Hydric Soils

The hydric soils in Columbiana County are listed in Table 6-Hydric Soils. The non-hydric soils with hydric components are listed in Table 7-Non-hydric Map Units with Hydric Components.

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). 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.

Figure 14. The prolific hydrophytic vegetation of swamps accumulates under ponded water and becomes parent materials of Carlisle organic soils.

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. (Figure 14) These soils are within the aquic moisture regime. This is a moisture condition with a seasonal reducing environment that is virtually free of dissolved oxygen because the soil is saturated.

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). 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, Nineth Edition 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a duration long enough 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 Columbiana County are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 1998).

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

The map units in Table 6 meet the definition of hydric soils. 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, 1998).

Map units that are dominantly hydric soils may have small areas, or components, of non-hydric soils in the higher positions on the landform, and map units dominantly non-hydric soils may have components of hydric soils in the lower positions on the landform.

The map units listed in Table 7- Non-hydric Map Units with Hydric Components, do not meet the definition of hydric soils. A minor portion of these map units, however, may be hydric soils. Onsite investigation is necessary to determine whether or not hydric soils occur and if so the location and extent of the included hydric soils.

Soil Quality

Prepared by Natural Resources Conservation Service, Soil Quality Institute, Ames, Iowa.

SOIL QUALITY is how well soil does what we want it to do. More specifically, soil quality is the capacity of a specific kind of soil to function, within natural or managed ecosystem boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation.

Figure 15. Example of a quality soil.

People have different ideas of what a quality soil is. For example: for people active in production agriculture, it may mean highly productive land, sustaining or enhancing productivity, maximizing profits, or maintaining the soil resource for future generations; for consumers, it may mean plentiful, healthful, and inexpensive food for present and future generations; for naturalists, it may mean soil in harmony with the landscape and its surroundings; for the environmentalist, it may mean soil functioning at its potential in an ecosystem with respect to maintenance or enhancement of biodiversity, water quality, nutrient cycling, and biomass production.

What Does Soil Do?

Healthy soil gives us clean air and water, bountiful crops and forests, productive rangeland, diverse wildlife, and beautiful landscapes. Soil does all this by performing five essential functions:

- Regulating water. Soil helps control where rain, snowmelt, and irrigation water goes. Water and dissolved solutes flow over the land or into and through the soil.
- Sustaining plant and animal life. The diversity and productivity of living things depends on soil.
- Filtering potential pollutants. The minerals and microbes in soil are responsible for filtering, buffering, degrading, immobilizing, and detoxifying organic and inorganic materials, including industrial and municipal by-products and atmospheric deposits.
- Cycling nutrients. Carbon, nitrogen, phosphorus, and many other nutrients are stored, transformed, and cycled through soil.
- Supporting structures. Buildings need stable soil for support, and archeological treasures associated with human habitation are protected in soils.

Here are some examples of indicators of soil quality:

Indicator	Relationship to Soil Health
Soil organic matter (SOM)	Soil fertility, structure, stability, nutrient retention; soil erosion.
PHYSICAL: Soil structure, depth of soil, Infiltration and bulk density; water holding capacity	Retention and transport of water and nutrients; habitat for microbes; estimate of crop productivity potential; compaction, plow pan, water movement; porosity; workability.
CHEMICAL: pH; electrical conductivity; extractable N-P-K	Biological and chemical activity thresholds; plant and microbial activity thresholds; plant available nutrients and potential for N and P loss.
BIOLOGICAL: Microbial biomass C and N; potentially mineralizable N; soil respiration.	Microbial catalytic potential and repository for C and N; soil productivity and N supplying potential; microbial activity measure

Soil Has Both Inherent and Dynamic Quality.

Inherent soil quality is a soil's natural ability to function. For example, sandy soils drain faster than clayey soils. Deep soils will have more room for roots than soils with bedrock near the surface. These characteristics do not change easily.

Dynamic soil quality is how soil changes depending on how it is managed. Management choices affect the amount of soil organic matter, soil structure, soil depth, water and nutrient holding capacity. One goal of soil quality research is to learn how to manage soil in a way that improves soil function. Soils respond differently to management depending on the inherent properties of the soil and the surrounding landscape.

Soil Quality is Linked to Sustainability.

Understanding soil quality means assessing and managing soil so that it functions optimally now and is not degraded for future use. By monitoring changes in soil quality, a land manager can determine if a set of practices are sustainable.

Assessing Soil Quality

Soil quality is an assessment of how well soil performs all of its functions. It cannot be determined by measuring only crop yield, water quality, or any other single outcome. The quality of a soil is an assessment of how it performs all of its functions now and how those functions are being preserved for future use.

Soil quality cannot be measured directly, so we evaluate indicators. Indicators are measurable properties of soil or plants that provide clues about how well the soil can function. Indicators can be physical, chemical, and biological characteristics.

Useful indicators :

- are easy to measure
- measure changes in soil functions
- encompass chemical, biological, and physical properties
- are accessible to many users and applicable to field conditions
- are sensitive to variations in climate and management.

Indicators can be assessed by qualitative or quantitative techniques. After measurements are collected, they can be evaluated by looking for patterns and comparing results to measurements taken at a different time or field.

Soil Quality is Not an End in Itself.

The ultimate purpose of researching and assessing soil quality is not to achieve high aggregate stability, biological activity, or some other soil property. The purpose is to protect and improve long-term agricultural productivity, water quality, and habitats of all organisms including people. We use soil characteristics as indicators of soil quality, but in the end, soil quality must be identified by how it performs its functions.

Managing for Soil Quality

Each combination of soil type and land use calls for a different set of practices to enhance soil quality. Yet, several principles apply in most situations.

1. Add organic matter. Regular additions of organic matter are linked to many aspects of soil quality. Organic matter may come from crop residues at the surface, roots of cover crops, animal manure, green manure, compost, and others. Organic matter, and the organisms that eat it, can improve water holding capacity, nutrient availability, and can help protect against erosion.

2. Avoid excessive tillage. Tillage has positive effects, but it also triggers excessive organic matter degradation, disrupts soil structure, and can cause compaction. For more information about conservation tillage, visit the Conservation Tillage Information Center site.

3. Carefully manage fertilizer and pesticide use. In this century, pesticides and chemical fertilizers have revolutionized U.S. agriculture. In addition to their desired effects, they can harm non-target organisms and pollute water and air if they are mismanaged. Nutrients from organic sources also can become pollutants when misapplied or over-applied. On the positive side, fertilizer can increase plant growth and the amount of organic matter returned to the soil.

4. Increase ground cover. Bare soil is susceptible to wind and water erosion, and to

drying and crusting. Ground cover protects soil, provides habitats for larger soil organisms, such as insects and earthworms, and can improve water availability. Cover crops, perennials, and surface residue increase the amount of time that the soil surface is covered each year.

5. Increase plant diversity. Diversity is beneficial for several reasons. Each crop contributes a unique root structure and type of residue to the soil. A diversity of soil organisms can help control pest populations, and a diversity of cultural practices can reduce weed and disease pressures. Diversity across the landscape and over time can be increased by using buffer strips, small fields, contour strip cropping, crop rotations, and by varying tillage practices. Changing vegetation across the landscape or over time increases plant diversity, and the types of insects, microorganisms, and wildlife that live on your farm.

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 (figure 15); as rangeland and forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; for agricultural waste management; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Figure 15. The Homeworth silt loam, 0 to 2 percent slopes and Homeworth silt loam, 2 to 6 percent slopes soils on the terrace landscape of this picture are productive for growing standard field crops and for specialty crops.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, 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.

Cropland Limitations and Hazards

The management concerns affecting the use of the detailed map units in the survey area for crops are shown in Table 8-Cropland Limitations and Hazards. The main concerns in managing nonirrigated cropland are controlling flooding, water erosion, preventing ground-water pollution, removing excess water, reducing surface crusting, reducing compaction, and maintaining soil tilth, organic matter, and fertility.

Generally, a combination of several practices is needed to control *water erosion*. Conservation tillage, stripcropping, contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to prevent excessive soil loss.

Surface and/or subsurface drainage is used to remove excess water, lower *seasonal high water tables*, and to reduce *ponding*.

A *surface crust* forms in tilled areas after hard rains and may inhibit seedling emergence. Regular additions of crop residue, manure, or other organic materials help to improve soil structure and minimize crusting.

Tilling within the proper range in moisture content minimizes *compaction*.

Measures that are effective in maintaining *soil tilth, organic matter, and fertility* include applying fertilizer, both organic and inorganic, including manure; incorporating crop residue or green manure crops into the soil; and using proper crop rotations. Controlling erosion helps to prevent the loss of organic matter and plant nutrients and thus helps to maintain productivity All soils used for nonirrigated crops respond well to applications of fertilizer.

Some of the limitations and hazards shown in the table cannot be easily overcome. These are *flooding, ponding, slope, limited organic matter content, and depth to bedrock*.

Flooding.--Flooding can damage winter grain and forage crops. A tillage method that partly covers crop residue and leaves a rough or ridged surface helps to prevent removal of crop residue by floodwater. Tilling and planting should be delayed in the spring until flooding is no longer a hazard.

Ponding.--Surface drains helps to remove excess surface water and reduce damage from ponding.

Slope.--Where the slope is more than 25 percent, water erosion is excessive. The selection of crops and use of equipment is limited. Cultivation may be restricted.

Limited organic matter content.--Many soils that have a light colored surface layer have a low or moderately low organic matter content and weak or moderate structure. Regularly adding crop residue, manure, and other organic matter materials to the soil maintains or improves the organic matter content and the soil structure.

Depth to bedrock.--Rooting depth and available moisture may be limited by bedrock within a depth of 40 inches.

Additional limitations and hazards are as follows:

Potential for ground-water pollution.--This is a hazard in soils with excessive permeability, moderately deep or shallow bedrock, or a water table within the profile.

Limited available water capacity, poor tilth, restricted permeability, and *surface crusting*.--These limitations can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems.

Frost action.--Frost action can damage deep rooted legumes and some small grains.

Sandy layers.--Deep leaching of nutrients and pesticides may result from sandy layers. Crops generally respond better to smaller, more frequent applications of fertilizer and lime than to one large application. -

Clodding. --Clods may inhibit germination, reduce water infiltration and increase runoff.

Subsidence of the muck. --Subsidence or shrinking occurs as a result of oxidation in the muck after the soil is drained. Control of the water table by subirrigation through subsurface drain lines reduces the hazards of subsidence, burning, and soil blowing.

High clay content.--The high clay content in the soil reduces rooting depth and water movement.

Root restrictive layers. --Root restrictive layers limit root growth and water movement.

Excessive alkalinity.--High pH in the upper part of the soil may inhibit plant growth and reduce availability of potassium and micronutrients.

Excessive acidity.--Low pH in the upper part of the soil may increase concentrations of aluminum and manganese and may injure plants.

Gravelly surface. --This limitation causes rapid wear of tillage equipment. It cannot be easily overcome.

Stony surface.--Stones or boulders on the surface can hinder normal tillage unless they are removed.

Following is an explanation of the criteria used to determine the limitations or hazards for cropland.

Easily eroded.--The surface K factor multiplied by the relative value of the slope is more than 2 (same as prime farmland criteria).

Erosion hazard.--The relative value of the

slope is greater than 2.

Frequent flooding.--The component of the map unit is frequently flooded.

Occasional flooding.--The component of the map unit is occasionally flooded.

Limited available water capacity.--The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less.

Ponding.--Ponding duration is assigned to the component of the map unit.

Ponded for extended periods.--Very long ponding duration is assigned to the component of the map unit.

Gravelly surface.--The surface texture has flaggy, very flaggy, extremely flaggy, very gravelly, extremely gravelly, or very channery modifier.

Stony surface.--The surface texture has bouldery, very bouldery, extremely bouldery, stony, very stony, extremely stony, cobbly, very cobbly, or extremely cobbly modifier.

Sandy layers.--The family particle size is sandy, sandy or sandy-skeletal, sandy over loamy, sandy over clayey, sandy-skeletal, sandy-skeletal over clayey, or sandy-skeletal over loamy; or the subgroup is Arenic or Psammentic; or the suborder is Psamments.

Depth to bedrock.--Bedrock is at a depth of less than 40 inches.

High potential for ground-water pollution.--The soil has hard bedrock within the profile, or permeability is more than 6 inches per hour within the soil.

Moderate potential for ground water pollution.--The soil has an apparent water table within a depth of 4 feet or moderately rapid permeability between 24 and 60 inches.

Poor tilth. --The component of the map unit is severely eroded, has less than 1 percent organic matter in the surface layer, or 35 percent or more clay in the surface layer.

Fair tilth.--The component of the map unit has a silty clay loam or clay loam surface layer and less than 35 percent clay or moderately eroded and a silt loam or loam surface texture.

Excessive acidity.--The upper range of the soil pH is less than 4.5 within 40 inches.

Excessive alkalinity.--The lower range of the soil pH is more than 7.4 within 40 inches.

Restricted permeability.--Permeability is 0.2 inches per hour or less within the soil profile and a seasonal high water table is within 18 inches.

Seasonal high water table.--The lower water table depth is less than 1.5 feet.

Excessive slope.--The upper slope range of the component of the map unit is more than 25 percent.

Surface crusting.--The organic matter content of the surface layer is less than or equal to 3 percent and the texture is silt loam or silty clay loam.

Surface compaction. --The component of the map unit has a silt loam, silty clay loam, clay loam, clay, or silty clay surface layer.

Frost action.--The component of the map unit has a high potential frost action.

Part of surface removed.--The surface layer of the component of the map unit is moderately eroded.

Most of surface removed.--The surface layer of the component of the map unit is severely eroded.

S*ubsidence of the muck*.--The organic matter content of the surface layer of the component of the map unit is greater than or equal to 20 percent.

Wind erosion.--The upper range of the slope is less than or equal to 25 percent and the wind erodibility group is 1, 2, or 3.

Clodding.--The relative value of the total clay in the surface layer is greater than 32 percent.

Root restrictive layer.--Fragipan or dense material within 40 inches.

High clay content.--A layer within 40 inches of the surface has clay content that averages between 40 and 60 percent.

Very high clay content.--A layer within 40 inches of the surface has clay content that averages more than 60 percent.

Crops and Pasture

Mitch Cattrell, District Conservationist, Natural Resources Conservation Service, prepared this section

General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area are identified; the system of land capability classification used by the USDA Natural Resources Conservation Service is explained; and the estimated yields of the main crops and hay and pasture plants are listed for each soil. Soils with severe limitations that are not usually cropped or pastured do not receive a rating in the tables addressing such practices.

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

Managing Cropland

The management systems needed on cropland are those that protect or improve the soil, help to control erosion, and minimize the water pollution caused by soil sediment, plant nutrients, and plant residues carried off-site by water runoff. Water erosion is the major hazard on most of the soils used for crops and pasture in Columbiana County. It is a problem on most soils with slopes greater than 2 percent. As the slope increases, the hazard of erosion and the difficulty in controlling erosion also increases.

Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the less fertile subsoil is incorporated into the plow layer and seedling root zone. Loss of the topsoil is especially damaging on soils that have a restrictive layer in the subsoil that limits the depth of the root zone, such as the fragipan in Canfield, Omulga, Ravenna and Wadsworth soils or the bedrock in Berks soils. Secondly, erosion on farmland results in the sedimentation of streams and lakes. Control of erosion minimizes this pollution and improves the quality of water for recreation and fish and wildlife.

Erosion control practices provide a protective surface cover, help control runoff, and increase the rate of water infiltration. A cropping system that keeps plant cover on the surface for extended periods generally can keep soil losses to an amount that does not reduce productivity of the soil. On most dairy farm cropland with soils over 2 percent slopes, forage crops of grass/legume hay are included in the conservation cropping system for erosion control. The forage crops also add nitrogen and organic matter to the soil and improve soil tilth.

Minimum tillage and no-tillage systems that leave crop residues on the soil surface are beneficial to nearly all soils in the county. On the strongly sloping through moderately steep soils, no-tillage cropping is effective in controlling erosion, increasing water infiltratiion, and improving soil tilth. Incorporating a reduced tillage cropping system with other conservation practices provides excellent erosion control. Reduced tillage systems are less effective on the flatter, poorly drained soils such as Frenchtown and Valley.

Contour farming, contour strip cropping, and strip cropping across irregular slopes also help to control erosion in the survey area. Contour farming and contour strip cropping is best suited to gently sloping thru moderately steep soils that have smooth, uniform slopes such as Berks, Gilpin, and Guernsey soils found primarily in the southern part of the county. Strip cropping across irregular slopes common to the glacial soils such as Canfield and Rittman is also a good practice.

Conservation cropping systems, reduced tillage, and contour farming are all good erosion control practices. These practices in conjunction with each other and other measures such as cover crops and structural measures such as grassed waterways will provide excellent erosion control. Information about erosion control measures for each kind of soil in the survey area is available at the local office of the Natural Resources Conservation Service.

Soil wetness is an important management concern on about 12 percent of Columbiana County. Seasonal wetness in soils such as Homeworth and Doles, can delay field preparation and planting in the springtime. Better drained soils, like Canfield and Omulga, may have wetter minor components in the management unit that cause management problems. Wetter components are commonly sited in small depressions or be along drainageways. The effectiveness and maintenance of both surface and subsurface drainage systems vary with the kind of soil.

Drainage is a major consideration in managing crops and pasture. Management of drainage in conformance with regulations influencing wetlands may require special permits and extra planning.

Natural fertility is low or medium on most upland soils. The soils on flood plains, such as Lobdell, Orrville, and Zepernick have a higher content of available plant nutrients. Soils associated with glacial till generally have higher natural fertility than the upland residual soils in the southern part of the survey area.

Many soils on the upland are very strongly acid to moderately acid unless the surface has been limed. Application of ground limestone are needed to raise the pH level sufficiently for the production of alfalfa and other crops that grow best on nearly neutral sites.

The application of lime and fertilizer should be based on the results of soil tests, the needs of the crop, and the expected level of yields. The Ohio State University Extension can help determine the kind and amount of lime and fertilizer needed and the proper method of application.

Soil tilth is an important factor affecting seed germination and the infiltration of water into the soil. Soils that have good tilth are granular and porous.

Most of the cropland soils in this survey area have a silt loam surface layer that is light in color and low in organic matter content. A surface crust forms during periods of heavy rainfall. The crust is hard when dry and nearly impervious to water. It

reduces the rate of water infiltration and increases the runoff rate. Regular additions of crop residues, manure, and other organic material can improve soil structure and minimize crusting. Fall plowing is generally not a good practice because a crust forms in the winter and spring. If plowed in the Fall, many of these soils are nearly as dense and hard at planting time as they were before they were plowed. More than 92 percent of the cropland in the survey area consists of sloping soils that are subject to erosion if they are plowed in the Fall.

Managing Pasture and Hayland

In 1997, there were 26,500 head of cattle and calves in the county (USDA National Agricultural Statistics Service 1999). Most of the hay land is grown in rotations with grain crops and is dominated by alfalfa-grass mixtures. Permanent pasture accounts for nearly all of the 58,400 acres. Pasturelands are mostly native grasses. Pasture land are generally not mechanically harvested. Hay land is harvested either as baled hay or silage.

Because nearly 60 percent of the total farm income in the survey area is derived from the sale of dairy products and livestock, a good forage program is important. A successful livestock enterprise depends on a forage program that provides large quantities of high-quality feed. Such a program can provide as much as 66 percent of the feed for dairy cattle. On much of the pastureland in Columbiana County, renovation, brush control, and measures that prevent overgrazing are needed.

The soils in the survey area vary widely in their ability to produce grasses and legumes because of differences in depth to bedrock or to other limiting layers, internal drainage, available water capacity, and other properties. The forage species selected for planting should be those that are suited to the different kinds of soils.

The nearly level and gently sloping, deep and very deep, well drained soils should be planted to the highest producing crops, such as alfalfa hay mixes. Sod forming grasses, such as perennial ryegrass and bluegrass minimize erosion of steeper soils. Alfalfa can be seeded with cool season grasses in areas where the soils are at least two feet deep and are well drained. The more poorly drained soils are better suited to clover-grass mixtures or to pure stands of either.

The forage species that are selected for planting should be suited not only to the soil but also for the intended use. They should be those that provide the maximum quality and versatility in the forage program. Legumes generally produce higher quality feed than grasses. As a result, they should be grown to the maximum extent possible. The taller legumes, such as alfalfa and red clover, are more versatile than legumes that are used primarily for grazing. Orchardgrass, timothy, and perennial ryegrass are best adapted for pasture and hayland mixes in Columbiana County.

Warm season grasses planted in the Spring have the potential to alleviate mid-summer grazing deficiencies of cool-season grasses, although these are now commonly grown in the survey area. They grow well during the warm summer months. The greatest growth occurs from mid June to early September.

Species such as switchgrass, big bluestem, and Caucasian bluestem are adapted to the survey area. Warm season grasses do require a higher level of grazing management if they are to persist.

Renovation of existing forage stands on areas of steeper soils can increase yields and protect the soils from excessive erosion. This is especially beneficial on residual soils on steep slopes such as Berks, Gilpin and Hazleton. Adding legumes to these stands along with lime and fertilizer provides high quality feed.

Additional information about pasture and hayland management is available from local offices of the Natural Resources Conservation Service and the Ohio State University Extension.

Crop Yield Index

Table 9 is the Crop Yield Index for Columbiana County. The yield index reflects the yield potential of a soil in relation to other soils in the county. It is based on the most productive soil, GrB - Glenford silt loam, 2 to 6 percent slopes receiving a rating of 100, and other soils are ranked against this standard.

The yields used to calculate the index values are based on using good management practices.

To calculate estimated yields, use the yield index number as a percentage, and multiply it by the crop yield in the table header. For example, to calculate estimated corn yield for CcB - Canfield silt loam, 2 to 6 percent slopes, multiply 0.94 by the corn yield in the header ‘Corn’, which is 125. 125 x 0.94 = 117.5 bushels of corn estimated for CcB - Canfield silt loam, 2 to 6 percent slopes.

To use this yield index in the future to calculate estimated yields, use current yield data.

Additional information on calculating estimated yields can be obtained from the local office of the Natural Resources Conservation Service or the Ohio State University Extension.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive land forming 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 woodland, or for engineering purposes.

In the capability system, soils are generally grouped at three levels=capability class, subclass, and unit.

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

Class 1 soils have slight limitations that restrict their use.
Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.
Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.
Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.
Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, woodland, or wildlife habitat
Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, woodland, or wildlife habitat.
Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, woodland, or wildlife habitat.
Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

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

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

The acreage of soils in each capability class or subclass is shown in Table 10-Capability Classes and Subclasses. The capability classification of map units in this survey area is given in the section "Detailed Soil Map Units" and in Table 34-Interpretative Groups.

Pasture and Hayland Suitability Groups

The pasture and hayland suitability group symbol for each soil is listed in each map unit description under the "Component interpretative groups" heading and in table 34 (p. 661). Soils assigned the same suitability group symbol require the same general management and have about the same potential productivity. The pasture and hayland suitability groups are organized by soil characteristics and limitations. The groups are defined as follows

Soils assigned to group A have few limitations affecting the management and growth of climatically adapted plants.

Soils in group A-1 are deep or very deep and are well drained or moderately well drained. The available water capacity ranges from moderate to very high. Slopes range from 0 to 18 percent. Plants on these soils respond well to additions of lime. Frequent applications may be needed to maintain an adequate pH level. A low pH level in the subsoil shortens the life of some deep-rooted legumes.

Soils in group A-2 are deep or very deep and are well drained or moderately well drained. The available water capacity ranges from moderate to very high. Slopes range from 18 to 25 percent. Plants on these soils respond well to additions of lime. Frequent applications

may be needed to maintain an adequate pH level. A low pH level in the subsoil shortens the life of some deep-rooted legumes. The slope may interfere with clipping, mowing, and spraying for weed control. The slope also increases the hazard of erosion if the areas are overgrazed or cultivated for reseeding. The soils in this group are suited to no-till reseeding and interseeding.

Soils in group A-3 are deep or very deep and are well drained or moderately well drained. The available water capacity ranges from moderate to very high. Slopes range from 25 to 40 percent. These soils are not suited to pasture or hay, but some grass pasture is produced.

Soils in group A-4 are deep or very deep and are well drained or moderately well drained. They have stones and boulders on the surface that preclude the use of hay-making equipment. Slopes range from 0 to 40 percent.

Soils in group A-5 are well drained or moderately well drained and are subject to flooding. The available water capacity ranges from moderate to very high. Slopes range from 0 to 18 percent. Grazing is limited during periods of stream overflow. Floodwater can deposit sediments that lower the quality of forage in areas of these soils.

Soils in group A-6 are deep or very deep, are well drained or moderately well drained, and are subject to frost action. The available water capacity ranges from moderate to very high. Slopes range from 0 to 18 percent. Frost action can damage legume stands. Mixing fibrous-rooted grasses with the legumes and using proper grazing management methods help to prevent the damage caused by frost action. (Figure 16)

Figure 16. Hay and grain grown in strips help conserve this Coshocton silt loam, 6 to 15 percent slopes soil. This is in pasture and hayland interpretive group A-6.

Soils in group B have limited growth and production potential because of droughtiness.

Soils in group B-1 are deep or very deep and are well drained or moderately well drained. The available water capacity is low or very low. Slopes range from 0 to 25 percent. The limited available water capacity restricts forage growth and production.

Soils in group B-2 are deep or very deep and are well drained or moderately well drained. The available water capacity is low or very low. Slopes range from 25 to 40 percent. The limited available water capacity restricts forage growth and production.

Soils in group B-3 are well drained to somewhat poorly drained. They are subject to flooding. Slopes range from 0 to 6 percent.

Soils in group B-4 are deep or very deep and are well drained or moderately well drained. They are in areas of reclaimed mines. The available water capacity is low or very low. Slopes range from 0 to 25 percent. The substratum has a high content of rock fragments. The root zone ranges from 20 to 30 inches.

Soils in group C are wet because of a seasonal high water table.

Soils in group C-1 are deep or very deep and are somewhat poorly drained to very poorly drained. Slopes range from 0 to 12 percent. These soils normally respond well to subsurface drainage.

Soils in group C-2 are deep or very deep and are somewhat poorly drained to very poorly drained. They have a seasonal high water table, which restricts the growth of deep-rooted forage plants or species that have a taproot. Shallow-rooted species grow best on these soils. Subsurface drains are used to lower the seasonal high water table. The effectiveness of subsurface drainage is typically restricted by the permeability of the subsoil, by a high content of clay in the subsoil, or by a fragipan. Slopes range from 0 to 12 percent.

Soils in group C-3 are somewhat poorly drained to very poorly drained and are subject to flooding. The soils have a seasonal high water table, which restricts the rooting depth of forage plants. Shallow-rooted species grow best on these soils. The available water capacity ranges from moderate to very high. Slopes range from 0 to 6 percent. Grazing is limited during periods of stream overflow.

Soils in group D have a high content of organic matter.

Soils in group D-1 formed entirely or partially in

organic material. Slopes range from 0 to 2 percent.

Soils in group E are shallow soils in which root growth is restricted to a depth of less than 20 inches.

Soils in group E-1 are shallow or very shallow. The available water capacity is low or very low. Slopes range from 0 to 25 percent. The limited available water capacity restricts forage production. These soils are well suited to native warm-season grasses.

Soils in group E-2 are shallow or very shallow or have a high bulk density and cobbles and stones in the upper part. The available water capacity is low or very low. Slopes range from 25 to 40 percent. Shallow-rooted species should be selected for planting in areas of these soils.

Soils in group E-3 have a high bulk density and cobbles and stones in the upper part. The available water capacity is low or very low. Slopes range from 0 to 25 percent.

Soils in group F have a root zone that extends to a depth of 20 to 40 inches. These soils are better suited to forage species that do not have a taproot than to other species.

Soils in group F-1 are moderately deep and are or moderately well drained. They are moderately deep to a fragipan. Slopes range from 0 to 25 percent.

Soils in group F-4 are well drained or moderately well drained. They are moderately deep to a fragipan. Slopes range from 25 to 40 percent.

Soils in group F-5 are well drained or moderately well drained. Rooting depth is restricted in the subsoil by a high bulk density, a high content of clay, slow permeability, or a combination of these factors. Slopes range from 0 to 25 percent.

Soils in group F-6 are well drained or moderately well drained. Rooting depth is restricted in the subsoil by a high bulk density, a high content of clay, slow permeability, or a combination of these factors. Slopes range from 25 to 40 percent.

Soils in group F-7 are somewhat poorly drained to very poorly drained. A high content of clay in the subsoil and very slow permeability restrict the rooting depth of forage plants. Slopes range from 0 to 12 percent.

Soils in group G have chemical properties that are unfavorable for many climatically adapted plants.

Soils in group G-1 are well drained or moderately well drained and are shallow or moderately deep to toxic spoil from surface mining operations. The available water capacity is low or very low in the root zone. Slopes range from 0 to 25 percent.

Soils in group G-2 are well drained or moderately well drained and are shallow or moderately deep to toxic spoil from surface mining operations. Slopes range from 25 to 40 percent.

Soils in group H are toxic or are too steep for forage production.

Soils in group H-1 are toxic as a result of surface mining operations or have slopes of 40 percent or more. These soils are generally not suited to pasture and hay.

Interpretive Groups

Interpretive groups are specified land use and specific management groupings that are assigned to soil map units because combinations of soils have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. These groups allow users of soil surveys to plan reasonable alternatives for the use and management of soils.

Table 34 - Interpretive Groups shows the interpretive groups for land capability classification; pasture and hayland suitability groups; prime farmland; and hydric condition of each soil map unit in the survey area.

Land capability classification is a system of grouping soils primarily on the basis of their capability to produce common cultivated crops and pasture plants without deterioration over a long period of time. The table shows the land capability class and subclass for each of the soils in Columbiana County. Additional information on land capability classification is provided under the heading "Land Capability Classification" in the "Crops and Pasture" section of this survey.

Pasture and hayland suitability groups are composed of soil map units having similar potentials and limitations for forage production. These groups simplify soils information and provide soil and plant science information for planning purposes. The table shows the pasture and hayland suitability group for each of the soil map units in Columbiana County. Additional information on pasture and hayland suitability groups is provided under the heading "Pasture and Hayland Management" in the "Crops and Pasture" section of this survey.

Prime farmland classification identifies the location and extent of the most suitable land for producing food, feed, fiber, forage, and oilseed crops. This identification is useful in the management and maintenance of the resource base that supports the productive capacity of Ohio agriculture. The table shows which of the soil map units in Columbiana County are prime farmland. Additional information on prime farmland is provided under the heading "Prime Farmland" in the “Important Farmland” section of this survey.

The identification of hydric soils and information about hydrophytic vegetation and wetland hydrology are used to define wetlands. The table shows which of the soil map units in Columbiana County are hydric. Additional information on hydric soils is provided under the heading "Hydric Soils" elsewhere in this survey.

Woodland Management and Productivity

James T. Elze, service forester, Ohio Department of Natural Resources, prepared this section

Approximately 43 percent of Columbiana County is wooded. The wooded acreage is mainly privately owned tracts, most of which are owned by non-farmers. About 3% of the county's total woodland is in state owned lands such as Highlandtown Wildlife Area, Yellow Creek State Forest and Beaver Creek State Park. The most extensive wooded areas are in the steeper southern parts of the county.

Deciduous forests are the dominant forests of the county. Only about 1% of the forest area is in coniferous woodland types and most of that area was planted. Two woodland type groups share nearly equal area and importance and are referred to as mixed northern hardwoods and oak-hickory. The dominant woodland species are red and white oaks, hickory, white ash, yellow-poplar, black cherry, red and sugar maple, and beech. Most of the wooded areas occur on moderately steep to very steep soils that formed in material weathered from sandstone, shale and siltstone. Gilpin, Berks, Westmoreland and Hazleton soils are common in these areas. Much of the woodland is on the slopes along streams and drainageways. Some tracts that formerly were used for hay and pasture are reverting to woodland.

Some of the woodland in the county reflects the results of poor management. Poor harvesting techniques have removed the best timber and left diseased, damaged, and low value trees on many of the good woodland sites. In many wooded areas, grapevines are killing and deforming valuable trees, thus lowering woodland productivity. Cattle have been allowed to graze in some wooded areas, damaging individual trees and woodland productivity by destroying leaf litter and desirable seedlings, damaging roots, and compacting the soil. Livestock exclusion can restore pastured woodland to a higher level of production.

Recommendations on woodland management can be obtained from local offices of the USDA's Natural Resources Conservation Service and the Ohio Department of Natural Resources, Division of Forestry.

The tables 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 forest management.

Woodland Productivity

In Table 12-Woodland Productivity, the *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand. (Figure 17)

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Figure 17. Managing woodland for timber affords the best prospects to gain economic returns for some soils in Columbiana County. This timber is growing on Berks channery silt loam, 25 to 40 percent slopes.

Woodland Management

In Tables 13-Woodland Harvesting Activities and 14-Woodland Regeneration Activities, interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical. (Figure 18)

Figure 18. Logs ready for transport to a sawmill. The timber is grown on steeper Gilpin soils adjacent to this loglanding site on this Gilpin silt loam, 2 to 6 percent slopes.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice 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 practice. 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 practice. 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 practice 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 forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

Rating class terms for fire damage and seedling mortality are expressed as *low, moderate*, and *high*. Where these terms are used, the numerical ratings indicate gradations between the point at which the potential for fire damage or seedling mortality is highest (1.00) and the point at which the potential is lowest (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. 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 (http://nsscnt.nssc.nrcs.usda.gov/nfm/).

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 *suitability for roads (natural surface)* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *harvest equipment operability* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, and ponding. The soils are described as well suited, moderately suited, or poorly suited to this use.

Ratings in the column *suitability for mechanical planting* are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsuited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column *suitability for mechanical site preparation* 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 *potential for damage to soil by fire* are based on texture of the surface layer, content of rock fragments and organic matter in the surface layer, thickness of the surface layer, and slope. The soils are described as having a low, moderate, or high potential for this kind of damage. The ratings indicate an evaluation of the potential impact of prescribed fires or wildfires that are intense enough to remove the duff layer and consume organic matter in the surface layer.

Windbreaks and Environmental Plantings

Farm and homestead windbreaks are rows of trees or shrubs established adjacent to farm buildings, feedlots, and homes. These windbreaks are usually planted perpendicular to the prevailing winter wind. Planting multiple rows of various species provides the best protection from winds and results in more varied wildlife habitat. 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 15-Windbreaks and Environmental Plantings, shows the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates in Table 15 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, the Ohio Department of Natural Resources, Division of Forestry, or of the Ohio State University Extension or from a commercial nursery.

Recreational Development

D. Mitch Cattrell, District Conservationist, Natural Resources Conservation Service, prepared this section

Columbiana County has a wealth of recreational opportunities available for nearly every interest. There are many areas of scenic, geologic, and historical interest. In 1974 Little Beaver Creek was the first in Ohio to be designated a “wild’ river. It is also included in the National Wild and Scenic Rivers Program. Some recreational pursuits are private while the vast majority is public.

Private recreational activities are not limited to, but are dominated by public golf courses and campgrounds (Figure 19). Many campgrounds offer trails for various uses as well as play areas. These areas are all subject to intense use.

Most recreational areas are publicly owned and operated. Outdoor enthusiasts of fishing, hiking, and picnicing have numerous opportunities offered in Beaver Creek and Guilford Lake State Parks. Hunters have hundreds of acres of public wildlife lands at Zepernick and Highlandtown areas as well as Yellow Creek and Beaver Creek State Forests. Fields for ball games are generally associated with the many municipal parks and school grounds throughout the County. The

County park district also maintains the Scenic Vista Park and Leetonia/Lisbon Greenway multiple use bike trail. Recreation in Columbiana County is an important part of the local economy and accounts for a significant amount of land use. The soils of the County are generally well suited for recreational purposes and development.

Figure 19. Canfield soils of this landscape allow for attractive recreation features such as this dam and pond in the watershed. Canfield soils are generally distributed in the northern part of Columbiana County that was glaciated.

The soils of the survey area are rated in Tables Recreational Development REC-1 and Recreational Development REC-2 according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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

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

The information in Tables Recreational Development REC-1 and Recreational Development REC-2 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 fragipan, 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 fragipan, 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 fragipan, 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 fragipan; 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

Dan McMillen, Private Lands Biologist, ODNR Division of Wildlife, prepared this section

Columbiana County attracts many different species of wildlife because of the diverse habitat types which can be found in the county. The county offers many acres of woodland, brushland, grassland, wetland, riparian, and cropland habitats. This diversity of habitats is created in large by the variety of soils and topography found in the county.

Major species of mammals found in the county would include the deer, woodchuck, rabbit, beaver, gray and fox squirrels, chipmunks, red and gray fox, mink, muskrat, opossum, raccoon, skunk, coyote and a variety of rodent species. Many species of birds are found in the county including crows, Canada geese, cardinals, blue jays, bluebirds, mourning doves, wild turkeys, wood ducks, mallards, grouse, pheasants, hawks, and owls (Figure 20).

Figure 20. Short ear owls scan the dormant fields on Fairpoint silty clay loam, 0 to 8 percent soils for signs of prey.

The southeastern portion of the county, including the townships of Liverpool, St. Clair, Middleton, Madison, Yellow Creek, Washington, Elk Run and Wayne are primarily wooded with steep slopes dominating the landscape. A large portion of this area is wooded because of the topography and therefore supports the majority of the woodland species of wildlife. Beaver Creek State Forest, Yellow Creek State Forest and

Highlandtown Wildlife Area are found in these townships. These public areas provide access for fishing, hunting, hiking, and other outdoor activities.

The remainder of the county is more agricultural with fewer woodlands but more grasslands and wetland areas. The upland species of wildlife such as pheasants, killdeer, mourning doves, bluebirds, and quail are more likely to be found here than in the forested portions of the county. The public areas of Zepernick Wildlife Area and Guilford State Park can be found in the western townships of West and Hanover.

The soils found in an area are vitally important in determining the species of vegetation found on a particular site as well as the quantity and quality of the particular vegetation. (Figure 21) This fact is important for wildlife managers since the availability of the proper types of food and cover along with water will determine the species of wildlife found in that area. Wildlife habitat can be created or improved by planting appropriate vegetation or improving the fertility of the existing soils. Proper management of existing quality habitat is also very important.

Figure 21. Beaver dams pond water which encourages greater diversity of naturalized vegetative communities that benefits both game and non-game wildlife.

Columbiana County supports a large amount of woodland. These woodlands contain oak, black cherry, hickory, walnut, and beech trees which provide food for many species of wildlife. Scattered conifer stands exist which provide areas of cover. Understory species such as flowering dogwood, serviceberry, spicebush, and tartarian honeysuckle provide additional wildlife habitat. Proper timber management in the future is needed to assure a proper food source for woodland species of wildlife.

Many of the original wetlands found in the county have long disappeared. Those wetland areas which remain are providing excellent habitat for many species of wildlife which are wetland dependent. The cattails, burreeds, rice cutgrasses, spike rushes, and reed canary grasses not only provide wildlife food and cover, they also filter and clean the water which pass through the wetland. Opportunities exist to enhance some of the previously altered wetlands thus improving the water quality, ground water recharge, and wildlife habitat.

The openland habitats can be improved for upland wildlife species. The pasture land, reclaimed strip mines, cropfields, and abandoned homesteads can be managed to provide valuable nesting and feeding areas for meadowlarks, bluebirds, pheasants, quail, rabbits, deer, and a variety of songbird species. Cropfields with adjacent fencerows of brush make ideal habitat. The addition of artifical nesting structures will improve nesting opportunities for cavity nesting species of wildlife.

Additional information on habitat management or species management for wildlife can be obtained from the nearest Division of Wildlife District Office.

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 18, 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 *fai*r 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, soybeans, 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, raspberry, 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, and deer.

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

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has

limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

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

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

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

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, 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.

Construction Materials

Tables 19-Construction Materials-ENG-1 and 20-Construction Materials-ENG-2, give information about the soils as potential sources of gravel, sand, reclamation material, roadfill and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 19 ENG-1, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good, fair*, or *poor* as potential sources of gravel and 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 or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

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 tables. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of topsoil, reclamation material, or roadfill. 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.

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 21-Building Site Development-ENG-3, and 22-Building Site Development-ENG-4, 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 23-Sanitary Facilities-ENG-5 and 24-Sanitary Facilities-ENG-6 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, 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.

Agricultural Waste Management

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

Tables 25-Agricultural Waste Management shows the degree and kind of soil limitations affecting the treatment of agricultural waste, including municipal and food-processing wastewater and effluent from lagoons or storage ponds. Municipal wastewater is the waste stream from a municipality. It contains domestic waste and may contain industrial waste. It may have received primary or secondary treatment. It is rarely untreated sewage. Food-processing wastewater results from the preparation of fruits, vegetables, milk, cheese, and meats for public consumption. In places it is high in content of sodium and chloride. In the context of these tables, the effluent in lagoons and storage ponds is from facilities used to treat or store food-processing wastewater or domestic or animal waste. Domestic and food-processing wastewater is very dilute, and the effluent from the facilities that treat or store it commonly is very low in content of carbonaceous and nitrogenous material; the content of nitrogen commonly ranges from 10 to 30 milligrams per liter. The wastewater from animal waste treatment lagoons or storage ponds, however, has much higher concentrations of these materials, mainly because the manure has not been diluted as much as the domestic waste. The content of nitrogen in this wastewater generally ranges from 50 to 2,000 milligrams per liter. When wastewater is applied, checks should be made to ensure that nitrogen, heavy metals, and salts are not added in excessive amounts.

The ratings in the tables are for waste management systems that not only dispose of and treat organic waste or wastewater but also are beneficial to crops (application of manure and food-processing waste, application of sewage sludge, and disposal of wastewater by irrigation) and for waste management systems that are designed only for the purpose of wastewater disposal and treatment (overland flow of wastewater, rapid infiltration of wastewater, and slow rate treatment of wastewater).

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

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

Application of manure and food-processing waste not only disposes of waste material but also can improve crop production by increasing the

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

The ratings are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the waste is applied, and the method by which the waste is applied. The properties that affect absorption include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a fragipan, and available water capacity. The properties that affect plant growth and microbial activity include reaction, the sodium adsorption ratio, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste.

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

The content of water in the sludge ranges from about 98 percent to less than 40 percent. The sludge is considered liquid if it is more than about 90 percent water, slurry if it is about 50 to 90 percent water, and solid if it is less than about 50 percent water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the sludge is applied, and the method by which the sludge is applied. The properties that affect absorption, plant growth, and microbial activity include permeability, depth to a water table, ponding, the sodium adsorption ratio, depth to bedrock or a fragipan, available water capacity, reaction, and bulk density. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood that wind erosion or water erosion will transport the waste material from the application site. Stones, cobbles, a water table, ponding, and flooding can hinder the application of sludge.

Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a fragipan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a fragipan, bulk density, the sodium adsorption ratio, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, permeability, depth to a water table, ponding, flooding, depth to bedrock or a fragipan, stones, and cobbles affect design and construction.

Rapid infiltration of wastewater is a process in which wastewater applied in a level basin at a rate of 4 to 120 inches per week percolates through the soil. The wastewater may eventually reach the

ground water. The application rate commonly exceeds the rate needed for irrigation of cropland. Vegetation is not a necessary part of the treatment; hence, the basins may or may not be vegetated. The thickness of the soil material needed for proper treatment of the wastewater is more than 72 inches. As a result, geologic and hydrologic investigation is needed to ensure proper design and performance and to determine the risk of ground-water pollution.

The ratings in the table are based on the soil properties that affect the risk of pollution and the design, construction, and performance of the system. Depth to a water table, ponding, flooding, and depth to bedrock or a fragipan affect the risk of pollution and the design and construction of the system. Slope, stones, and cobbles also affect design and construction. Permeability and reaction affect performance.

Slow rate treatment of wastewater is a process in which wastewater is applied to land at a rate normally between 0.5 inch and 4.0 inches per week. The application rate commonly exceeds the rate needed for irrigation of cropland. The applied wastewater is treated as it moves through the soil. Much of the treated water may percolate to the ground water, and some enters the atmosphere through evapotranspiration. The applied water generally is not allowed to run off the surface. Waterlogging is prevented either through control of the application rate or through the use of tile drains, or both.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the application of waste. The properties that affect absorption include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, permeability, depth to bedrock or a cemented pan, reaction, the cation-exchange capacity, and slope. Reaction, the sodium adsorption ratio, and bulk density affect plant growth and microbial activity. The wind erodibility group, the soil erodibility factor K, and slope are considered in estimating the likelihood of wind erosion or water erosion. Stones, cobbles, a water table, ponding, and flooding can hinder the application of waste.

Water Management

Tables 26-Water Management-WMS-1, and 27-Water Management-WMS-2 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; grassed waterways; terraces and diversions; and drainage. 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. (Figure 22) 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.

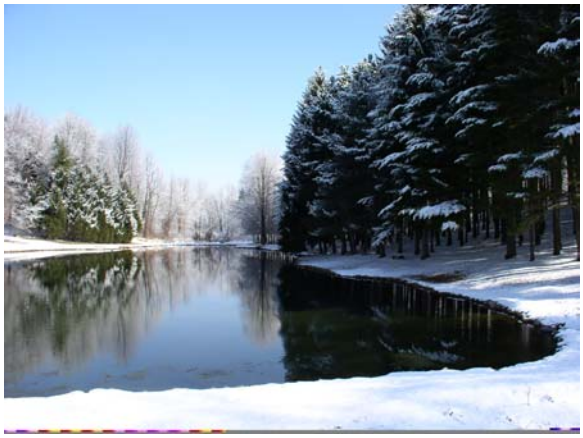


Figure 22. Many soils formed in glacial till parent materials in Columbiana County such as this Canfield soil are well suited to ponding water.

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 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 or a cemented pan affect the construction of grassed waterways. A hazard of water erosion, 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 or a cemented pan 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.

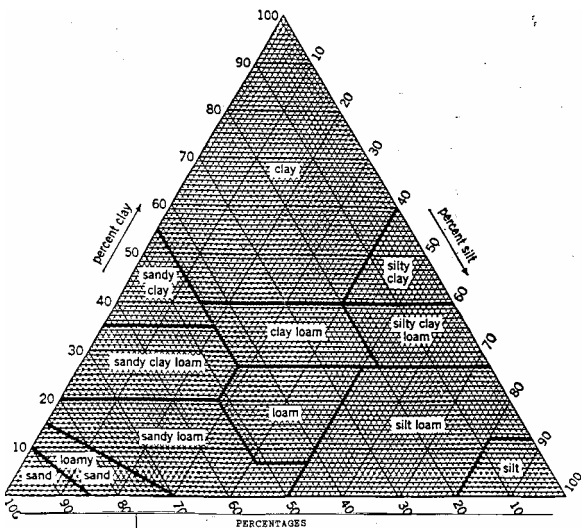
Drainage is the removal of excess surface and subsurface water from the soil. (Figure 23) How easily and effectively the soil is drained depends on the depth to bedrock, a cemented pan, or other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur. Availability of drainage outlets is not considered in the ratings.

Figure 23. Water moves through soil and bedrock preferentially along connected voids of structure surfaces and fracture lines. The icicles evidence that pattern of preferential flow in the local bedrock under Westmoreland and Berks soils.

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 in accordance with established standard procedures. During the survey, many shallow borings are made and soil characteristics examined to identify and classify the soils and to delineate them on the soil maps. Estimates of soil properties arei based on field examinations and on laboratory tests. (Figure 24) Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.



TEXTURE CLASS	PERCENTAGES SAND	SILT	CLAY	EXAMPLES
Sand	+85	-15	-10	90-6-4
Loamy sand	70-90	-30	-15	85-10-5 or 80-12-8
Sandy loam	43-85	-50	-20	75-15-10 or 50-45-5
Sandy clay loam	45-80	-28	20-35	65-10-25
Clay loam	20-45	15-53	27-40	32-33-35
Sandy clay	45-65	-20	35-55	45-10-45
Loam	23-52	28-50	7-27	45-40-15
Silt loam	20-50	50-80	12-27	25-65-20
or	—	50-80	-12	15-75-10
Silt	—	+80	-12	5-90-5
Silty clay loam	-20	40-73	27-40	10-55-35
Silty clay	-20	40-60	40-60	10-40-50
Clay	-45	-40	+40	10-30-60

Figure 24. Textural Triangle. Percentages of sand, silt and clay in the twelve basic USDA soil texture classes.

Samples are taken from some typical soil profiles and tested in the laboratory to determine particle-size distribution, reaction, organic matter content, calcium carbonate content, extractable cations, plasticity, and compaction characteristics. In addition to the data from Columbiana County, laboratory data are available from nearby or adjacent counties that have many of the same soils. These results are retained at the School of Natural Resources, Ohio State University, Columbus, Ohio; the Ohio Department of Natural Resources, Division of Soil and Water Conservation, Columbus, Ohio; and the USDA-Natural Resources Conservation Service, State Office, Columbus, Ohio.

The estimates of soil properties are shown in Tables 28-Engineering Index Properties, 29-Physical Properties of the Soils, 30-Chemical Properties of the Soils, 31-Water Features, and 32-Soil Features.

Engineering Index Properties

Table 28-Engineering Index Properties gives estimates of the engineering classifications and the range of index properties for the layers of each soil in Columbiana County.

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

USDA 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 (figure 24). "Loam", for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If 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 an engineering classification 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.

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 29-Physical Properties of the Soils shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the Columbiana County. The estimates are based on field observations and on test data for these and similar soils.

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

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller. Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In Table 29, 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. Clays 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 (Ksat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (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.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on the basis of measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are low, a change of 3 percent; moderate, 3 to 6 percent; high, more than 6 percent; and very high, greater than 9 percent.

Erosion factors are shown in Table 29 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 as follows:

1.—Coarse sands, sands, fine sands, and very fine sands.

2.—Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.

3.—Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L.—Calcareous loams, silt loams, clay loams, and silty clay loams.

4.—Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.

5.—Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.

6.—Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.

7.—Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.

8.—Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Chemical Properties

Table 30-Chemical Properties of the Soils shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in Columbiana County. 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.

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.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 30, 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.

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.

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 31-Water Features, 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.

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

Water table refers to a saturated zone in the soil. Table K1 indicates, by month, depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 32 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 (figure 25). 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).

Figure 25. Orrville silt loam, 0 to 2 percent slopes, occasionally flooded soils under floodwater. Flooding is significant in many ways to use and management of this soil.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood–prone areas at specific flood frequency levels.

Soil Features

Table 32-Soil Features gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

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

S*ubsidence* is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

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.

Classification of the Soils

The taxonomic system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999, Soil Taxonomy). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 33-Taxonomic Classification of the Soils-9th Edition of Keys to Soil Taxonomy shows the classification of the soils in Columbiana County. Miscellaneous map units are not listed in this Table. The categories are defined in the following paragraphs.

ORDER.—Twelve soil orders are recognized. The differences among orders reflect the dominant soil–forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER.—Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP.—Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP.—Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic subgroup is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other taxonomic class. Each subgroup is identified by one or more adjectives preceding the name of the great group. The adjective *Typic* identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY.—Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle–size class, mineralogy class, cation–exchange activity class, soil temperature regime, soil depth, and reaction class. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

SERIES.—The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, arranged in alphabetical order, each soil series correlated in the Columbiana County Soil Survey is described. Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional volume 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, 2003). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

Amanda Series

Depth class: Very deep
Drainage class: Well drained
Landform: Till plain
Position on the landform: Shoulder, backslope
Parent material: Loamy till
Slope range: 35 to 70 percent
Associated soils: Canfield, Ravenna, Rittman, Zepernick

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

Typical Pedon
Amanda loam, 35 to 70 percent slopes; in Columbiana County, Ohio, Salem Township, about 0.5 miles east of Franklin Square, 847 feet east and 1,527 feet south of the northwest corner of sec. 23, T. 15 N., R. 3 W.

A--0 to 5 inches; dark grayish brown (10YR 4/2) loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; very friable; many fine and medium roots; 10 percent intermixing of yellowish brown (10YR 5/6) B material; 5 percent pebbles; very strongly acid; abrupt smooth boundary.

BE--5 to 13 inches; yellowish brown (10YR 5/4) loam; weak fine subangular blocky structure; friable; many fine and medium roots; 5 percent intermixing of dark grayish brown (10YR 4/2) A material; 5 percent pebbles; very strongly acid; clear wavy boundary.

Bt1--13 to 22 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent pebbles; strongly acid; clear wavy boundary.

Bt2--22 to 32 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; many medium roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; 5 percent pebbles; strongly acid; clear wavy boundary.

Bt3--32 to 40 inches; yellowish brown (10YR 5/6) gravelly silt loam; few fine prominent strong brown (7.5YR 5/8) irregular mottles from weathered fragments in the matrix; moderate medium subangular blocky structure; friable; common fine and medium roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 15 percent pebbles; strongly acid; clear wavy boundary.

Btx--40 to 50 inches; yellowish brown (10YR 5/4) gravelly silty clay loam; few fine prominent strong brown (7.5YR 5/8) irregular mottles from weathered fragments in the matrix; weak medium and coarse subangular blocky structure; firm; 20 percent brittle; few fine and medium roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds and in pores; 25 percent pebbles; moderately acid; gradual wavy boundary.

B't1--50 to 60 inches; yellowish brown (10YR 5/4) loam; few fine prominent strong brown (7.5YR 5/8) irregular mottles from weathered fragments in the matrix; weak medium and coarse subangular blocky structure; firm; few fine and medium roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; common medium prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds and in pores; 10 percent pebbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

B't2--60 to 70 inches; yellowish brown (10YR 5/4) loam; few fine prominent strong brown (7.5YR 5/8) and very dark gray (10YR 3/1) irregular mottles from weathered fragments in the matrix; weak coarse subangular blocky structure; firm; few medium roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 10 percent pebbles; slightly effervescent; moderately alkaline; gradual wavy boundary.

C--70 to 80 inches; dark yellowish brown (10YR 4/4) loam; few fine prominent strong brown (7.5YR 5/8) irregular mottles from weathered fragments in the matrix; massive; friable; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 14 percent pebbles; neutral.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of the solum: 40 to 70 inches
Depth to carbonates: 40 to 72 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, very strongly acid to slightly alkaline in the solum

A horizon:
Hue — 10YR
Value — 4
Chroma --1 or 2
Texture of the fine earth fraction — loam
Content of rock fragments —2 to 10 percent

E horizon (where present):
Hue — 10YR
Value — 5 or 6
Chroma -- 3 or 4
Texture of the fine earth fraction — loam or silt loam
Content of rock fragments — 2 to 10 percent

B horizon:
Hue —7.5YR or 10YR

Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, loam, clay loam
Content of rock fragments — 2 to 25 percent

C horizon:
Hue —10YR
Value — 4 or 5
Chroma -- 3 or 4
Texture of the fine earth fraction — loam, silt loam
Content of rock fragments — 5 to 14 percent

The Amanda pedon has a thicker argillic horizon, more rock fragments in the middle part of the Bt horizon, and the reaction in the lower part of the subsoil is less acid and depth to carbonates is shallower than is defined as typical for the series. This should not adversely affect use and management of the soil for most purposes.

Berks Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hill
Position on the landform: Summit, shoulder, backslope
Parent material: Residuum weathered from shale interbedded with fine grained sandstone and siltstone
Slope range: 2 to 70 percent
Associated soils: Coshocton, Gilpin, Guernsey, Westmoreland

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

Typical Pedon
Berks channery silt loam, 25 to 40 percent slopes; in Columbiana County, Ohio, Wayne Township, about 1.5 miles northwest of Highlandtown, 350 feet east and 100 feet south of the northwest corner of sec. 35, T. 13 N., R. 3 W.

Oe--0 to 1 inches; partially decayed leaf litter.
A--1 to 3 inches; very dark grayish brown (10YR 3/2) channery silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; very friable; many very fine roots; 20 percent channers; strongly acid; abrupt smooth boundary.
AB--3 to 8 inches; brown (10YR 4/3) channery silt loam; weak fine subangular blocky structure; friable; common very fine roots; 30 percent channers; very strongly acid; clear wavy boundary.
Bw--8 to 22 inches; yellowish brown (10YR 5/4) extremely channery silt loam; weak medium subangular blocky structure; friable; common very fine roots; 65 percent channers; strongly acid; clear wavy boundary.
R--22 inches; light olive brown (2.5Y 5/4) fractured siltstone; few very fine roots.

Range in Characteristics
Depth to bedrock: 20 to 40 inches
Thickness of the solum: 15 to 40 inches
Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Unless limed, extremely acid to slightly acid throughout the profile

A horizon:
Hue — 10YR
Value — 3 or 4
Chroma – 2 or 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 15 to 30 percent

Ap horizon (where present):
Hue — 10YR
Value — 3 or 4
Chroma – 2 or 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 15 to 30 percent

Bw horizon:
Hue — 7.5YR to 2.5Y
Value — 4 to 6
Chroma – 4 to 6
Texture of the fine earth fraction — loam, silt loam
Content of rock fragments — 25 to 75 percent

C horizon (where present):
Hue — 7.5YR to 2.5Y
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — loam, silt loam
Content of rock fragments — 50 to 89 percent

Bethesda Series

Depth class: Very deep
Drainage class: Well drained
Landform: Surface mine on hill

Position on the landform: Summit, shoulder, backslope, footslope
Parent material: Mixture of partly weathered fine earth and fragments of shale, siltstone, and sandstone from surface mining
Slope range: 25 to 70 percent
Associated soils: Berks, Gilpin, Mechanicsburg, Westmoreland

Taxonomic class: Loamy-skeletal, mixed, active,acid, mesic Typic Udorthents

Typical Pedon
Bethesda very channery silt loam, 25 to 70 percent slopes; in Columbiana County, Ohio, Elk Run Township, about 0.75 miles northwest of Elkton, 873 feet west and 875 feet south of the northeast corner of sec. 20, T. 11 N., R. 2 W.

A--0 to 2 inches; brown (10YR 4/3) very channery silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; common fine roots; 40 percent channers; strongly acid; abrupt smooth boundary.
C1--2 to 10 inches; dark yellowish brown (10YR 4/4) very channery silty clay loam; massive; friable; few fine roots; 45 percent channers; strongly acid; clear wavy boundary.
C2--10 to 35 inches; variegated dark grayish brown (2.5Y 4/2), 60 percent, and yellowish brown (10YR 5/4), 40 percent, extremely channery silty clay loam; massive; firm; few fine roots; 50 percent channers; 15 percent parachanners; strongly acid; clear wavy boundary.
C3--35 to 55 inches; variegated dark grayish brown (2.5Y 4/2), 80 percent, and brownish yellow (10YR 6/6), 20 percent, extremely channery silty clay loam; massive; firm; few fine roots; 60 percent channers; 20 percent parachanners; common soft fragments; strongly acid; clear wavy boundary.
C4--55 to 80 inches; variegated dark grayish brown (2.5Y 4/2), 80 percent, brownish yellow (10YR 6/6), 10 percent, and very dark gray (N 3/0), 10 percent, extremely channery silty clay loam; massive; firm; 55 percent channers; 20 percent parachanners; strongly acid.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of solum: 0 to 7 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Acid sandstone, siltstone and shale; some coal
Reaction: Unless limed, extremely acid to strongly acid throughout the profile

A horizon:
Hue —10YR
Value — 4 or 5
Chroma – 2 to 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 35 to 55 percent

Ap horizon (where present):
Hue —10YR
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 35 to 55 percent

C horizon:
Hue — 7.5YR to 2.5Y or neutral
Value — 4 to 6
Chroma -- 0 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam
Content of rock fragments — 35 to 80 percent (5 to 34 percent in thin upper subhorizons)

Bogart Series

Depth class: Very deep
Drainage class: Moderately well drained
Landform: Stream terrace
Positions on the landform: Tread, riser
Parent material: Stratified glaciofluvial outwash deposits
Slope range: 0 to 12 percent
Associated soils: Chili, Conotton, Holly, Jimtown, Lobdell, Orrville

Taxonomic class: Fine-loamy, mixed, active, mesic Aquic Hapludalfs

Typical pedon
Bogart silt loam, 2 to 6 percent slopes; in Stark County, Ohio, Lake Township, section 20, T. 12 N., R. 8 W.

Ap--0 to 7 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium subangular blocky structure parting to moderate fine and medium granular; friable; many fine and common medium and coarse roots throughout; 10 percent pebbles; slightly acid; abrupt smooth boundary.
BE--7 to 16 inches; strong brown (7.5YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; slightly plastic when

wet; common fine roots throughout; 10 percent pebbles; strongly acid; gradual wavy boundary.

Bt1--16 to 22 inches; strong brown (7.5YR 5/6) silt loam; strong fine and medium subangular blocky structure; friable; common fine roots throughout; few distinct brown (7.5YR 5/4) clay films on vertical faces of peds; few fine prominent grayish brown (10YR 5/2) iron depletions throughout; 14 percent pebbles; strongly acid; gradual wavy boundary.

Bt2--22 to 28 inches; yellowish brown (10YR 5/4) gravelly clay loam; moderate medium and coarse subangular blocky structure; firm; few fine roots throughout; common faint light yellowish brown (10YR 6/4) clay films on all faces of peds; many medium distinct light brownish gray (10YR 6/2) and grayish brown (10YR 5/2) iron depletions throughout; many medium prominent reddish yellow (7.5YR 6/6) masses of iron oxide accumulation throughout; few medium distinct very dark brown (10YR 2/2) iron-manganese stains on faces of peds; few clay enriched masses; 30 percent pebbles; strongly acid; gradual wavy boundary.

BC--28 to 42 inches; yellowish brown (10YR 5/4) very gravelly sandy loam; weak fine and medium subangular blocky structure; very friable; few fine roots throughout; very few faint light yellowish brown (10YR 6/4) clay films on surfaces along root channels; many medium distinct gray (10YR 6/1) iron depletions throughout; many medium prominent reddish yellow (7.5YR 6/6) masses of iron oxide accumulation throughout; few prominent black (N 2/0) manganese stains on pebbles; 60 percent pebbles in lower part of horizon; strongly acid; clear wavy boundary.

C--42 to 60 inches; yellowish brown (10YR 5/4) extremely gravelly sand; single grain; loose; 60 percent pebbles; moderately acid.

Range in characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 30 to 60 inches
Depth to carbonates: 58 to more than 80 inches
Kind of rock fragments: Igneous pebbles, sandstone, siltstone, shale, limestone
Reaction: Unless limed, very strongly acid to slightly acid in the solum, the substratum is strongly acid to slightly alkaline

A or Ap horizon:
Hue — 10YR
Value — 3 or 4
Chroma – 2 or 3
Texture of the fine earth fraction — loam, silt loam
Content of rock fragments — 0 to 25 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — commonly stratifications of loam, silt loam, clay loam, sandy loam; less commonly stratifications of additional textures are present
Content of rock fragments — 0 to 50 percent

C horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 2 to 4
Texture of the fine earth fraction — stratified or uniform loam, sandy loam, loamy sand; less commonly silt loam, silty clay loam, sand or strata of pebbles are present as thin substrata
Content of rock fragments — 0 to 60 percent

Calcutta Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Stream terrace
Position on the landform: Tread
Parent material: Loess over outwash over residuum
Slope range: 0 to 3 percent
Associated soils: Berks, Coshocton, Rainsboro, Tioga

Taxonomic class: Fine-silty, mixed, superactive, mesic Aeric Fragiaquults

Typical Pedon

Calcutta silt loam, 0 to 3 percent slopes; in Columbiana County, Ohio, Elk Run Township, about 2 miles southeast of Elkton, 2,382 feet west and 881 feet north of the southeast corner of sec. 26, T. 11 N., R. 2 W.

Oe--0 to 1 inch; very dark grayish brown (10YR 3/2) partially decayed leaf litter; abrupt wavy boundary.

A-- 1 to 5 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; many fine and medium roots; few pebbles; extremely acid; abrupt smooth boundary.

BE-- 5 to 9 inches; grayish brown (10YR 5/2) silt loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; common fine and few medium prominent dark brown (7.5YR 3/2) rounded firm iron-manganese nodules in the matrix; extremely acid; clear wavy boundary.

Bt1-- 9 to 14 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; common fine roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; 60 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds and in pores; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; extremely acid; clear wavy boundary.

Bt2-- 14 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to moderate medium platy; firm; few fine roots; common prominent gray (N 5/0) clay films on vertical faces of peds and common distinct brown (7.5YR 5/4) clay films on faces of peds; 40 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds and in pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; extremely acid; clear wavy boundary.

Btx1-- 21 to 27 inches; yellowish brown (10YR 5/4) silt loam; weak coarse prismatic structure parting to moderate medium platy; very firm; few fine roots; common prominent gray (N 5/0) clay films on vertical faces of peds and common distinct brown (7.5YR 5/4) clay films on faces of peds; 50 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds and in pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 5 percent pebbles; 20 percent brittle; extremely acid; clear wavy boundary.

2Btx2-- 27 to 37 inches; yellowish brown (10YR 5/4) loam; weak very coarse prismatic structure parting to moderate medium platy; very firm; few fine roots; common prominent gray (N 5/0) clay films on vertical faces of prisms and common distinct brown (7.5YR 5/4) clay films on faces of peds; 30 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds and in pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation between the iron depletions and prism interiors; common fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 5 percent pebbles; 70 percent brittle; extremely acid; clear wavy boundary.

2Btx3-- 37 to 46 inches; yellowish brown (10YR 5/4) loam; weak very coarse prismatic structure parting to moderate medium platy; very firm; few fine roots; common prominent gray (N 5/0) clay films on vertical faces of prisms and common distinct brown (7.5YR 5/4) clay films on faces of peds; 20 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation between the iron depletions and prism interiors; common fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 10 percent pebbles; 70 percent brittle; extremely acid; clear wavy boundary.

2B't1-- 46 to 50 inches; yellowish brown (10YR 5/4) loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few fine roots; common prominent gray (N 5/0) and common distinct brown (7.5YR 5/4) clay films on faces of peds; 20 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 10 percent pebbles; extremely acid; clear wavy boundary.

2B't2-- 50 to 56 inches; brown (7.5YR 4/4) sandy loam; weak very coarse subangular blocky structure; friable; few fine roots; common prominent gray (N 5/0) and common faint brown (7.5YR 5/4) clay films on faces of peds; 10 percent medium prominent gray (10YR 6/1) iron depletions on faces of peds and in pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; common fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 10 percent pebbles; extremely acid; clear wavy boundary.

2B't3-- 56 to 66 inches; brown (7.5YR 4/4) gravelly sandy loam; weak very coarse subangular blocky structure parting to weak medium subangular blocky; friable; few fine roots; common faint brown (7.5YR 5/4) clay

films on faces of peds; 15 percent pebbles; extremely acid; gradual wavy boundary.

2B't4-- 66 to 76 inches; reddish brown (5YR 4/4) gravelly sandy loam; weak coarse subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 30 percent pebbles; extremely acid; gradual wavy boundary.

2B't5-- 76 to 80 inches; reddish brown (5YR 4/4) very gravelly sandy loam; weak coarse subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 40 percent pebbles; extremely acid; gradual wavy boundary.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of the solum: 60 to more than 80 inches
Thickness of loess mantle: Averages 20 to 36 inches
Depth to fragipan: 20 to 30 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Unless limed, extremely acid to moderately acid throughout the profile

A horizon:
Hue — 10YR
Value — 4
Chroma – 1 or 2
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 2 percent

BE horizon :
Hue — 10YR
Value — 4 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 2 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 2 percent

2Btx horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma – 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, loam, clay loam, sandy loam
Content of rock fragments — 2 to 40 percent

2B't or 2BC horizon:
Hue — 5YR, 7.5YR, 10YR
Value — 4 to 6
Chroma – 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, loam, clay loam, sandy loam
Content of rock fragments — 2 to 40 percent

3BC horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam, loam
Content of rock fragments — 5 to 50 percent

3C horizon:
Hue — 10YR, 2.5Y or neutral
Value — 4 to 6
Chroma -- 0 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam, loam
Content of rock fragments — 5 to 59 percent

Canfield Series

Depth class: Very deep
Drainage class: Moderately well drained
Landform: Till plain
Position on the landform: Summit, shoulder, backslope
Parent material: Loamy till
Slope range: 2 to 35 percent
Associated soils: Ravenna, Zepernick

Taxonomic class: Fine-loamy, mixed, active, mesic Oxyaquic* Fragiudalfs

Typical Pedon
Canfield silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Salem Township, about 2 miles south of Salem, 1,875 feet south and 520 feet west of the northeast corner of sec. 18, T. 15 N., R. 3 W.

Ap--0 to 11 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many very fine roots; 2 percent pebbles; strongly acid; abrupt smooth boundary.

Bt1--11 to 17 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common very fine roots; few faint yellowish brown (10YR 5/4) clay films on

faces of peds; 5 percent pebbles; strongly acid; clear smooth boundary.

Bt2--17 to 22 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent medium prominent light brownish gray (10YR 6/2) irregular iron depletions in the matrix; few medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 5 percent pebbles; strongly acid; clear wavy boundary.

Btx1--22 to 28 inches; dark yellowish brown (10YR 4/4) loam; moderate very coarse prismatic structure parting to weak medium subangular blocky; firm; few very fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent medium distinct light brownish gray (10YR 6/2) clay depletions along faces of prisms; 15 percent medium distinct gray (10YR 6/1) and light brownish gray (10YR 6/2) irregular iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 10 percent pebbles; 70 percent brittle; strongly acid; clear wavy boundary.

Btx2--28 to 45 inches; dark yellowish brown (10YR 4/4) loam; moderate very coarse prismatic structure; firm; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; 15 percent medium distinct gray (10YR 6/1) clay depletions along faces of prisms with a fine rind of strong brown (7.5YR 5/8) iron accumulation between the clay depletion and prism interior; 15 percent medium distinct gray (10YR 6/1) irregular iron depletions in the matrix; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 10 percent pebbles; 80 percent brittle; strongly acid; clear wavy boundary.

BC--45 to 58 inches; dark yellowish brown (10YR 4/4) loam; weak medium and coarse subangular blocky structure; friable; 15 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions and few fine prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 10 percent pebbles; strongly acid; clear wavy boundary.

C--58 to 80 inches; yellowish brown (10YR 5/4) loam; massive; firm; 10 percent medium distinct gray (10YR 6/1) irregular iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 10 percent pebbles; moderately acid.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 45 to 60 inches
Depth to fragipan: 18 to 30 inches
Depth to carbonates: 50 to 100 inches
Kind of rock fragments: Sandstone, shale, igneous
Reaction: Unless limed, strongly or very strongly acid above the fragipan, very strongly acid to neutral in the fragipan, strongly acid to slightly alkaline below the fragipan

Ap horizon:
Hue — 10YR
Value — 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 2 to 10 percent

E horizon (where present):
Hue — 10YR
Value — 4 to 6
Chroma -- 2 to 4
Texture of the fine earth fraction — silt loam, loam, fine sandy loam
Content of rock fragments — 2 to 10 percent

Bt horizon:
Hue — 7.5YR,10YR
Value — 4 or 5
Chroma – 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, loam
Content of rock fragments — 2 to 10 percent

Btx horizon:
Hue — 7.5YR,10YR
Value — 4 or 5
Chroma – 4 to 6
Texture of the fine earth fraction — silt loam, loam
Content of rock fragments — 5 to 20 percent

C horizon:
Hue — 10YR,2.5Y
Value — 4 or 5

Chroma – 3 or 4
Texture of the fine earth fraction — silt loam, loam,sandy loam
Content of rock fragments — 5 to 30 percent

* During the Columbiana soil survey the classification of the Canfield series was reclassified as fine-loamy, mixed, mesic Aquic Fragiudalfs. Consequently,the map units for Columbiana County become taxadjuncts to the series. This should not adversely affect use and management of the soil for most purposes.

Carlisle Series

Depth class: Very Deep
Drainage class: Very poorly drained
Landform: Depression on ground moraine, outwash plain
Position on the landform: Toeslope
Parent material: Woody and herbaceous organic materials
Slope range: 0 to 2 percent
Associated soils: Canfield, Chili, Ravenna

Taxonomic class: Euic, mesic Typic Haplosaprists

Typical Pedon
Carlisle muck, 0 to 1 percent slopes; in Columbiana County, Ohio, Fairfield Township, about 0.75 miles east of Columbiana, about 1,140 feet north and 80 feet east of the southwest corner of sec. 2, T. 12 N., R. 2 W.

0a1--0 to 8 inches; black (10YR 2/1) broken face, very dark brown (10YR 2/2) rubbed muck; 8 percent fibers, less than 5 percent rubbed; 5 percent weakly decomposed wood fragments; weak fine granular structure; friable; moderately acid; abrupt smooth boundary.
0a2--8 to 30 inches; black (10YR 2/1) broken face, black (10YR 2/1) rubbed muck; 10 percent fibers, less than 5 percent rubbed; weak coarse granular structure; friable; 15 percent wood fragments ¼ to 2 inches in diameter; moderately acid; clear smooth boundary.
0a3--30 to 50 inches; black (10YR 2/1) broken face, black (10YR 2/1) rubbed muck; 30 percent fiber, 10 percent rubbed; massive; friable; 20 percent wood fragments ¼ to 2 inches in diameter; moderately acid; clear smooth boundary.
0a4--50 to 65 inches; black (10YR 2/1) broken face, black (10YR 2/1) rubbed muck; 20 percent fiber, 8 percent rubbed; massive; friable; 15 percent wood fragments ¼ to 2 inches in diameter; slightly acid; clear smooth boundary.
0a5--65 to 80 inches; black (10YR 2/1) broken face, black (10YR 2/1) rubbed muck; 40 percent fiber, 15 percent rubbed; massive; friable; few wood fragments ¼ to 2 inches in diameter; slightly acid.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of the organic material: More than 60 inches
Depth to carbonates: 58 to more than 80 inches
Kind of fragments: Woody fragments
Reaction: Unless limed, very strongly acid to slightly alkaline above 60 inches

Surface tier:
Hue — 5YR, 7.5YR, 10YR
Value — 2
Chroma -- 1 or 2
Texture – sapric material
Content of woody fragments — 5 to 30 percent

Subsurface tier:
Hue — 5YR, 7.5YR, 10YR
Value — 2 or 3
Chroma – 0 to 3
Texture – sapric material
Content of woody fragments — 15 to 30 percent

Bottom tier:
Hue — 5YR, 7.5YR, 10YR
Value — 2 or 3
Chroma – 0 to 3
Texture – sapric material
Content of woody fragments — 15 to 30 percent

Chili Series

Depth class: Very deep
Drainage class: Well drained
Landform: Stream terrace, kame
Position on the landform: Tread, riser on terrace; summit, shoulder, backslope, footslope on kame
Parent material: Glaciofluvial outwash
Slope range: 0 to 20 percent
Associated soils: Canfield, Conotton, Fitchville, Zepernick

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

Typical Pedon
Chili silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Fairfield Township, about 2.25 miles east of Columbiana, 1,774 feet south and 2,133 feet west of the northeast corner of sec. 12, T. 12 N., R. 2 W.

Ap--0 to 13 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many very fine roots; 5 percent pebbles; slightly acid; abrupt smooth boundary.
Bt1--13 to 18 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 10 percent pebbles; slightly acid; clear wavy boundary.
2Bt2--18 to 23 inches; brown (7.5YR 4/4) gravelly loam; moderate medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 30 percent pebbles; strongly acid; clear wavy boundary.
2Bt3--23 to 31 inches; brown (7.5YR 4/4) very gravelly sandy clay loam; weak medium subangular blocky structure; friable; few very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 35 percent pebbles; strongly acid; clear wavy boundary.
2Bt4--31 to 41 inches; brown (7.5YR 4/4) gravelly sandy loam; weak medium subangular blocky structure; firm, few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and bridging between sand grains; 30 percent pebbles; strongly acid; clear wavy boundary.
2Bt5--41 to 50 inches; brown (7.5YR 4/4) very gravelly sandy loam; weak medium subangular blocky structure; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and bridging between sand grains; 50 percent pebbles; strongly acid; clear wavy boundary.
2C1--50 to 64 inches; strong brown (7.5YR 5/6) and yellowish brown (10YR 5/4) gravelly loamy sand; single grain; loose; 25 percent pebbles; strongly acid; gradual wavy boundary.
2C2--64 to 80 inches; dark yellowish brown (10YR 4/4) and brown (7.5YR 4/4) very gravelly loamy sand with a thin strata of sandy loam; single grain; loose; 50 percent pebbles; strongly acid.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of the solum: 45 to 80 inches
Depth to carbonates: 60 to more than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, very strongly acid to slightly acid in the A and Bt horizons. It is strongly acid to slightly acid in the BC, 2BC, C and 2C horizons and ranges to slightly alkaline below 60 inches.

Ap horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 2 to 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 14 percent

A horizon:
Hue — 10YR
Value — 2 or 3
Chroma – 2 or 3
Texture of the fine earth fraction — loam
Content of rock fragments — 0 to 14 percent

Bt or 2Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, loam, sandy loam, clay loam, and sandy clay loam
Content of rock fragments — less than 20 inch depth - 5 to 30 percent
between 20 and 40 inch depth – 15 to 50 percent
below 40 inch depth – 25 to 59 percent

C or 2C horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 2 to 6
Texture of the fine earth fraction — loamy sand or sand and commonly is stratified
Content of rock fragments — 25 to 59 percent

Conotton Series

Depth class: Very deep
Drainage class: Well drained
Landform: Stream terrace, kame terrace
Position on the landform: Tread, riser
Parent material: Glaciofluvial outwash
Slope range: 2 to 15 percent
Associated soils: Chili, Hazleton, Tioga, Westmoreland

Taxonomic class: Loamy-skeletal, mixed, active, mesic Typic Hapludalfs

Typical Pedon
Conotton gravelly loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Middleton Township, about 0.75 miles south of Negley, 1,421 feet west and 1,126 feet south of the northeast corner of sec. 14 T. 7 N., R. 1. W.

Ap--0 to 10 inches; brown (10YR 4/3) gravelly loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; common fine and medium roots; 20 percent pebbles; moderately acid; abrupt smooth boundary.
BA--10 to 15 inches; 60 percent strong brown (7.5YR 5/6) and 40 percent brown (10YR 4/3) very gravelly loam; weak fine and medium subangular blocky structure; friable; few fine roots; 40 percent pebbles; moderately acid; clear wavy boundary.
Bt1--15 to 21 inches; strong brown (7.5YR 5/6) very gravelly sandy loam; weak fine subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 5/4) clay films on faces of peds and bridging sand and pebbles; 35 percent pebbles; moderately acid; clear wavy boundary.
Bt2--21 to 30 inches; yellowish brown (10YR 5/6) very gravelly sandy loam; weak fine subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 5/4) clay films on faces on peds and bridging sand and pebbles; 45 percent pebbles; moderately acid; gradual wavy boundary.
Bt3--30 to 37 inches; yellowish brown (10YR 5/6) very gravelly sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds and bridging sand and pebbles; 50 percent pebbles; moderately acid; clear wavy boundary.
Bt4--37 to 50 inches; brown (7.5YR 4/4) very gravelly sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds and bridging sand and pebbles; 55 percent pebbles; moderately acid; gradual wavy boundary.
Bt5--50 to 60 inches; brown (7.5YR 4/4) extremely gravelly sandy loam; weak fine subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 4/4) clay films on faces of peds and bridging sand and pebbles; 60 percent pebbles; moderately acid; gradual wavy boundary.
Bt6--60 to 80 inches; brown (7.5YR 4/4) very gravelly sandy loam; few fine prominent yellowish brown (10YR 5/6) irregular mottles around rock fragments; weak fine subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 4/4) clay films on faces of peds and bridging sand and pebbles; 55 percent pebbles; slightly acid; gradual wavy boundary.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of the solum: 40 to more than 80 inches
Depth to carbonates: 65 to more than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, strongly acid to slightly acid in the Ap, very strongly acid to moderately acid in the upper part and strongly acid or moderately acid in the lower part of the Bt, moderately acid to slightly alkaline in the C

A horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 2 or 3
Texture of the fine earth fraction — loam
Content of rock fragments — 10 to 34 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — loam, sandy loam
Content of rock fragments — 35 to 59 percent

C horizon:
Hue — 7.5 YR, 10YR
Value — 4 or 5
Chroma -- 2 to 4
Texture of the fine earth fraction — loamy sand, sand
Content of rock fragments — 35 to 65 percent

Coshocton Series

Depth class: Deep or very deep
Drainage class: Moderately well drained
Landform: Hill
Position on the landform: Summit, shoulder, backslope, footslope
Parent material: Loamy colluvium and residuum weathered from interbedded shale, siltstone, and sandstone
Slope range: 2 to 25 percent
Associated soils: Gilpin, Guernsey, Westmoreland

Taxonomic class: Fine-loamy, mixed, active, mesic Aquultic Hapludalfs

Typical Pedon
Coshocton silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Center Township, about 2 miles north of Gavers, 1,460 feet south and 1,600 feet east of the northwest corner of sec. 33, T. 14 N., R. 3 W.

Ap--0 to 11 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; 5 percent channers; strongly acid; abrupt smooth boundary.

Bt1--11 to 18 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent channers; strongly acid; clear wavy boundary.

Bt2--18 to 23 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 10 percent medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; common medium prominent yellowish red (5YR 5/6) irregular masses of iron accumulation in the matrix; 5 percent channers; strongly acid; clear wavy boundary.

Bt3--23 to 33 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct pale brown (10YR 6/3) clay films on faces of peds; 10 percent medium prominent gray (10YR 6/1) clay depletions on vertical faces of peds; 15 percent medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; 10 percent channers; strongly acid; clear wavy boundary.

Bt4--33 to 40 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common distinct pale brown (10YR 6/3) clay films on faces of peds; 10 percent medium prominent gray (10YR 6/1) clay depletions on vertical faces of peds; 15 percent medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; 10 percent channers; strongly acid; clear wavy boundary.

Bt5--40 to 45 inches; yellowish brown (10YR 5/6) silty clay loam; weak medium subangular blocky structure; friable; few faint yellowish brown (10YR 5/4) clay films on faces of peds; and few prominent gray (10YR 5/1) clay films on vertical faces of peds; 10 percent channers; strongly acid; clear wavy boundary.

C1--45 to 52 inches; yellowish brown (10YR 5/6) very channery silty clay loam; massive; firm; 5 percent fine distinct gray (10YR 6/1) irregular iron depletions in the matrix; common fine distinct very dark grayish brown (10YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 40 percent channers; strongly acid; clear wavy boundary.

C2--52 to 66 inches; yellowish brown (10YR 5/4) silty clay loam; massive; firm; 5 percent medium distinct gray (10YR 6/1) irregular iron depletions in the matrix; and few medium distinct brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 10 percent channers; strongly acid; gradual wavy boundary.

C3--66 to 70 inches; yellowish brown (10YR 5/4) channery silty clay loam; massive; firm; 5 percent medium distinct gray (10YR 6/1) irregular iron depletions; few medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 20 percent channers; strongly acid; abrupt smooth boundary.

R--70 inches; fractured sandstone bedrock.

Range in Characteristics
Depth to bedrock: 40 to greater than 80 inches
Thickness of solum: 30 to 50 inches
Depth to carbonates: None above the bedrock
Kind of rock fragments: Sandstone, siltstone and shale
Reaction: Unless limed, extremely acid to moderately acid in the Ap, extremely acid to strongly acid in the Bt, very strongly acid to moderately acid in the C.

Ap horizon:
Hue — 10YR
Value — 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 2 to 15 percent

A horizon:
Hue — 10YR
Value — 2 or 3
Chroma -– 2 to 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 2 to 15 percent

Bt horizon (upper part):
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam
Content of rock fragments — 2 to 15 percent

Bt horizon (lower part):
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, loam, silty clay
Content of rock fragments — 10 to 34 percent

C horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — loam, silty clay loam, clay loam, silty clay
Content of rock fragments — 10 to 50 percent

Doles Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Stream terrace
Position on the landform: Tread
Parent material: Loess over silty colluvium or old alluvium
Slope range: 0 to 3 percent
Associated soils: Berks, Coshocton, Omulga, Tioga

Taxonomic class: Fine-silty, mixed, active, mesic Aeric Fragiaqualfs

Typical Pedon
Doles silt loam, 0 to 3 percent slopes; in Columbiana County, Ohio, Madison Township, about 1.5 miles east of West Point, 1,120 feet west and 2,450 feet north of the southeast corner of sec. 10, T. 10 N., R. 2 W.

Ap--0 to 11 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and medium granular structure; friable; many fine and medium roots; few fine prominent very dark gray (N 3/0) friable iron-manganese nodules in the matrix; neutral; abrupt smooth boundary.

BE--11 to 15 inches; light brownish gray (2.5Y 6/2) silt loam; weak fine and medium subangular blocky structure; friable; common fine roots; few fine prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) rounded firm masses of iron-manganese accumulation in the matrix; strongly acid; clear wavy boundary.

Bt--15 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate coarse and medium subangular structure; firm; common fine roots; common distinct gray (10YR 6/1) and few faint yellowish brown (10YR 5/4) clay films on faces of peds; common distinct light brownish gray (10YR 6/2) silt coats on faces of peds; 60 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds; 10 percent fine distinct gray (10YR 6/1) irregular iron depletions in the matrix; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation lining pores; strongly acid; clear wavy boundary.

Btx1--24 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to weak fine and medium platy; firm; few fine roots; common prominent gray (N 5/0) and faint yellowish brown (10YR 5/4) clay films on faces of peds; few distinct gray (10YR 6/1) silt coats on faces of peds; 50 percent medium prominent gray (N 6/0) iron depletions lining pores; 10 percent fine and medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; common fine prominent strong brown (7.5YR 5/8) masses of iron accumulation lining pores; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 40 percent brittle; strongly acid; clear wavy boundary.

2Btx2--30 to 40 inches; yellowish brown (10YR 5/4) silt loam; moderate very coarse prismatic structure parting to weak medium platy; very firm; few fine roots; common prominent gray (N 5/0) and few faint yellowish brown (10YR 5/4) clay films on faces of peds; 50 percent medium prominent gray (N 6/0) iron depletions lining pores and 5 percent fine and medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation lining pores; common fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 5 percent

channers; 60 percent brittle; very strongly acid; clear wavy boundary.

2Btx3--40 to 48 inches; yellowish brown (10YR 5/6) silt loam; moderate very coarse prismatic structure parting to moderate medium platy; very firm; few fine roots; common prominent gray (N 5/0) and few faint yellowish brown (10YR 5/4) clay films on faces of peds; 20 percent medium prominent gray (N 6/0) iron depletions lining pores; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix associated to pores; common fine prominent dark brown (7.5YR3/2) masses of iron-manganese accumulation lining pores; 2 percent channers; 60 percent brittle; strongly acid; clear wavy boundary.

2Btx4--48 to 60 inches; yellowish brown (10YR 5/6) silt loam; weak very coarse prismatic structure parting to weak medium platy; very firm; few fine roots; common prominent gray (N 5/0) clay films on faces of peds; 15 percent medium prominent gray (N 6/0) iron depletions lining pores; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix associated to pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 5 percent channers; 60 percent brittle; strongly acid; clear wavy boundary.

2C1--60 to 72 inches; brownish yellow (10YR 6/6) silt loam; massive; firm; 10 percent medium prominent gray (N 6/0) iron depletions lining pores; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 2 percent channers; strongly acid; gradual wavy boundary.

2C2--72 to 77 inches; yellowish brown (10YR 5/6) silt loam; massive; firm; 10 percent medium prominent gray (N 6/0) iron depletions lining pores; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix associated to pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 5 percent channers; moderately acid; gradual wavy boundary.

2C3--77 to 80 inches; yellowish brown (10YR 5/6) silt loam; massive; firm; 15 percent medium prominent gray (N 6/0) iron depletions lining pores and in the matrix; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix associated to pores; many fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 5 percent channers; moderately acid.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 60 to 80 inches
Thickness of loess mantle: Up to 30 inches
Depth to fragipan: 20 to 30 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone and shale
Reaction: Unless limed, very strongly acid to moderately acid throughout the profile

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

BE horizon:
Hue — 10YR, 2.5Y
Value — 4 to 6
Chroma – 1 to 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Bt or 2Bt horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma – 2 to 4
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 5 percent

Btx or 2Btx horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 10 percent

C and 2C horizon:
Hue — 7.5YR, 10YR
Value — 4 to 7
Chroma --1 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 14 percent

Ernest Series

Depth class: Very deep

Drainage class: Moderately well drained
Landform: Hill
Position on the landform: Footslope
Parent material: Loamy colluvium weathered from interbedded sedimentary rock
Slope range: 6 to 25 percent
Associated soils: Berks, Coshocton, Gilpin, Hazleton, Westmoreland

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aquic Fragiudults

Typical Pedon
Ernest silt loam, 8 to 15 percent slopes, in Beaver County Pennsylvania, New Sewickley Township, on the east side of Route T596, 0.1 mile south of its junction with 78 spur (Big Knob Road), and 3.5 miles northeast of Rochester.

Ap--0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; moderate fine granular structure; very friable; 5 percent rock fragments; moderately acid; abrupt smooth boundary.
BE--8 to 12 inches; yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; 5 percent rock fragments; strongly acid; clear wavy boundary.
Bt1--12 to 17 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; common thin clay films on faces of peds and in pores; 5 percent rock fragments; strongly acid; clear wavy boundary.
Bt2--17 to 24 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; common fine and medium distinct olive yellow (2.5Y 6/6) iron masses in the matrix; many thin clay films on faces of peds and in pores; few fine black (10YR 3/1) coatings on ped faces; 10 percent rock fragments; very strongly acid; gradual wavy boundary.
Btx--24 to 44 inches; strong brown (7.5YR 5/6) silt loam; strong very coarse prismatic structure parting to weak thick and very thick platy structure; very firm; brittle; common gray (5Y 6/1) vertical seams on primary structure surfaces; many thin clay films on ped faces; common fine distinct gray (10YR 6/2) iron depletions on vertical faces of peds; 5 percent rock fragments; strongly acid; clear wavy boundary.
C--44 to 60 inches; yellowish brown (10YR 5/6) silt loam; massive; firm; common fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 10 percent rock fragments; very strongly acid.

Range in characteristics
Depth to bedrock: More than 80 inches
Thickness of the solum: 36 to greater than 80 inches
Depth to fragipan: 20 to 36 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Unless limed, very strongly acid or strongly acid throughout the profile

A or Ap horizon:
Hue — 10YR
Value — 3 or 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 20 percent

E horizon (where present):
Hue — 10YR
Value — 4 or 5
Chroma – 2 to 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 20 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma – 3 to 8
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 30 percent

Btx horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma -- 2 to 8
Texture of the fine earth fraction — silt loam, loam, clay loam, silty clay loam
Content of rock fragments — 5 to 40 percent

C horizon:
Hue — 7.5YR, 10YR
Value — 4 to 7
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam, silty clay loam
Content of rock fragments — 5 to 50 percent

Fairpoint Series

Depth class: Very Deep

Drainage class: Well drained
Landform: Surface mine on hill
Position on the landform: Summit, shoulder, backslope, footslope
Parent material: Mixture of partly weathered fine earth and fragments of shale, siltstone, sandstone and coal from surface mining operations
Slope range: 0 to 70 percent
Associated soils: Berks, Canfield, Gilpin, Mechanicsburg, Westmoreland

Taxonomic class: Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents

Typical Pedon
Fairpoint very channery silt loam, 8 to 25 percent slopes; in Columbiana County, Ohio, Wayne Township, about 1.75 miles northwest of Gavers, 100 feet south and 1,475 feet east of the northwest corner of sec. 8, T. 13 N., R. 3 W.

Ap--0 to 4 inches; dark grayish brown (10YR 4/2) very channery silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; many fine roots; 35 percent channers; moderately acid; abrupt smooth boundary.
C1--4 to 14 inches; variegated dark grayish brown (2.5Y 4/2), 90 percent, and yellowish brown (10YR 5/6), 10 percent, very channery silty clay loam; massive; firm; common fine roots; 45 percent channers; 10 percent parachanners; moderately acid; clear wavy boundary.
C2--14 to 25 inches; variegated dark grayish brown (2.5Y 4/2), 80 percent, and yellowish brown (10YR 5/6), 20 percent, very channery clay loam; massive; firm; few fine roots; 45 percent channers; 10 percent parachanners; neutral; clear wavy boundary.
C3--25 to 80 inches; variegated dark grayish brown (2.5Y 4/2), 60 percent, yellowish brown (10YR 5/6), 20 percent, and gray (N 5/0), 20 percent, very channery silty clay loam; massive; firm; 45 percent channers; 10 percent parachanners; neutral.

Range in Characteristics
Depth to bedrock: More than 60 inches
Thickness of solum: 0 to 8 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, coal
Reaction: Unless limed, moderately acid to neutral throughout the profile

A horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 to 4
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 35 to 55 percent

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 to 4
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 2 to 14 percent

C horizon:
Hue — 7.5YR, 10YR, 2.5Y, or neutral
Value — 3 to 6
Chroma -- 0 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam
Content of rock fragments — 35 to 70 percent; thin upper subhorizons may contain 20 to 34 percent rock fragments

Fitchville Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Stream terrace
Position on the landform: Tread
Parent material: Stratified glaciolacustrine sediments
Slope range: 0 to 6 percent
Associated soils: Canfield, Chili, Glenford, Wick, Zepernick

Taxonomic class: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon
Fitchville silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Knox Township, about 2 miles north of North Georgetown, 243 feet west and 591 feet south of the northeast corner of sec. 13, T. 17 N., R. 5 W.

Ap--0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; many fine and medium roots; 1 percent pebbles; strongly acid; abrupt smooth boundary.
Btg--8 to 12 inches; gray (10YR 5/1) silt loam; weak medium and coarse subangular blocky structure; friable; common fine roots; few faint

gray (10YR 5/1) clay films on faces of peds and in pores; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation lining pores; 1 percent pebbles; strongly acid; clear wavy boundary.

Bt1--12 to 20 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; many distinct gray (10YR 5/1) clay films on faces of peds and in pores; 30 percent medium distinct gray (10YR 5/1) irregular iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding iron depletions; 1 percent pebbles; strongly acid; clear wavy boundary.

Bt2--20 to 25 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate coarse subangular blocky structure; firm; few fine roots; many prominent gray (N 5/0) clay films on faces of peds and in pores; 15 percent medium distinct gray (10YR 5/1) iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding iron depletions; 1 percent pebbles; moderately acid; clear wavy boundary.

Bt3--25 to 30 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate coarse subangular blocky structure; firm; few fine roots; many prominent gray (N 5/0) clay films on faces of peds and in pores; 20 percent medium prominent gray (10YR 5/1) irregular iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix surrrounding iron depletions; 1 percent pebbles; moderately acid; gradual wavy boundary.

Bt4--30 to 36 inches; variegated yellowish brown (10YR 5/4), 70 percent, brown (7.5YR 4/4), 30 percent, loam; moderate coarse subangular blocky structure; firm; few fine roots; few faint yellowish brown (10YR 5/4) and common prominent gray (N 5/0) clay films on faces of peds and in pores; 20 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix Associated to pores; 2 percent pebbles; moderately acid; gradual wavy boundary.

BC--36 to 50 inches; yellowish brown (10YR 5/4) silty clay loam; weak coarse subangular blocky structure; firm; few fine roots; few prominent gray (N 5/0) clay films on faces of peds and in pores; 20 percent medium prominent gray (N 5/0) irregular iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; slightly acid; gradual wavy boundary.

C1--50 to 70 inches; light olive brown (2.5Y 5/4) silty clay loam; massive; firm; 30 percent medium prominent gray (N 5/0) iron depletions lining pores; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix associated to pores; neutral; gradual wavy boundary.

C2--70 to 80 inches; olive brown (2.5Y 4/4) silt loam; massive; firm; 40 percent medium prominent gray (N 5/0) iron depletions lining pores; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix associated to pores; neutral.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 30 to 70 inches
Depth to carbonates: 60 to more than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Unless limed, very strongly acid to neutral in the solum; moderately acid to slightly alkaline in the substratum

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma -- 2
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 1 percent

BE horizon (where present):
Hue — 10YR
Value — 5
Chroma -- 2 to 4
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 1 percent

Bt horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma -- 1 to 6
Texture of the fine earth fraction — silt loam, silty clay loam; thin subhorizons of loam
Content of rock fragments — 0 to 2 percent

BC horizon (where present):
Hue — 7.5YR, 10YR, 2.5Y

Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam; thin strata of clay loam and loam
Content of rock fragments — 0 percent

C horizon:
Hue — 10YR, 2.5Y
Value — 4 to 6
Chroma – 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam; thin strata of loam, fine sandy loam, clay loam
Content of rock fragments — 0 to 5 percent

Fredericktown Series

Depth class: Very deep
Drainage class: Well drained
Landform: Stream terrace, kame terrace
Position on the landform: Tread, riser
Parent material: Glaciofluvial outwash with or without loess mantle
Slope range: 2 to 25 percent
Associated soils: Chili, Kensington

Taxonomic class: Fine-loamy, mixed, superactive, mesic Ultic Hapludalfs

Typical Pedon
Fredericktown silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, West Township, about 0.75 mile west of Bayard, 2,447 feet south and 2,016 feet east of the northwest corner of sec. 30, T. 16 N., R. 5 W.

Ap--0 to 12 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many fine and medium roots; common fine pores; 5 percent pebbles; slightly acid; abrupt smooth boundary.
Bt1--12 to 20 inches; yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; common fine pores; 10 percent brown (10YR 4/3) Ap material in worm and root channels; few faint yellowish brown (10YR 5/4) clay films on faces of peds; 2 percent pebbles; slightly acid; clear wavy boundary.
Bt2--20 to 25 inches; yellowish brown (10YR 5/6) gravelly silt loam; moderate medium subangular blocky structure; friable; common fine roots; common fine pores; few distinct brown (7.5YR 5/4) clay films on faces of peds; 15 percent pebbles; strongly acid; clear wavy boundary.
2Bt3--25 to 31 inches; yellowish brown (10YR 5/4) gravelly sandy loam; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; common distinct brown (7.5YR 4/4) clay films bridging sand grains and coating rock fragments; 15 percent pebbles; 5 percent parapebbles; very strongly acid; clear wavy boundary.
2Bt4--31 to 45 inches; dark yellowish brown (10YR 4/4) gravelly coarse sandy loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 4/4) clay films bridging sand grains and coating rock fragments; 30 percent pebbles; 5 percent parapebbles; very strongly acid; clear wavy boundary.
2Bt5--45 to 50 inches; dark yellowish brown (10YR 4/4) gravelly loamy coarse sand; weak medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 5/4) clay films bridging sand grains and coating rock fragments; 25 percent pebbles; 5 percent parapebbles; very strongly acid; gradual wavy boundary.
2Bt6--50 to 56 inches; dark yellowish brown (10YR 4/4) very gravelly loamy coarse sand; weak medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 5/4) clay films bridging sand grains and coating rock fragments; 40 percent pebbles; 5 percent parapebbles; 10 percent small soft very dark gray (N 3/0) fragments of coal; strongly acid; clear wavy boundary.
2Bt7--56 to 62 inches; yellowish brown (10YR 5/4) gravelly loamy coarse sand; weak fine and medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 5/4) clay films bridging sand grains and coating rock fragments; 30 percent pebbles; 15 percent small soft very dark gray (N 3/0) fragments of coal; strongly acid; clear wavy boundary.
2Bt8--62 to 68 inches; variegated yellowish brown (10YR 5/4), 60 percent, and brown (7.5YR 4/4), 40 percent, gravelly loamy coarse sand; few fine distinct pale brown (10YR 6/3) and prominent strong brown (7.5YR 5/6) irregular mottles in the matrix; weak medium platy structure; friable; few fine roots; few distinct brown (7.5YR 5/4) clay films bridging sand grains and coating rock fragments; 20 percent pebbles; 15 percent small soft very dark gray (N 3/0) fragments of coal; strongly acid; clear wavy boundary.
2Bt9--68 to 74 inches; dark yellowish brown (10YR 4/4) gravelly loamy coarse sand; weak

fine and medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 5/4) clay films bridging sand grains; 15 percent pebbles; strongly acid; clear wavy boundary.

2BC--74 to 80 inches; dark yellowish brown (10YR 4/4) very gravelly coarse sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 4/4) clay films bridging sand grains and coating rock fragments; 40 percent pebbles; strongly acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Thickness of the solum: 60 to more than 80 inches
Depth to carbonates: 60 to more than 80 inches
Kind of rock fragments: Sandstone, shale
Reaction: Unless limed, strongly acid or very strongly acid in the A horizon; very strongly acid to slightly acid in the upper part of the Bt or 2Bt; very strongly acid to moderately acid in the lower part of the Bt or 2Bt; slightly acid to slightly alkaline in the C or 2C horizon

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — loam, silt loam
Content of rock fragments — 0 to 30 percent

Bt horizon (upper part):
Hue — 7.5YR, 10YR, some subhorizons 5YR
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — silt loam, loam, sandy loam, clay loam, coarse sandy loam, loamy sand, loamy coarse sand
Content of rock fragments — 2 to 30 percent

Bt horizon (lower part):
Hue — 7.5YR, 10YR, some subhorizons 5YR
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — silt loam, loam, sandy loam, clay loam, coarse sandy loam, loamy sand, loamy coarse sand
Content of rock fragments — 5 to 50 percent

BC horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma – 3 or 4
Texture of the fine earth fraction — loam, sandy loam, coarse sandy loam, loamy sand
Content of rock fragments — 5 to 50 percent

C horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — loamy sand, sand
Content of rock fragments — 15 to 60 percent

Frenchtown Series

Depth class: Very deep
Drainage class: Poorly drained
Landform: Till Plain
Position on the landform: Footslope, toeslope
Parent material: Loamy till
Slope range: 0 to 2 percent
Associated soils: Canfield, Carlisle, Ravenna, Wick

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Fragiaqualfs

Typical Pedon

Frenchtown silt loam, 0 to 2 percent slopes; in Columbiana County, Ohio, Perry Township, about 0.5 miles northwest of Salem, 2,175 feet west and 2,390 feet north of the southeast corner of sec. 25, T. 17 N., R. 4 W.

A--0 to 4 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak fine and medium granular structure; friable; many fine and medium roots; 1 percent pebbles; moderately acid; abrupt smooth boundary.

BA--4 to 8 inches; gray (10YR 5/1) silt loam; weak medium subangular blocky structure; friable; common fine roots; 20 percent intermixing of very dark gray (10YR 3/1) A material; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation lining pores; 1 percent pebbles; moderately acid; clear wavy boundary.

BE--8 to 16 inches; grayish brown (10YR 5/2) silt loam; weak medium subangular blocky structure; friable; common fine roots; common fine prominent strong brown (7.5YR 4/6) masses of iron-manganese accumulation lining pores; 1 percent pebbles; strongly acid; gradual wavy boundary.

Btg1--16 to 20 inches; gray (10YR 6/1) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common faint gray (10YR 5/1) clay films on faces of peds and in pores; many medium prominent

irregular strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; 1 percent pebbles; strongly acid; gradual wavy boundary.

Btg2--20 to 24 inches; gray (10YR 6/1) clay loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common faint gray (10YR 5/1) clay films on faces of peds and in pores; many medium prominent irregular strong brown (7.5YR 5/6) masses of iron accumulation in the matrix Associated to pores; 2 percent pebbles; strongly acid; clear wavy boundary.

Btx1--24 to 29 inches; yellowish brown (10YR 5/4) silty clay loam; weak very coarse prismatic structure parting to moderate medium and coarse subangular blocky; very firm; few fine roots; many distinct gray (10YR 5/1) clay films on faces of peds and in pores; 20 percent medium distinct gray (10YR 6/1) iron depletions on vertical faces of peds; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation between the iron depletions and prism interior; common fine prominent dark brown (7.5YR 3/2) rounded iron-manganese nodules in the matrix; 5 percent pebbles; 70 percent brittle; very strongly acid; gradual wavy boundary.

Btx2--29 to 33 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak very coarse prismatic structure parting to moderate medium platy; very firm; few fine roots; many distinct gray (10YR 5/1) clay films on faces of peds and in pores; 40 percent medium distinct gray (10YR 6/1) iron depletions on vertical faces of peds; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation between the iron depletions and prism interior; common fine prominent dark brown (7.5YR 3/2) rounded iron-manganese nodules in the matrix; 5 percent pebbles; 70 percent brittle; very strongly acid; clear wavy boundary.

Btx3--33 to 45 inches; yellowish brown (10YR 5/4) silt loam; weak very coarse prismatic structure parting to weak medium and coarse subangular blocky; very firm; few fine roots; few distinct gray (10YR 5/1) clay films on vertical faces of peds; 30 percent medium distinct light brownish gray (10YR 6/2) iron depletions on vertical faces of peds; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation between the iron depletions and prism interior; 10 percent pebbles; 70 percent brittle; very strongly acid; gradual wavy boundary.

BC--45 to 56 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; firm; few fine roots; few distinct gray (10YR 5/1) clay films on vertical faces of peds; 30 percent medium distinct light brownish gray (10YR 6/2) iron depletions on faces of peds and in pores; many medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; 10 percent pebbles; very strongly acid; gradual wavy boundary.

C1--56 to 65 inches; yellowish brown (10YR 5/4) silt loam; massive; firm; 15 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding iron depletions; 10 percent pebbles; strongly acid; gradual wavy boundary.

C2--65 to 75 inches; yellowish brown (10YR 5/4) silt loam; massive; firm; 10 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding iron depletions; 10 percent pebbles; strongly acid; gradual wavy boundary.

C3--75 to 80 inches; yellowish brown (10YR 5/4) silty clay loam; massive; firm; 10 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding iron depletions; 10 percent pebbles; moderately acid.

Range in Characteristics

Depth to bedrock: More than 60 inches
Thickness of the solum: 40 to 80 inches
Depth to fragipan: 18 to 38 inches
Depth to Carbonates: More than 60 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, extremely acid to moderately acid above the Btx horizon, very strongly acid to slightly acid in the Btx and above the C horizon, and strongly acid to moderately alkaline in the C horizon

A horizon:
Hue — 10YR
Value — 2 or 3
Chroma --1 or 2
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma --1 or 2
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Btg horizon:
Hue — 10YR, 2.5Y, 5Y or is neutral
Value — 4 to 6
Chroma – 0 to 2
Texture of the fine earth fraction — loam, silt loam, clay loam, silty clay loam
Content of rock fragments — 0 to 14 percent

Btx horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 2 to 4
Texture of the fine earth fraction — loam, silt loam, clay loam, silty clay loam
Content of rock fragments— 2 to 20 percent

BC horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 2 to 4
Texture of the fine earth fraction — loam, silt loam, clay loam, silty clay loam
Content of rock fragments — 2 to 30 percent

C horizon:
Hue —10YR, 2.5Y
Value — 4 or 5
Chroma -- 2 to 4
Texture of the fine earth fraction — loam, silt loam, clay loam, silty clay loam
Content of rock fragments — 5 to 30 percent

Gavers Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Hill
Position on the landform: Footslope
Parent material: Loess, colluvium and the underlying residuum from interbedded siltstone, clayey shale, some limestone
Slope range: 2 to 6 percent
Associated soils: Coshocton, Keene, Tioga

Taxonomic class: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Gavers silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Franklin Township, about 2 miles west of Gavers, 80 feet west and 2,360 feet south of the northeast corner of sec. 7, T. 13 N., R. 3 W.

Ap--0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and medium granular structure; friable; common fine and medium roots; common fine and medium distinct dark brown (7.5YR 3/2) rounded strongly cemented iron-manganese nodules in the matrix; neutral; abrupt smooth boundary.

BE--8 to 12 inches; variegated 60 percent yellowish brown (10YR 5/6) and 40 percent light yellowish brown (10YR 6/4) silty clay loam; moderate fine and medium subangular blocky structure; friable; common fine and medium roots; 60 percent fine and medium distinct light brownish gray (10YR 6/2) clay depletions on faces of peds and in pores; few fine prominent yellowish red (5YR 5/6) threadlike masses of iron accumulation lining pores; few fine and medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; strongly acid; clear wavy boundary.

Bt1--12 to 17 inches; yellowish brown (10YR 5/6) silty clay loam; moderate fine and medium subangular blocky structure; firm; common fine and medium roots; few distinct gray (10YR 5/1) and faint yellowish brown (10YR 5/4) clay films on faces of peds and in pores; few distinct pale brown (10YR 6/3) silt coats in pores; many fine and medium prominent gray (10YR 6/1) irregular iron depletions in the matrix and on the surfaces of peds; few fine prominent yellowish red (5YR 5/6) threadlike masses of iron accumulation lining pores; few fine and medium distinct strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix adjacent to pores; strongly acid; clear wavy boundary.

Bt2--17 to 24 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; many prominent gray (10YR 5/1) clay films on faces of peds and in pores; few distinct pale brown (10YR 6/3) silt coats in pores; 15 percent fine and medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; common fine and medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix associated to pores; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese

accumulation lining pores; strongly acid; clear wavy boundary.

2Bt3--24 to 30 inches; yellowish brown (10YR 5/6) parachannery silt loam; moderate medium subangular blocky structure; firm; few fine roots; common prominent gray (10YR 5/1) and dark gray (N 4/0) clay films on faces of peds and in pores; 10 percent fine and medium distinct light brownish gray (10YR 6/2) clay depletions on faces of peds and in pores; 15 percent fine and medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; many fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 5 percent channers; 10 percent parachanners; slightly acid; clear wavy boundary.

2Bt4--30 to 42 inches; variegated yellowish brown (10YR 5/6), 80 percent, light olive brown (2.5Y 5/4), 20 percent silt loam; weak coarse and very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few fine roots; common prominent gray (10YR 5/1) clay films on vertical and horizontal faces of peds; 5 percent fine and medium distinct light brownish gray (10YR 6/2) clay depletions on vertical faces of peds; 5 percent fine and medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation on vertical faces of peds; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on vertical and horizontal faces of peds; 5 percent channers; neutral; clear wavy boundary.

2Bt5--42 to 52 inches; variegated yellowish brown (10YR 5/6), 80 percent, light olive brown (2.5Y 5/4), 20 percent silty clay loam; weak coarse subangular blocky structure; very firm; few fine roots; common prominent gray (10YR 5/1) clay films on faces of peds; 5 percent fine and medium distinct light brownish gray (10YR 6/2) clay depletions on faces of peds and in pores; 10 percent fine and medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; common fine and medium prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds; 10 percent channers; neutral; clear wavy boundary.

2Bt6--52 to 60 inches; light olive brown (2.5Y 5/4) channery silty clay loam; weak coarse subangular blocky structure; firm; few fine roots; common prominent gray (10YR 5/1) clay films on faces of peds; 10 percent fine and medium prominent light brownish gray (10YR 6/2) iron depletions in the matrix and lining pores; few fine and medium prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds; 20 percent channers; neutral; clear wavy boundary.

2BC--60 to 78 inches; yellowish brown (10YR 5/6) channery loam; few fine and medium distinct light brownish gray (10YR 6/2) irregular mottles in the matrix; weak coarse subangular blocky structure; firm; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 15 percent channers; neutral; clear wavy boundary.

3C--78 to 80 inches; light olive brown (2.5Y 5/4) silty clay; few fine and medium prominent light brownish gray (10YR 6/2) and strong brown (7.5YR 5/8) irregular mottles in the matrix; massive; firm; slightly plastic and sticky; common fine and medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 5 percent channers; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 40 to 80 inches
Thickness of the loess mantle: 20 to 40 inches
Depth to carbonates: More than 60 inches
Kind of rock fragments: Sandstone, siltstone, shale, limestone
Reaction: Unless limed, strongly acid or moderately acid above the 2Bt horizon, moderately acid to neutral in the 2Bt; slightly acid to neutral in th 2BC horizon, and strongly acid to moderately alkaline in the 3C horizon

Ap horizon:
Hue — 10YR
Value — 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 2 percent

BE horizon (where present):
Hue —10YR, 2.5Y
Value — 4 or 6
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 2 percent

Bt horizon:
Hue — 7.5YR, 10YR

Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 2 percent

2Bt horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 to 6
Chroma – 1 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 5 to 20 percent

2BC horizon:
Hue —10YR, 2.5Y
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam
Content of rock fragments — 5 to 20 percent

3C horizon:
Hue —10YR, 2.5Y
Value — 4 to 6
Chroma – 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, silty clay
Content of rock fragments — 5 to 34 percent

Germano Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hill
Position on the landform: Summit, shoulder, backslope
Parent material: Residuum from weakly cemented sandstone
Slope range: 6 to 25 percent
Associated soils: Berks, Coshocton, Gilpin, Westmoreland

Taxonomic class: Coarse-loamy, mixed, active, mesic Typic Hapludults

Typical Pedon
Germano fine sandy loam, 6 to 15 percent slopes; in Harrison County, Ohio, Rumley Township, about 0.1 mile north of New Rumley,; 2400 feet north and 2200 feet west of the southeast corner of section 14, T. 12 N., R. 5 W.

Ap--0 to 10 inches; brown (10YR 4/3) fine sandy loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many fine roots; 5 percent sandstone channers; slightly acid; abrupt smooth boundary.
Bt1--10 to 18 inches; yellowish brown (10YR 5/4) fine sandy loam; moderate medium subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 5/4) clay films on faces of peds; 10 percent sandstone channers; 4 percent sandstone parachanners; moderately acid; clear wavy boundary.
Bt2--18 to 26 inches; yellowish brown (10YR 5/4) channery fine sandy loam; moderate medium subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 5/4) clay films on faces of peds; 15 percent sandstone channers; 10 percent sandstone parachanners; strongly acid; clear wavy boundary.
C--26 to 33 inches; yellowish brown (10YR 5/4) very channery fine sandy loam; massive; friable; few fine roots; 45 percent sandstone channers; 10 percent sandstone parachanners; very strongly acid; clear wavy boundary.
Cr--33 to 43 inches; light yellowish brown (10YR 6/4) fractured weathered sandstone.

Range in Characteristics
Depth to bedrock: More than 40 inches
Depth to paralithic: 20 to 40 inches
Thickness of the solum: 20 to 40 inches
Depth to carbonates: None above the bedrock
Kind of rock fragments: Sandstone
Reaction: Unless limed, very strongly acid to moderately acid in the solum; extremely acid to strongly acid in the substratum

A or Ap horizon:
Hue — 10YR
Value — 2 to 4
Chroma – 1 to 4
Texture of the fine earth fraction — fine sandy loam
Content of rock fragments — 2 to 20 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma – 4 to 8
Texture of the fine earth fraction — fine sandy loam, sandy loam, coarse sandy loam, loam
Content of rock fragments — 3 to 34 percent (of that 2 to 15 percent are soft fragments)

C horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma -- 3 to 6

Texture of the fine earth fraction — fine sandy loam, sandy loam, loamy sand
Content of rock fragments — 20 to 80 percent (of that 5 to 35 percent are soft fragments)

Gilpin Series

Depth class: Moderately deep
Drainage class: Well drained
Landform: Hill
Position on the landform: Summit, shoulder, backslope
Parent material: Residuum weathered from interbedded shale, siltstone and sandstone
Slope range: 2 to 25 percent
Associated soils: Berks, Coshocton, Hazleton, Westmoreland

Taxonomic class: Fine-loamy, mixed, active, mesic Typic Hapludults

Typical Pedon
Gilpin silt loam, from an area of Gilpin-Coshocton complex, 6 to 15 percent slopes; in Columbiana County, Ohio, Hanover Township, about 0.5 miles southwest of Dungannon, 1,940 feet west and 1,230 feet north of southeast corner of sec. 35, T. 15 N., R. 4 W.

Ap--0 to 7 inches; brown (10YR 4/3) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; many fine and medium roots; 5 percent channers; strongly acid; abrupt smooth boundary.
Bt1--7 to 14 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; common fine and medium roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent channers; strongly acid; clear wavy boundary.
Bt2--14 to 20 inches; yellowish brown (10YR 5/6) channery silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 15 percent channers; strongly acid; clear wavy boundary.
C--20 to 28 inches; yellowish brown (10YR 5/4) very channery silty clay loam; massive; firm; few distinct brown (7.5YR 5/4) clay films on rock fragments; 55 percent channers; very strongly acid; clear wavy boundary.
Cr--28 to 38 inches; light olive brown (2.5Y 5/4) fractured, bedded shale.

Range in Characteristics
Depth to bedrock: 20 to 40 inches
Thickness of the solum: 18 to 36 inches
Depth to carbonates: None above the bedrock
Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Unless limed, extremely acid to strongly acid throughout the profile

A horizon:
Hue — 10YR
Value — 3
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 5 to 10 percent

Ap horizon:
Hue — 10YR
Value — 3 or 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 5 to 10 percent

Bt horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma – 4 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam
Content of rock fragments — 5 to 34 percent

C horizon:
Hue — 10YR, 2.5Y
Value — 3 to 5
Chroma -- 3 to 5
Texture of the fine earth fraction — silt loam, loam, silty clay loam
Content of rock fragments — 40 to 80 percent

Glenford Series

Depth class: Very deep
Drainage class: Moderately well drained
Landform: Stream terrace
Position on the landform: Tread, riser
Parent material: Stratified glaciolacustrine deposits
Slope range: 2 to 12 percent
Associated soils: Valley, Canfield, Fitchville, Wadsworth

Taxonomic class: Fine-silty, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon

Glenford silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, West Township, about 1.5 miles east of East Rochester, 2,507 feet east and 308 feet north of the southwest corner of sec. 26, T. 16 N., R. 5 W.

Ap--0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many fine and medium roots; few pebbles; slightly acid; abrupt smooth boundary.

BE--8 to 12 inches; yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; few pebbles; strongly acid; clear wavy boundary.

Bt1--12 to 24 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common prominent brown (7.5YR 5/4) clay films on faces of peds and in pores; 30 percent medium prominent gray (10YR 6/1) iron depletions on faces of peds and in pores; common medium distinct strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; few pebbles; strongly acid; clear wavy boundary.

Bt2--24 to 30 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds and in pores; 30 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds and in pores; common medium distinct strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; strongly acid; clear wavy boundary.

Bt3--30 to 45 inches; dark yellowish brown (10YR 4/4) loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common distinct brown (7.5YR 5/4) and gray (10YR 5/1) clay films on faces of peds and in pores; 30 percent medium distinct gray (10YR 6/1) iron depletions on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; strongly acid; clear wavy boundary.

BC--45 to 60 inches; yellowish brown (10YR 5/4) silt loam with thin lenses of loam; weak coarse subangular blocky structure; firm; few fine roots; 20 percent medium distinct light brownish gray (10YR 6/2) iron depletions on faces of peds and in pores; many medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; moderately acid; clear wavy boundary.

C1--60 to 75 inches; yellowish brown (10YR 5/4) silt loam with thin lenses of loam; massive; firm; 10 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; few pebbles; moderately acid; clear wavy boundary.

C2--75 to 80 inches; yellowish brown (10YR 5/6) silt loam; massive; firm; 15 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding iron depletions; slightly acid.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 30 to 60 inches
Depth to carbonates: 60 to more than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, very strongly acid to moderately acid in the upper part and very strongly acid to slightly alkaline in the lower part

Ap horizon:
Hue — 10YR
Value — 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 2 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, loam
Content of rock fragments — 0 to 2 percent

C horizon:
Hue — 10YR
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silt loam, silty clay loam; less common are stratifications of loam and fine sandy loam
Content of rock fragments — 0 to 10 percent

The Glenford pedon has a permeability of the substratum that is slightly out of the range of the

series. This should not adversely affect use and management for most purposes.

Guernsey Series

Depth class: Deep or very deep
Drainage class: Moderately well drained
Landform: Hill
Position on the landform: Backslope, footslope
Parent material: Colluvium and residuum weathered from siltstone, shale, and limestone
Slope range: 6 to 25 percent
Associated soils: Berks, Coshocton, Gilpin, Kensington, Upshur

Taxonomic class: Fine, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon
Guernsey silt loam, 6 to 15 percent slopes; in Columbiana County, Ohio, Center Township, about 3.5 miles east of Hanoverton, 200 feet east and 200 feet south of the northwest corner of sec. 30, T. 14 N., R. 3. W.

Ap--0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine and medium granular structure; friable; common fine and medium roots; 5 percent pebbles of sandstone and shale; moderately acid; abrupt smooth boundary.

Bt1--8 to 16 inches; dark yellowish brown (10YR 4/6) silty clay loam; moderate fine and medium subangular blocky structure; friable; few fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct dark grayish brown (10YR 4/2) organic coats on faces of peds and in pores; 5 percent pebbles of sandstone and shale; moderately acid; clear wavy boundary.

2Bt2--16 to 24 inches; yellowish brown (10YR 5/6) silty clay; moderate medium angular blocky structure; firm, plastic and sticky; few fine roots; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent fine distinct grayish brown (10YR 5/2) iron depletions lining pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; few channers; moderately acid; clear wavy boundary.

2Bt3--24 to 32 inches; yellowish brown (10YR 5/6) silty clay; moderate medium and coarse angular blocky structure; firm; plastic and sticky; few fine roots; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; 15 percent fine distinct light brownish gray (10YR 6/2) iron depletions lining pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; few channers; moderately acid; clear wavy boundary.

2Bt4--32 to 42 inches; variegated yellowish brown (10YR 5/6), 70 percent, light olive brown (2.5Y 5/4), 30 percent, silty clay; moderate medium and coarse angular blocky structure; firm, plastic and sticky; few fine roots; many distinct yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent fine distinct light brownish gray (10YR 6/2) iron depletions lining pores; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 5 percent channers; slightly acid; clear wavy boundary.

2BC--42 to 52 inches; variegated light olive brown (2.5Y 5/3), 80 percent, yellowish brown (10YR 5/6), 20 percent, channery silty clay; weak medium and coarse subangular blocky structure; firm; slightly plastic and sticky; few fine roots; 5 percent fine prominent gray (N 5/0) iron depletions lining pores; 20 percent channers; strongly effervescent; moderately alkaline; clear wavy boundary.

3C1--52 to 58 inches; grayish brown (2.5Y 5/2) cobbly silty clay loam; massive; firm; 25 percent cobbles; strongly effervescent; moderately alkaline; clear wavy boundary.

3C2--58 to 65 inches; grayish brown (2.5Y 5/2) silty clay loam; massive; firm; 5 percent channers; strongly effervescent; moderately alkaline; clear wavy boundary.

3Cr--65 to 75 inches; gray (10YR 5/1) calcareous shale.

Range in Characteristics
Depth to bedrock: More than 50 inches
Thickness of the solum: 30 to 60 inches
Depth to carbonates: More than 35 inches if present at all above the bedrock
Kind of rock fragments: Limestone, sandstone, siltstone, shale
Reaction: Unless limed, moderately acid to very strongly acid in the A horizon; very strongly acid to moderately acid in the upper part of the Bt and ranging to slightly alkaline in the lower part of the Bt; moderately acid to moderately alkaline alkaline in the 2C horizon

Ap horizon:
Hue — 10YR
Value — 4
Chroma -- 2 or 3

Texture of the fine earth fraction — silt loam
Content of rock fragments — 2 to 14 percent

Bt or 2Bt horizon:
Hue —10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silty clay loam, silty clay
Content of rock fragments — 2 to 20 percent

2C or 3C horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — silty clay loam, silty clay
Content of rock fragments — 2 to 34 percent

Hazleton Series

Depth class: Deep or very deep
Drainage class: Well drained
Landform: Hill
Position on the landform: Summit, shoulder, backslope
Parent material: Residuum weathered from sandstone
Slope range: 2 to 70 percent
Associated soils: Berks, Chili, Coshocton, Tioga, Westmoreland

Taxonomic class: Loamy-skeletal, siliceous, active, mesic Typic Dystrudepts

Typical Pedon
Hazleton channery loam, from an area of Hazleton-Westmoreland complex, 40 to 70 percent slopes; in Columbiana County, Ohio, St. Clair Township, about 1.0 mile northwest of Fredericktown, 270 feet west and 800 feet south of the northeast corner of sec. 3, T. 6 N., R. 1 W.

Oe--0 to 2 inches; very dark grayish brown (10YR 3/2) partially decayed leaf litter; abrupt wavy boundary.
A--2 to 5 inches; very dark gray (10YR 3/1) channery loam, gray (10YR 5/1) dry; weak fine granular structure; very friable; many fine and medium roots; 20 percent channers; very strongly acid; abrupt smooth boundary.
BA--5 to 8 inches; 80 percent yellowish brown (10YR 5/4) and 20 percent dark brown (10YR 4/3) channery sandy loam; weak fine subangular blocky structure; friable; common fine and medium roots; 25 percent channers; very strongly acid; clear wavy boundary.
Bw1--8 to 17 inches; yellowish brown (10YR 5/6) very channery sandy loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; 40 percent channers; strongly acid; clear wavy boundary.
Bw2--17 to 32 inches; brownish yellow (10YR 6/6) extremely channery sandy loam; weak fine and medium subangular blocky structure; friable; common fine roots; 60 percent channers; strongly acid; clear wavy boundary.
Bw3--32 to 38 inches; brownish yellow (10YR 6/6) extremely channery sandy loam; weak fine and medium subangular blocky structure; friable; few fine roots; 65 percent channers; very strongly acid; clear wavy boundary.
BC--38 to 50 inches; yellowish brown (10YR 5/4) extremely channery loamy sand; weak fine and medium subangular blocky structure; friable; few fine roots; 70 percent channers; very strongly acid; gradual wavy boundary.
C--50 to 67 inch es; yellowish brown (10YR 5/4) extremely channery loamy sand; massive; friable; 80 percent channers; very strongly acid; gradual wavy boundary.
R--67 inches; brown (10YR 5/3) sandstone.

Range in Characteristics
Depth to bedrock: 40 to 80 inches
Thickness of the solum: 25 to 50 inches (Figure 26)
Depth to carbonates: None above the bedrock
Kind of rock fragments: Sandstone
Reaction: Unless limed, extremely acid to strongly acid throughout the profile

A horizon:
Hue — 10YR
Value — 2 to 4
Chroma -- 1 to 4
Texture of the fine earth fraction — loam
Content of rock fragments — 10 to 25 percent

Bw horizon:
Hue — 7.5YR, 10YR
Value — 3 to 6
Chroma -- 3 to 8
Texture of the fine earth fraction — loam, sandy loam, loamy sand
Content of rock fragments — 15 to 70 percent

C horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 to 6

Texture of the fine earth fraction — loam, sandy loam, loamy sand
Content of rock fragments — 35 to 80 percent

The Hazleton components in Columbiana County are taxadjunct to the series because the mineralogy class is Mixed and not Siliceous. This should not adversely impact use and management of the soil for most purposes.

Figure 26. A typical profile of Hazleton soils.

Holly Series

Depth class: Very deep
Drainage class: Poorly drained
Landform: Flood Plain
Position on the landform: Step
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Coshocton, Gilpin, Kensington, Westmoreland

Taxonomic class: Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon
Holly silt loam, 0 to 2 percent slopes, frequently flooded; in Columbiana County, Ohio, Center Township, about 2.5 miles north of Gavers, 1,025 feet west and 675 feet north of the southeast corner of sec. 28, T. 14 N., R. 3 W.

A--0 to 4 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; many fine and medium roots; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation lining pores; strongly acid; abrupt smooth boundary.

Bg1--4 to 8 inches; gray (N 5/0) silt loam; weak coarse subangular blocky structure; friable; common fine and medium roots; many fine prominent yellowish red (5YR 4/6) masses of iron accumulation lining pores; strongly acid; clear wavy boundary.

Bg2--8 to 12 inches; gray (5Y 5/1) silt loam; weak coarse subangular blocky structure; friable; few fine roots; common fine prominent yellowish red (5YR 4/6) masses of iron accumulation lining pores; slightly acid; gradual wavy boundary.

Bg3--12 to 20 inches; gray (N 5/0) loam; weak coarse subangular blocky structure; friable; few fine roots; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation lining pores; slightly acid; gradual wavy boundary.

Cg1--20 to 30 inches; gray (N 5/0) loam; massive; firm; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation lining pores; 5 percent pebbles; slightly acid; gradual wavy boundary.

Cg2--30 to 40 inches; dark gray (N 4/0) gravelly loam; massive; friable; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation lining pores; 20 percent pebbles; slightly acid; clear wavy boundary.

Cg3--40 to 50 inches; dark grayish brown (2.5Y 4/2) gravelly loam; massive; friable; 10 percent medium faint gray (N 5/0) irregular iron depletions in the matrix; common fine prominent yellowish brown (10YR 5/6) irregular masses of iron accumulation in the matrix surrounding iron depletions; 20 percent pebbles; slightly acid; clear wavy boundary.

Cg4--50 to 60 inches; olive gray (5Y 4/2) gravelly loam; massive; friable; 15 percent pebbles; neutral; gradual wavy boundary.

Cg5--60 to 70 inches; variegated dark gray (N 4/0), 60 percent, olive gray (5Y 4/2), 40 percent, gravelly loam; common medium prominent strong brown (7.5YR 5/6) irregular mottles in the matrix; massive; friable; 15 percent pebbles; neutral; gradual wavy boundary.

Cg6--70 to 75 inches; dark gray (N 4/0) gravelly loam; many medium prominent light olive brown (2.5Y 5/4) irregular mottles in the matrix; massive; friable; 20 percent pebbles; neutral.

R--75 inches; sandstone.

Range in Characteristics
Depth to bedrock: More than 70 inches
Thickness of the solum: 20 to 44 inches
Depth to carbonates: 40 to more than 80 inches

Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Unless limed, strongly acid to neutral in the upper part and strongly acid to slightly alkaline in the lower part

A horizon:
Hue — 10YR
Value — 4
Chroma -- 1 or 2
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 10 percent

Bg horizon:
Hue — 10YR, 2.5Y, 5Y or is neutral
Value — 4 to 6
Chroma – 0 to 2
Texture of the fine earth fraction — silt loam, loam; less commomly sandy loam or silty clay loam
Content of rock fragments — 0 to 14 percent

Cg horizon:
Hue —10YR, 2.5Y, 5Y or is neutral
Value — 4 or 5
Chroma – 0 to 2
Texture of the fine earth fraction — silt loam, loam, sandy loam
Content of rock fragments — 0 to 25 percent

The Holly pedon has bedrock below a depth of 60 inches that is not typical of the series. This should not adversely impact use and management of the soil for most purposes.

Homewood Series

Depth class: Very deep
Drainage class: Moderately well drained
Landform: Till plain
Position on the landform: Summit, backslope
Parent material: Loess, till and the underlying residuum
Slope range: 2 to 6 percent
Associated soils: Berks, Hazleton, Kensington, Mechanicsburg

Taxonomic class: Fine-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs

Typical Pedon
Homewood silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Elk Run Township, about 1.5 miles northwest of Elkton, 1,525 feet east and 1,145 feet north of the southwest corner, sec. 17, T. 11 N., R. 2 W.

Ap--0 to 12 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; common fine and medium roots; few pebbles; strongly acid; abrupt smooth boundary.
BE--12 to 16 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; common fine roots; 10 percent brown (10YR 4/3) Ap material in root and worm channels; few pebbles; strongly acid; clear wavy boundary.
Bt1--16 to 22 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent pebbles; strongly acid; clear wavy boundary.
2Bt2--22 to 25 inches; 70 percent yellowish brown (10YR 5/4), 30 percent brown (7.5YR 4/4) loam; weak coarse prismatic structure parting to moderate medium and coarse subangular blocky; firm; 20 percent brittle; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 20 percent medium distinct light brownish gray (10YR 6/2) iron depletions on faces of peds and lining pores; common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; 10 percent pebbles; very strongly acid; gradual wavy boundary.
2Btx1--25 to 30 inches brown (7.5YR 4/4) loam; moderate very coarse prismatic structure parting to weak medium platy; very firm; few fine roots; common faint brown (7.5YR 5/4) clay films on faces of peds; 30 percent medium prominent light brownish gray (10YR 6/2) iron depletions on vertical faces of peds and lining pores; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation on vertical faces of peds between depletions and prism interiors; 10 percent pebbles; 70 percent brittle; very strongly acid; gradual wavy boundary.
2Btx2--30 to 37 inches; brown (7.5YR 4/4) loam; moderate very coarse prismatic structure parting to weak medium platy; very firm; few fine roots; common faint brown (7.5YR 5/4) clay films on faces of peds; 40 percent medium prominent light brownish gray (10YR 6/2) iron depletions on vertical faces of peds and lining pores; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation on vertical faces of peds between depletions and prism interiors; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on

faces of peds and lining pores; 10 percent pebbles; 80 percent brittle; very strongly acid; gradual wavy boundary.

2Btx3--37 to 42 inches; yellowish brown (10YR 5/4) loam; moderate very coarse prismatic strurcture parting to weak medium subangular blocky; very firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 30 percent medium prominent light brownish gray (10YR 6/2) iron depletions on vertical faces of peds and lining pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation on vertical faces of peds between depletions and prism interiors; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds and lining pores; 10 percent pebbles; 70 percent brittle; very strongly acid; gradual wavy boundary.

2B't1--42 to 55 inches; brown (10YR 5/3) clay loam; weak very coarse subangular blocky structure parting to moderate medium subangular blocky; firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 5 percent medium distinct light brownish gray (10YR 6/2) iron depletions on faces of peds and lining pores; few medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; 10 percent pebbles; strongly acid; clear wavy boundary.

2B't2--55 to 62 inches; brown (10YR 5/3) loam; weak very coarse subangular blocky structure parting to moderate medium subangular blocky; firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 5 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; few medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding depletions; 10 percent pebbles; strongly acid; clear wavy boundary.

3BC--62 to 66 inches; yellowish brown (10YR 5/4) extremely channery loam; weak very coarse subangular blocky structure; firm; 70 percent channers; strongly acid; clear wavy boundary.

3Cr--66 to 76 inches; light olive brown (2.5Y 5/4) layered sandstone.

Range in characteristics

Depth to bedrock: More than 60 inches
Depth to the paralithic: 60 to more than 80 inches
Thickness of the solum: 60 to more than 80 inches
Thickness of the loess cap: 10 to 22 inches
Depth to fragipan: 16 to 33 inches
Depth to carbonates: More than 60 inches
Kind of rock fragments: Sandstone, shale, limestone, igneous
Reaction: Unless limed, strongly acid in the surface and upper subsoil; very strongly acid to slightly acid in the lower solum; very strongly acid to slightly alkaline in the C horizon

Ap horizon:
Hue — 10YR
Value — 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Bt horizon:
Hue — 10YR
Value — 5
Chroma -- 4 or 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 5 percent

2Bt, 2Btx, 2B't, and 2BC horizons:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam
Content of rock fragments — 5 to 25 percent

2C horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 4 to 6
Texture of the fine earth fraction — loam, clay loam
Content of rock fragments — 5 to 34 percent

3BC and 3C horizons:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — loam, silt loam, clay loam
Content of rock fragments — 35 to 70 percent

Homeworth Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Outwash terrace
Position on the landform: Tread

Parent material: Loamy water-sorted material overlying clayey lacustrine sediments
Slope range: 0 to 6 percent
Associated soils: Canfield, Ravenna, Zepernick

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aeric Epiaqualfs

Typical Pedon
Homeworth loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Knox Township, about 3.0 miles east of Alliance, 1,240 feet west and 680 feet north of the southeast corner of sec. 4, T. 17 N., R. 5 W.

Ap--0 to 13 inches; dark grayish brown (10YR 4/2) loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; many fine and very fine roots; 7 percent pebbles; neutral; abrupt smooth boundary.

Eg--13 to 16 inches; light brownish gray (10YR 6/2) sandy loam; weak fine subangular blocky structure; friable; common fine roots; few fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) rounded friable iron-manganese oxide accumulations in the matrix; 13 percent pebbles; neutral; clear wavy boundary.

BE--16 to 20 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine and medium subangular blocky structure; friable; common fine roots; common faint pale brown (10YR 6/3) silt coats on faces of peds; 40 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions and common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) rounded friable masses of iron-manganese accumulation in the matrix; 12 percent pebbles; neutral; clear wavy boundary.

Bt1--20 to 25 inches; yellowish brown (10YR 5/6) loam; moderate fine and medium subangular blocky structure; friable; few fine roots; common distinct yellowish brown (10YR 5/4) and prominent gray (10YR 5/1) clay films on faces of peds; 50 percent medium prominent gray (10YR 6/1) iron depletions on faces of peds; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation lining pores; common fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 14 percent pebbles; slightly acid; clear wavy boundary.

Bt2--25 to 31 inches; yellowish brown (10YR 5/6) loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct yellowish brown (10YR 5/4) and prominent gray (10YR 5/1) clay films on faces of peds; 50 percent medium prominent gray (10YR 6/1) iron depletions on faces of peds; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation lining pores; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 10 percent pebbles; slightly acid; clear wavy boundary.

Bt3--31 to 34 inches; yellowish brown (10YR 5/6) sandy loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common distinct yellowish brown (10YR 5/4) and prominent gray (10YR 5/1) clay films on faces of peds; 30 percent medium prominent gray (10YR 6/1) iron depletions on faces of peds; few medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix associated to pores; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 8 percent pebbles; slightly acid; clear wavy boundary.

Bt4--34 to 38 inches; yellowish brown (10YR 5/4) sandy loam; weak medium and coarse subangular blocky structure; firm; few fine roots; common faint yellowish brown (10YR 5/4) and distinct gray (10YR 5/1) clay films on faces of peds; 20 percent medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; many fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 9 percent pebbles; moderately acid; clear wavy boundary.

2Bt5--38 to 50 inches; light olive brown (2.5Y 5/4) silty clay; moderate coarse prismatic structure; firm; few fine roots; common prominent gray (N 5/0) clay films on faces of peds; 20 percent medium prominent gray (10YR 6/1) iron depletions lining pores; few medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix associated to pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; moderately acid; gradual wavy boundary.

2BC--50 to 62 inches; light olive brown (2.5Y 5/4) silty clay; moderate medium prismatic structure; firm; few prominent gray (N 5/0)

clay films on faces of peds; 20 percent medium prominent gray (N 5/0) iron depletions lining pores; neutral; gradual wavy boundary.

2C1--62 to 70 inches; light olive brown (2.5Y 5/4) silty clay; massive; firm; 5 percent medium prominent gray (N 5/0) iron depletions lining pores; neutral; gradual smooth boundary.

2C2--70 to 80 inches; light olive brown (2.5Y 5/4) silty clay; common medium prominent light gray (2.5Y 7/2) irregular mottles throughout; massive; firm; 10 percent fine prominent gray (N 5/0) irregular iron depletions in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of the solum: 40 to 65 inches
Depth to lacustrine sediments: 30 to 50 inches
Depth to carbonates: 40 to more than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, strongly acid to slightly acid in the upper part, strongly acid to slightly alkaline in the lower part

Ap horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 1 to 3
Texture of the fine earth fraction — silt loam, loam
Content of rock fragments — 0 to 10 percent

BE horizon:
Hue — 10YR or 2.5Y
Value — 5 or 6
Chroma -- 2 to 4
Texture of the fine earth fraction — silt loam, loam, sandy loam, fine sandy loam
Content of rock fragments — 0 to 10 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, loam, sandy loam
Content of rock fragments — 0 to 20 percent

2Bt or 2BC horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma – 2 to 6
Texture of the fine earth fraction — silty clay loam with clay content >35%, silty clay
Content of rock fragments — 0 to 5 percent

2C horizon:
Hue — 10YR, 2.5Y, 5Y or is neutral
Value — 4 or 5
Chroma -- 0 to 4
Texture of the fine earth fraction — silty clay loam with clay content >35%, silty clay
Content of rock fragments — 0 to 5 percent

Jimtown Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Stream terrace
Position on the landform: Tread
Parent material: Stratified glaciofluvial outwash deposits
Slope range: 0 to 6 percent
Associated soils: Bogart, Chili, Fredericktown, Holly, Lobdell, Orrville

Taxonomic class: Fine-loamy, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon
Jimtown silt loam, 0 to 2 percent slopes; in Columbiana County, Ohio, West Township, about 0.5 mile north of Minerva, about 1200 feet west of the intersection of Kurtz Road (Township Road 23) and Stump Road (Township Road 719) along Kurtz Road, then 700 feet south, section 30, T. 16 N., R. 5 W.

Ap--0 to 8 inches; dark brown (10YR 3/3) silt loam, pale brown (10YR 6/3) dry; weak medium granular structure; friable; common fine and medium roots throughout; 4 percent well rounded pebbles; moderately acid; abrupt smooth boundary.

BE--8 to 12 inches; yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots throughout; many coarse and very coarse distinct light brownish gray (10YR 6/2)iron depletions on faces of peds, less than 15 percent by volume; dark brown (10YR 3/3) topsoil filling abandoned worm channels; 7 percent well rounded pebbles; moderately acid; gradual wavy boundary.

Bt1--12 to 16 inches; brown (10YR 5/3) loam; moderate medium subangular blocky structure; friable; few fine roots throughout; few distinct grayish brown (10YR 5/2) clay films on faces of peds; many coarse and very coarse distinct light brownish gray (10YR 6/2) clay

depletions on faces of peds; many, 30 percent, medium distinct yellowish brown (10YR 5/6) iron masses in the matrix; common medium and coarse prominent black (10YR 2/1) masses of iron-manganese throughout; 13 percent well rounded pebbles; moderately acid; gradual wavy boundary.

Bt2--16 to 24 inches; brown (10YR 5/3) gravelly sandy loam; weak coarse subangular blocky structure; friable; few fine roots throughout; few faint grayish brown (10YR 5/2) clay films on faces of peds; many, 25 percent, coarse faint grayish brown (10YR 5/2) iron depletions throughout; common coarse prominent strong brown (7.5YR 5/6) masses of iron oxide accumulation throughout and common medium prominent yellowish red (5YR 4/6) masses of iron oxide accumulation in the matrix around concentrations; 30 percent well rounded gravel; slightly acid; gradual wavy boundary.

Bt3--24 to 32 inches; grayish brown (10YR 5/2) gravelly coarse sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots throughout; few faint gray (10YR 5/1) clay films on vertical faces of peds and on rock fragments; many coarse prominent yellowish red (5YR 4/6) masses of iron oxide accumulation on faces of peds; 28 percent well rounded gravel; slightly acid; clear smooth boundary.

BC--32 to 39 inches; gray (10YR 5/1) very gravelly coarse sandy loam; weak very coarse prismatic structure; very friable; common medium prominant strong brown (7.5YR 4/6) masses of iron oxide accumulation on horizontal faces of peds; 55 percent well rounded gravel; slightly acid; clear smooth boundary.

C1--39 to 45 inches; brown (10YR 4/3) coarse sand; single grain; loose; 3 percent pebbles; slightly acid; clear smooth boundary.

C2--45 to 80 inches; grayish brown (10YR 5/2) loamy sand with thin discontinuous strata of extremely gravelly loamy sand; single grain; loose; 5 percent well rounded gravel, and 80 percent gravel in strata; moderately acid.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 25 to 54 inches
Depth to carbonates: 60 to more than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, very strongly acid to neutral in the surface, very strongly acid to slightly acid in the upper subsoil, strongly acid to slightly acid in the lower subsoil, strongly acid to moderately alkaline in the substratum

Ap horizon:
Hue — 10YR
Value — 3 to 5
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 14 percent

Bt horizon (upper part):
Hue — 10YR, 2.5Y
Value — 4 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — loam, clay loam, silty clay loam sandy loam, sandy clay loam, coarse sandy loam
Content of rock fragments — 0 to 30 percent

Bt horizon (lower part):
Hue — 10YR, 2.5Y
Value — 4 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — loam, clay loam, silty clay loam, sandy loam, sandy clay loam, coarse sandy loam
Content of rock fragments — 5 to 60 percent

BC horizon:
Hue — 10YR, 2.5Y
Value — 4 to 6
Chroma -- 1 to 6
Texture of the fine earth fraction — loam, sandy loam, loamy sand, coarse sandy loam
Content of rock fragments — 0 to 75 percent

C horizon:
Hue —10YR, 2.5Y
Value — 4 to 6
Chroma -- 1 to 6
Texture of the fine earth fraction — loam, sandy loam, coarse sandy loam, loamy sand, coarse sand
Content of rock fragments — 0 to 85 percent

Keene Series

Depth class: Deep or very deep
Drainage class: Moderately well drained
Landform: Hill
Position on the landform: Summit, shoulder, footslope
Parent material: Silt mantle and the underlying residuum weathered from shale and siltstone
Slope range: 2 to 6 percent

Associated soils: Berks, Coshocton, Gilpin, Westmoreland

Taxonomic class: Fine-silty, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon
Keene silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Franklin Township, about 0.25 miles west of Millport, 1,575 feet east and 180 feet south of the northwest corner of sec. 14, T. 14 N., R. 4 W.

Ap--0 to 11 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many very fine roots; 2 percent channers; strongly acid; abrupt smooth boundary.

BE--11 to 18 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; common very fine roots; few faint yellowish brown (10YR 5/4) coatings on faces of peds; 2 percent channers; moderately acid; clear wavy boundary.

Bt1--18 to 25 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots; common distinct strong brown (7.5YR 5/4) clay films on faces of peds; 10 percent medium distinct gray (10YR 6/1) clay depletions on vertical faces of peds; 10 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 2 percent channers; strongly acid; clear wavy boundary.

2Bt2--25 to 35 inches; yellowish brown (10YR 5/6) silty clay loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 10 percent medium distinct gray (10YR 6/1) clay depletions on vertical faces of prisms; 15 percent medium distinct gray (10YR 6/1) iron depletions on vertical faces of prisms; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 2 percent channers; 3 percent parachanners; strongly acid; clear wavy boundary.

2Bt3--35 to 45 inches; yellowish brown (10YR 5/6) silty clay loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 10 percent medium distinct gray (10YR 6/1) clay depletions on vertical faces of peds; 30 percent medium distinct gray (10YR 6/1) irregular iron depletions in the matrix; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 5 percent channers; strongly acid; clear wavy boundary.

2Bt4--45 to 55 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct gray (10YR 6/1) and common faint yellowish brown (10YR 5/4) clay films on faces of peds; 10 percent medium distinct gray (10YR 6/1) clay depletions on vertical faces of peds; 15 percent medium distinct gray (10YR 6/1) irregular iron depletions in the matrix; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 5 percent channers; strongly acid; clear wavy boundary.

2Bt5--55 to 66 inches; yellowish brown (10YR 5/6) clay loam; moderate medium subangular blocky structure; firm; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 10 percent medium distinct gray (10YR 6/1) clay depletions on vertical faces of peds; 15 percent medium distinct gray (N 6/0) irregular iron depletions in the matrix; few medium distinct strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; few medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 5 percent channers; 3 percent parachanners; strongly acid; clear wavy boundary.

2Cr--66 to 76 inches; light yellowish brown (10YR 6/4) weathered sandstone.

Range in Characteristics
Depth to bedrock: 40 to more than 80 inches
Thickness of the solum: 30 to 70 inches
Thickness of loess mantle: up to 36 inches
Depth to carbonates: None above the bedrock
Kind of rock fragments: Siltstone, shale
Reaction: Unless limed, very strongly acid or strongly acid in the surface and upper subsoil, very strongly acid to slightly acid in the lower subsoil and substratum

Ap horizon:
Hue —10YR
Value — 4 or 5
Chroma – 2 or 3

Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 5 percent

2Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma – 1 to 6
Texture of the fine earth fraction — silty clay loam, clay loam
Content of rock fragments — 5 to 14 percent (2 to 10 percent soft fragments)

2C horizon (where present):
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 1 to 4
Texture of the fine earth fraction — silty clay loam, clay loam, silty clay
Content of rock fragments — 5 to 25 percent (2 to 10 percent soft fragments)

Kensington Series

Depth class: Deep
Drainage class: Moderately well drained
Landform: Till plain
Position on the landform: Summit, shoulder, backslope
Parent material: Loess, till and the underlying residuum weathered from sedimentary rock
Slope range: 2 to 25 percent
Associated soils: Berks, Canfield, Chili, Hazleton, Mechanicsburg

Taxonomic class: Fine-loamy, mixed, active, mesic Aquic Hapludults

Typical Pedon
Kensington silt loam, 6 to 15 percent slopes; in Columbiana County, Ohio, West Township, about 1.5 miles northeast of East Rochester, 2,464 feet east and 389 feet north of the southwest corner, sec. 23, T. 16 N., R. 5 W.

Ap--0 to 11 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; common fine roots; 5 percent pebbles; moderately acid; abrupt smooth boundary.

Bt1--11 to 17 inches; strong brown (7.5YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent medium prominent brown (10YR 5/3) clay depletions on faces of peds; 5 percent brown (10YR 4/3) Ap material in root and worm channels; 5 percent pebbles; very strongly acid; clear wavy boundary.

2Bt2--17 to 24 inches; strong brown (7.5YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent pebbles; very strongly acid; clear wavy boundary.

2Bt3--24 to 33 inches; yellowish brown (10YR 5/4) channery loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common prominent brown (7.5YR 5/4) clay films on faces of peds; 5 percent fine distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; few fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulations on faces of peds and lining pores; 5 percent pebbles and 20 percent channers; very strongly acid; clear wavy boundary.

3Bt4--33 to 39 inches; 90 percent yellowish brown (10YR 5/4), 10 percent light olive brown (2.5Y 5/4) channery loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 5 percent fine and medium distinct gray (10YR 6/1) irregular iron depletions in the matrix and lining pores; few fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds and lining pores; 20 percent channers; very strongly acid; clear wavy boundary.

3Bt5--39 to 45 inches; light olive brown (2.5Y 5/4) channery loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; few distinct yellowish brown (10YR 5/4) and few prominent brown (7.5YR 5/4) clay films on faces of peds; 15 percent fine prominent gray (N 5/0) irregular iron depletions in the matrix and lining pores; few fine and medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to

pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds and lining pores; 15 percent channers; very strongly acid; clear wavy boundary.

3BC--45 to 52 inches; light olive brown (2.5Y 5/4) channery loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; few faint light olive brown (2.5Y 5/4) clay films on faces of peds; 5 percent fine and medium prominent gray (N 5/0) irregular iron depletions in the matrix and lining pores; few fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix ssociated to pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds and lining pores; 20 percent channers; very strongly acid; clear wavy boundary.

3C--52 to 58 inches; light olive brown (2.5Y 5/4) extremely channery loam; few fine prominent gray (10YR 5/1) irregular mottles throughout; massive; firm; few prominent brown (7.5YR 5/4) clay films on rock fragments; few fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 80 percent channers; very strongly acid; clear wavy boundary.

3Cr--58 to 71 inches; grayish brown (10YR 5/2) weathered shale and siltstone.

3R--71 inches; brown (10YR 5/3) hard siltstone.

Range in Characteristics
Depth to bedrock: 40 to 80 inches
Depth to paralithic: 35 to 60 inches
Thickness of the solum: 30 to 60 inches
Thickness of loess mantle: 0 to 20 inches
Depth to residuum: 20 to 45 inches
Depth to carbonates: None above the bedrock
Kind of rock fragments: Sandstone, siltstone, igneous
Reaction: Unless limed, very strongly acid or strongly acid in the surface, very strongly acid to moderately acid in the subsoil, very stongly acid or strongly acid in the substratum

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 10 percent

Bt horizon :
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 5 to 30 percent

2Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam
Content of rock fragments — 5 to 30 percent

3Bt, 3BC horizon (where occurs):
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, sandy loam, fine sandy loam
Content of rock fragments — 5 to 40 percent

3C horizon (where occurs):
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silt loam, loam, fine sandy loam, sandy loam
Content of rock fragments — 20 to 80 percent

Lobdell Series

Depth class: Very deep
Drainage class: Moderately well drained
Landform: Flood plain
Position on the landform: Step
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Berks, Coshocton, Fitchville, Gilpin, Westmoreland

Taxonomic class: Fine-loamy, mixed, active, mesic Fluvaquentic Eutrudepts

Typical Pedon
Lobdell silt loam, 0 to 2 percent slopes, occasionally flooded; in Columbiana County, Ohio, Madison Township, about 0.5 mile south of Williamsport, 650 feet west and 1,650 feet north of the southeast corner of sec. 1, T. 10 N., R. 2 W.

Ap--0 to 10 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many fine

and medium roots; few pebbles; strongly acid; abrupt smooth boundary.

Bw1--10 to 16 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; few pebbles; strongly acid; gradual wavy boundary.

Bw2--16 to 32 inches; yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few fine roots; 10 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/8) irregular masses of iron accumulation in the matrix; few pebbles; moderately acid; clear wavy boundary.

BC--32 to 42 inches; dark yellowish brown (10YR 4/6) sandy loam; weak coarse subangular blocky structure; very friable; few fine roots; 20 percent medium distinct light brownish gray (10YR 6/2) irregular iron depletions in the matrix; common medium distinct yellowish brown (10YR 5/8) irregular masses of iron accumulation in the matrix; 5 percent pebbles; moderately acid; clear wavy boundary.

C1--42 to 65 inches; dark yellowish brown (10YR 4/4) sandy loam; massive; very friable; few pebbles; moderately acid; gradual wavy boundary.

C2--65 to 76 inches; yellowish brown (10YR 5/4) sandy loam; massive; very friable; 5 percent pebbles; moderately acid.

Range in Characteristics

Depth to bedrock: Greater than 60 inches
Thickness of the solum: 24 to 50 inches
Depth to carbonates: More than 40 inches
Kind of rock fragments: Sandstone, siltstone and shale
Reaction: Unless limed, strongly acid to neutral in the solum, moderately acid to neutral in the substratum

Ap or A horizon:
Hue — 10YR
Value — 4
Chroma -- 1 to 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Bw horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — silt loam, loam, sandy loam, silty clay loam
Content of rock fragments — 0 to 14 percent

C horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 to 6
Chroma -- 1 to 6
Texture of the fine earth fraction — silt loam, loam, sandy loam
Content of rock fragments — 0 to 14 percent

Lorain Series

Depth class: Very deep
Drainage class: Very poorly drained
Landform: Till plain
Position on the landform: Toeslope
Parent material: Silty and clayey glaciolacustrine sediments
Slope range: 0 to 2 percent
Associated soils: Canfield, Homewood, Ravenna, Rittman, Valley, Wadsworth

Taxonomic class: Fine, illitic, mesic Mollic Epiaqualfs

Typical Pedon

Trumbull County, Ohio; Southington Township; about 2.5 miles north of Delightful; 660 yards south of County Line Turnpike Road, 44 yards west of Barclay-Messerly Road.

Ap--0 to 7 inches; very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium and coarse granular structure; firm; many roots; slightly acid; abrupt smooth boundary.

BA--7 to 12 inches; dark gray (N 4/0) silty clay; weak medium and coarse prismatic structure parting to moderate medium subangular and angular blocky; very firm; many roots; many faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine and medium prominent strong brown (7.5YR 5/8) and reddish brown (5YR 4/4) masses of iron accumulation in ped interiors; strongly acid; clear wavy boundary.

Btg--12 to 31 inches; dark gray (N 4/0) silty clay; moderate medium and coarse prismatic structure parting to weak medium subangular and angular blocky; very firm; common roots; many faint very dark gray (10YR 3/1) and common faint dark gray (10YR 4/1) clay films on vertical and horizontal faces of peds; common fine and medium prominent reddish brown (5YR 4/4) and many fine and medium prominent strong brown (7.5YR 5/8) iron concentrations in ped interiors; strongly acid; clear wavy boundary.

Bt1--31 to 43 inches; yellowish brown (10YR 5/4) silty clay; weak medium prismatic structure parting to weak medium and coarse subangular and angular blocky; very firm; few roots; many faint dark gray (10RY 4/1) clay films on faces of peds; many fine and medium distinct gray (10YR 5/1) iron depletions in the matrix; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; moderately acid; gradual wavy boundary.

Bt2--43 to 49 inches; yellowish brown (10YR 5/4) silty clay; weak coarse prismatic structure parting to weak coarse subangular blocky; very firm; common distinct dark gray (10YR 4/1) clay films on vertical faces of peds; many medium prominent gray (5Y 5/1) iron depletions on faces of peds; 2 percent coarse fragments; neutral; clear wavy boundary.

BC—49 to 54 inches; gray (5Y 5/1) silty clay; weak coarse prismatic structure; very firm; common fine faint grayish brown (2.5Y 5/2) iron depletions; common fine and medium prominent yellowish brown (10YR 5/4) masses of iron accumulation; 2 percent coarse fragments; neutral; gradual wavy boundary.

Cg--54 to 62 inches; olive gray (5Y 5/2) silty clay; massive; very firm; commom fine and medium faint grayish brown (2.5Y 5/2) iron depletions: few fine and medium prominent dark brown (7.5YR 3/2) stains and concretions of iron and manganese oxide; 2 percent coarse fragments; strong efferevescence; moderately alkaline.

Range in Characteristics

Depth to bedrock: More than 60 inches
Thickness of solum: 40 to 60 inches
Depth to carbonates: 40 to 60 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, strongly acid to slightly acid in the surface and upper subsoil; slightly acid or neutral in the lower subsoil; and neutral to moderately alkaline in the substratum

A or Ap horizon:
Hue —10YR
Value —2 or 3
Chroma -- 1 or 2
Texture of the fine earth fraction — silty clay loam
Content of rock fragments — 0 to 2 percent

Btg horizon:
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 4 or 5
Chroma – 0 to 2
Texture of the fine earth fraction — silty clay, clay, silty clay loam
Content of rock fragments — 0 to 2 percent

Bt horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — silty clay, clay, silty clay loam
Content of rock fragments — 0 to 2 percent

BC horizon:
Hue — 10YR or 2.5Y
Value — 2 to 5
Chroma -- 1 to 6
Texture of the fine earth fraction — silty clay loam, silty clay, clay
Content of rock fragments — 0 to 2 percent

Cg horizon:
Hue —10YR or 2.5Y
Value — 4 or 5
Chroma -- 0 to 2
Texture of the fine earth fraction — silty clay loam, silty clay, clay
Content of rock fragments — 0 to 5 percent

Mechanicsburg Series

Depth class: Deep or very deep
Drainage class: Well drained
Landform: Till plain
Position on the landform: Summit, shoulder
Parent material: Loamy till over residuum weathered from fine grain sandstone and siltstone
Slope range: 2 to 15 percent
Associated soils: Berks, Coshocton, Gilpin, Kensington

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Hapludalfs

Typical Pedon

Mechanicsburg silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, about 2.0 miles east of Hanoverton, in Hanover Township, 250 feet east and 1,575 feet south of the northwest corner of sec. 26, T. 15 N., R. 4 W.

Ap--0 to 9 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; common

fine roots; few pebbles; slightly acid; abrupt smooth boundary.

Bt1--9 to 15 inches; strong brown (7.5YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; 5 percent pebbles; moderately acid; clear wavy boundary.

Bt2--15 to 22 inches; strong brown (7.5YR 5/6) gravelly loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; few fine distinct dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 15 percent pebbles; strongly acid; clear wavy boundary.

2Bt3--22 to 28 inches; yellowish brown (10YR 5/4) channery silt loam; few fine distinct light brownish gray (10YR 6/2) and prominent strong brown (7.5YR 5/8) irregular mottles throughout; moderate medium subangular blocky structure; friable; few fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on rock fragments; 25 percent channers; strongly acid; clear wavy boundary.

2Bt4--28 to 37 inches; yellowish brown (10YR 5/4) very channery silt loam; few fine and medium distinct gray (10YR 6/1) and prominent strong brown (7.5YR 5/8) irregular mottles throughout; moderate medium subangular blocky structure; friable, few fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on rock fragments; 50 percent channers; strongly acid; clear wavy boundary.

2BC--37 to 45 inches; light olive brown (2.5Y 5/4) very channery silt loam; few fine prominent gray (10YR 6/1) and strong brown (7.5YR 5/8) irregular mottles throughout; weak medium subangular blocky structure; firm; few fine roots; few prominent brown (7.5YR 5/4) clay films on faces of peds; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on rock fragments; 40 percent channers; strongly acid; clear wavy boundary.

2C--45 to 50 inches; light olive brown (2.5Y 5/4) extremely channery silt loam; few fine prominent gray (10YR 6/1) and strong brown (7.5YR 5/8) irregular mottles throughout; massive; firm; few prominent brown (7.5YR 5/4) clay films on rock fragments; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on rock fragments; 60 percent channers; 10 percent parachanners; strongly acid; clear wavy boundary.

2Cr--50 to 67 inches; light olive brown (2.5Y 5/4) soft layered shale and siltstone.

2R--67 inches; yellowish brown (10YR 5/4) shale and siltstone.

Range in Characteristics

Depth to bedrock: 40 to 72 inches
Thickness of the solum: 24 to 50 inches
Depth to carbonates: None above the bedrock
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, very strongly acid or strongly acid in the surface, very strongly acid to moderately acid in the subsoil and substratum

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 10 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam
Content of rock fragments — 2 to 20 percent

2Bt and 2BC horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — silt loam, loam, sandy loam
Content of rock fragments -- 15 to 50 percent

2C horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — silt loam, loam, sandy loam
Content of rock fragments — 60 to 90 percent

Morristown Series

Depth class: Very Deep
Drainage class: Well drained
Landform: Surface mine on hill

Position on the landform: Summit, shoulder, backslope, footslope
Parent material: Calcareous regolith, partly weathered fine earth and fragments of limestone and shale from surface mining operations
Slope range: 0 to 25 percent
Associated soils: Berks, Canfield, Gilpin, Mechanicsburg, Westmoreland

Taxonomic class: Loamy-skeletal, mixed, active, calcareous, mesic Typic Udorthents

Typical Pedon
Morristown silty clay loam, 8 to 25 percent slopes; in Columbiana County, Ohio, Madison Township, about 1.5 miles southwest of West Point, 560 feet west and 375 feet south of the northeast corner of sec. 18, T. 10 N., R. 2 W.

Ap--0 to 5 inches; yellowish brown (10YR 5/4) silty clay loam, pale brown (10YR 6/3) dry; weak fine granular structure; friable; common fine roots; 10 percent channers; neutral; abrupt smooth boundary.
C1--5 to 9 inches; variegated yellowish brown (10YR 5/4), 60 percent, brown (7.5YR 5/2), 40 percent, channery silty clay loam; massive; firm; few fine roots; 30 percent channers; slightly effervescent; slightly alkaline; clear wavy boundary.
C2--9 to 22 inches; variegated brown (7.5YR 5/2), 90 percent, and yellowish brown (10YR 5/6), 10 percent, very channery silty clay loam; massive; firm; few fine roots; 40 percent channers; 10 percent parachanners; slightly effervescent; slightly alkaline; clear wavy boundary.
C3--22 to 32 inches; variegated dark grayish brown (2.5Y 4/2), 60 percent, reddish brown (5YR 4/4), 20 percent, and yellowish brown (10YR 5/6), 20 percent, very channery silty clay loam; massive; firm; 40 percent channers; 15 percent parachanners; slightly effervescent; slightly alkaline; clear wavy boundary.
C4--32 to 80 inches; variegated dark grayish brown (2.5Y 4/2), 80 percent, reddish brown (5YR 4/4), 10 percent, and gray (10YR 5/1), 10 percent, very channery silty clay loam; massive; firm; 40 percent channers; 15 percent parachanners; slightly effervescent; slightly alkaline.

Range in Characteristics
Depth to bedrock: More than 60 inches
Thickness of the solum: 0 to 7 inches
Depth to carbonates: 0 to 7 inches
Kind of rock fragments: Limestone, sandstone, siltstone, shale
Reaction: Moderately alkaline to slightly acid in the surface soil, slightly alkaline or moderately alkaline in the substratum
Content of soft fragments: 5 to 20 percent

A horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma – 2 to 4
Texture of the fine earth fraction — silty clay loam
Content of rock fragments — 15 to 34 percent

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 to 4
Texture of the fine earth fraction — silty clay loam
Content of rock fragments — 5 to 14 percent

C horizon:
Hue — 5YR, 7.5YR, 10YR, 2.5Y or neutral
Value — 3 to 6
Chroma – 0 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam, with average clay content greater than 27 percent
Content of rock fragments — 30 to 70 percent; (20 to 35 percent in thin subhorizons)

Olmsted Series

Depth class: Very deep
Drainage class: Very poorly drained
Landform: Outwash plain, terrace
Position on the landform: Toeslope of plain, tread of terrace
Parent material: Loamy glaciofluvial deposits
Slope range: 0 to 2 percent
Associated soils: Bogart, Canfield, Chili, Fitchville, Glenford, Jimtown, Rittman, Valley, Wadsworth

Taxonomic class: Fine-loamy, mixed, active, mesic Mollic Endoaqualfs

Typical pedon
Olmsted loam, about 1.8 miles south of Copley Junction, in Copley Township, in Summit County, Ohio; 1,500 feet north of Wright Avenue, 2,000 feet south of State Route 162, and 2,100 feet south of White Pond, T. 2 N., R. 12 W.

Ap--0 to 8 inches; black (10YR 2/1) loam, very dark gray (10YR 3/1) dry; weak medium

granular structure; friable; many fine roots; very strongly acid; abrupt smooth boundary.

Eg1--8 to 13 inches; gray (5Y 6/1) loam; weak medium subangular blocky structure; firm; common fine roots; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in old root channels; very strongly acid; clear smooth boundary.

Eg2--13 to 21 inches; gray (5Y 5/1) coarse sandy loam; weak medium subangular blocky structure; few fine roots; many fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 5 percent pebbles; very strongly acid; clear smooth boundary.

Btg1--21 to 29 inches; gray (5Y 5/1) coarse sandy loam; weak medium subangular blocky structure; friable; common faint gray (5Y 5/1) clay films coating and bridging sand grains; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 5 percent pebbles; very strongly acid; clear smooth boundary.

Btg2--29 to 32 inches; dark gray (10YR 4/1) sandy clay loam; weak medium subangular blocky structure; friable; common faint dark gray (10YR 4/1) clay films bridging and coating sand grains; common medium prominent yellowish red (5YR 4/8) masses of iron accumulation in the matrix; strongly acid; abrupt smooth boundary.

BC--32 to 34 inches; strong brown (7.5YR 5/6) coarse sandy loam; weak coarse subangular blocky structure; friable; strongly acid; abrupt smooth boundary.

Cg--34 to 41 inches; dark gray (N 4/0) gravelly coarse sandy loam; massive; friable; many medium prominent yellowish red (5YR 4/6) masses of iron accumulation in the matrix; 25 percent pebbles; strongly acid; clear smooth boundary.

C--41 to 60 inches; brown (7.5YR 4/2) sandy clay loam; massive; friable; many coarse and very coarse prominent yellowish red (5YR 4/6) masses of iron accumulation in the matrix; moderately acid.

Range in characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 27 to 55 inches
Depth to carbonates: 50 to more than 80 inches
Kind of rock fragments: Sandstone, shale, igneous
Reaction: Unless limed, very strongly acid to slightly acid in the surface soil, very strongly acid to neutral in the upper subsoil, strongly acid to slightly alkaline in the lower subsoil and substratum

Ap horizon:
Hue — 10YR
Value — 2 or 3
Chroma -- 1 or 2
Texture of the fine earth fraction — silt loam, loam
Content of rock fragments — 0 to 10 percent

Eg horizon :
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 4 to 6
Chroma – 0 to 2
Texture of the fine earth fraction — coarse sandy loam, sandy loam, loam
Content of rock fragments — 0 to 10 percent

Btg horizon:
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 4 to 6
Chroma – 0 to 2
Texture of the fine earth fraction — coarse sandy loam, sandy loam, loam, sandy clay loam, clay loam
Content of rock fragments — 0 to 25 percent

BC horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 to 6
Chroma -- 1 to 6
Texture of the fine earth fraction — coarse sandy loam, sandy loam, loam, silt loam
Content of rock fragments — 0 to 25 percent

C horizon:
Hue — 7.5YR, 10YR, 2.5Y, 5Y or neutral
Value — 3 to 6
Chroma – 0 to 6
Texture of the fine earth fraction — silt loam, coarse sandy loam, sandy loam, sandy clay loam, loamy sand, sand
Content of rock fragments — 0 to 50 percent

The surface soil texture is dominantly silt loam in Columbiana County although the referenced pedon from Summit County, Ohio is loam.

Omulga Series

Depth class: Very deep
Drainage class: Moderately well drained
Landform: Loess mantled stream terrace
Position on the landform: Tread, riser
Parent material: Loess over silty colluvium and /or old alluvium

Slope range: 2 to 12 percent
Associated soils: Berks, Coshocton, Tioga

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

Typical Pedon
Omulga silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, St. Clair Township, about 4.0 miles east of West Point, 1,300 feet west and 2,300 feet north of the southeast corner of sec. 6, T. 6 N., R. 1 W.

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

BA--9 to 13 inches; yellowish brown (10YR 5/4) silt loam; moderate fine and medium subangular blocky structure; friable; common fine and medium roots; few fine prominent dark brown (7.5YR 3/2) irregularly shaped masses of iron-manganese accumulation on faces of peds and few fine prominent dark brown (7.5YR 3/2) soft rounded iron-manganese concretions throughout; few channers; strongly acid; clear wavy boundary.

BE--13 to 19 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; firm; few fine roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; few distinct pale brown (10YR 6/3) silt coats in pores; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds; few channers; strongly acid; clear wavy boundary.

Bt1--19 to 27 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; very firm; few fine roots; common distinct brown (7.5YR 5/4) and common distinct gray (10YR 5/1) clay films on faces of peds; few distinct pale brown (10YR 6/3) silt coats on vertical faces of peds; 5 percent fine distinct light brownish gray (10YR 6/2) iron depletions lining pores; common fine prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation on faces of peds; many fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds; 5 percent channers; strongly acid; clear wavy boundary.

Bt2--27 to 34 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; very firm; few fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds and common prominent gray (10YR 6/1) clay films on vertical faces of peds; few distinct pale brown (10YR 6/3) silt coats on vertical faces of peds; 5 percent fine distinct light brownish gray (10YR 6/2) iron depletions lining pores and in the matrix; few fine prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation on faces of peds; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds; 5 percent channers; strongly acid; clear wavy boundary.

Btx--34 to 51 inches; 70 percent yellowish brown (10YR 5/6), 30 percent light yellowish brown (10YR 6/4) silty clay loam; weak very coarse prismatic structure parting to moderate medium platy; very firm; few fine roots; few distinct grayish brown (10YR 5/2) and common distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix and on vertical faces of peds; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation on vertical faces of peds between depletions and prism interiors; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds; few channers; 70 percent brittle; very strongly acid; clear wavy boundary.

BC--51 to 58 inches; 60 percent yellowish brown (10YR 5/6), 40 percent light yellowish brown (10YR 6/4) silt loam; weak medium and coarse subangular blocky structure; firm; few fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; 5 percent fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix and lining pores; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation lining pores; few fine prominent dark brown (7.5YR 3/2) platelike masses of iron-manganese accumulation on faces of peds; few channers; strongly acid; clear wavy boundary.

2C1--58 to 70 inches; 60 percent yellowish brown (10YR 5/6), 40 percent light yellowish brown (2.5Y 6/3) sandy loam; massive; friable; 5 percent fine distinct light brownish gray (10YR 6/2) irregular iron depletions and few fine prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; few channers; strongly acid; gradual wavy boundary.

2C2--70 to 80 inches; 70 percent light yellowish brown (2.5Y 6/3), 30 percent yellowish brown (10YR 5/6) sandy loam; massive; friable; 5 percent fine distinct light brownish gray (10YR

6/2) irregular iron depletions and few fine prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; few channers; strongly acid.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of the solum: 40 to more than 80 inches
Depth to fragipan: 18 to 36 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Unless limed, very strongly acid to moderately acid in the surface soil, strongly acid to extremely acid in the upper subsoil, very strongly acid to moderately acid in the lower subsoil and ranges to neutral in thick silty clay and clay layers

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 3 to 8
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 5 percent

Btx horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma – 3 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 10 percent

2B't and 2C horizons:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, loam, sandy loam, silty clay loam, silty clay
Content of rock fragments — 0 to 14 percent

Orrville Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Flood plain
Position on the landform: Step
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Berks, Coshocton, Fitchville, Gilpin, Westmoreland

Taxonomic class: Fine-loamy, mixed, active, nonacid, mesic Fluventic Endoaquepts

Typical Pedon
Orrville silt loam, 0 to 2 percent slopes, occasionally flooded; in Columbiana County, Ohio, Hanover Township, about 0.1 mile southwest of Dungannon, 1,780 feet west and 2,340 feet north of the southeast corner of sec. 35, T. 15 N., R. 4 W.

Ap--0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; weak medium and coarse granular structure; friable; many fine and medium roots; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation lining pores; few pebbles; moderately acid; abrupt smooth boundary.
Bg--10 to 13 inches; gray (10YR 5/1) silt loam; weak medium and coarse subangular blocky structure; friable; common fine and medium roots; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation lining pores; few pebbles; moderately acid; clear wavy boundary.
Bw1--13 to 18 inches; yellowish brown (10YR 5/4) loam; weak medium and coarse subangular blocky structure; friable; few fine roots; 45 percent medium distinct grayish brown (10YR 5/2) iron depletions on faces of peds and in pores; 25 percent medium distinct grayish brown (10YR 5/2) irregular iron depletions in the matrix; common medium prominent brown (7.5YR 4/4) irregular masses of iron accumulation in the matrix; many medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding depletions; few pebbles; moderately acid; clear wavy boundary.
Bw2--18 to 25 inches; yellowish brown (10YR 5/4) loam; weak coarse subangular blocky structure; friable; few fine roots; 40 percent medium distinct gray (10YR 5/1) iron depletions on faces of peds and in pores; many medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; few pebbles; slightly acid; gradual wavy boundary.
Bw3--25 to 32 inches; yellowish brown (10YR 5/4) loam; weak coarse subangular blocky structure; friable; few fine roots; 40 percent medium distinct gray (10YR 5/1) iron

depletions on faces of peds and in pores; common medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix associated to pores; common medium prominent brown (7.5YR 4/4) irregular masses of iron accumulation in the matrix; 5 percent pebbles; slightly acid; gradual wavy boundary.

BC--32 to 50 inches; dark yellowish brown (10YR 4/4) gravelly loam; weak coarse subangular blocky structure; friable; few fine roots; 5 percent medium distinct gray (10YR 5/1) irregular iron depletions in the matrix; common medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix surrounding depletions; 20 percent pebbles; slightly acid; gradual wavy boundary.

C--50 to 60 inches; brown (10YR 4/3) gravelly loam; massive; friable; 20 percent pebbles; moderately acid; gradual wavy boundary.

Cg1--60 to 70 inches; dark grayish brown (2.5Y 4/2) very gravelly sandy loam; massive; friable; 55 percent pebbles; moderately acid; gradual wavy boundary.

Cg2--70 to 80 inches; dark grayish brown (2.5Y 4/2) extremely gravelly sandy loam; massive; friable; 65 percent pebbles; slightly acid.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 24 to 50 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, slightly acid to strongly acid in the surface soil, slightly acid to strongly acid in the upper subsoil, slightly acid to strongly acid in the lower subsoil, neutral to strongly acid in the substratum

Ap horizon:
Hue — 10YR
Value — 4
Chroma -- 2
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Bg horizon:
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 4 to 6
Chroma -- 0 to 2
Texture of the fine earth fraction — silt loam, loam, silty clay loam
Content of rock fragments — 0 to 14 percent

Bw horizon:
Hue — 10YR, 2.5Y
Value — 4 to 6
Chroma – 3 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam
Content of rock fragments — 0 to 14 percent

C horizon:
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 4 to 6
Chroma – 0 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, sandy loam
Content of rock fragments — 0 to 70 percent

The Orrville pedon has more rock fragments in the lower part of the C horizon (below 60 inches) than is defined as typical for the series. This should not adversely impact the use and management of the soil for most purposes.

Rainsboro Series

Depth class: Very deep
Drainage class: Moderately well drained (Figure 27)
Landform: Loess mantled stream terrace
Position on the landform: Tread, riser
Parent material: Loess over outwash
Slope range: 2 to 12 percent
Associated soils: Calcutta, Homewood, Kensington, Tioga

Taxonomic class: Fine-silty, mixed, superactive, mesic Oxyaquic Fragiudalfs

Typical Pedon

Rainsboro silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Elk Run Township, about 3/4 of a mile northwest of Williamsport, 1,602 feet east and 2,726 feet south of the northwest corner of sec. 36, T. 11 N., R. 2 W.

Ap--0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.

BE--8 to 11 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine and medium roots; strongly acid; clear smooth boundary.

Figure 27. A typical profile of Rainsboro soils.

Bt--11 to 20 inches; yellowish brown (10YR 5/6) silt loam; moderate medium subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 5/4) clay films on faces of peds; strongly acid; clear wavy boundary.

2Btx1--20 to 26 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and coarse subangular blocky structure; very firm; few fine roots; few distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent fine distinct light brownish gray (10YR 6/2) iron depletions lining pores and in the matrix; common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; 5 percent pebbles; 20 percent brittle; strongly acid; clear wavy boundary.

2Btx2--26 to 30 inches; yellowish brown (10YR 5/4) loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 30 percent medium distinct light brownish gray (10YR 6/2) iron depletions on vertical faces of peds and lining pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation on vertical faces of peds between depletions and prism interiors; 10 percent pebbles; 80 percent brittle; strongly acid; clear wavy boundary.

2Btx3--30 to 41 inches; yellowish brown (10YR 5/4) clay loam; moderate very coarse prismatic structure parting to moderate medium subangular blocky; very firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 50 percent medium distinct light brownish gray (10YR 6/2) iron depletions on vertical faces of peds and lining pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation on vertical faces of peds between depletions and prism interiors; few pebbles; 80 percent brittle; strongly acid; clear wavy boundary.

2B’t1--41 to 46 inches; yellowish brown (10YR 5/4) loam; weak very coarse subangular blocky structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct brown (7.5YR 5/4) and common prominent gray (N 5/0) clay films on faces of peds; 20 percent medium distinct light brownish gray (10YR 6/2) iron depletions on faces of peds and lining pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; 5 percent pebbles; strongly acid; clear wavy boundary.

2B’t2--46 to 56 inches; yellowish brown (10YR 5/4) loam; weak very coarse subangular blocky structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct brown (7.5YR 5/4) and common prominent gray (N 5/0) clay films on faces of peds; 15 percent medium distinct light brownish gray (10YR 6/2) iron depletions on faces of peds and lining pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; 5 percent pebbles; strongly acid; clear wavy boundary.

2B’t3--56 to 65 inches; brown (7.5YR 4/4) gravelly clay loam; weak very coarse subangular blocky structure; friable; few fine roots; common faint brown (7.5YR 5/4) clay films on faces of peds; 10 percent medium prominent light brownish gray (10YR 6/2) iron depletions lining pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix associated to pores; 20 percent pebbles; strongly acid; clear wavy boundary.

2B’t4--65 to 80 inches; brown (7.5YR 4/4) gravelly loam; weak coarse and medium subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 5/4) clay films on faces of peds; 5 percent medium prominent light brownish gray (10YR 6/2) irregular iron depletions in the matrix; common medium distinct strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix surrounding depletions; 20 percent pebbles; strongly acid; clear wavy boundary.

Range in Characteristics

Depth to bedrock: More than 80 inches

Thickness of the solum: More than 80 inches

Depth to fragipan: 20 to 30 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, very strongly acid to slightly acid throughout the profile

Ap horizon:
Hue — 10YR
Value — 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 2 percent

BE and Bt horizons:
Hue — 10YR
Value — 4 or 5
Chroma – 4 or 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 2 percent

Btx horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 2 to 35 percent

2Btx horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 4 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam
Content of rock fragments — 2 to 35 percent

2Bt and 2BC horizons:
Hue — 5YR, 7.5YR, 10YR
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — clay loam, loam, sandy loam
Content of rock fragments — 2 to 35 percent

3Bt and 3C horizons:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 2 to 4
Texture of the fine earth fraction — silt loam, loam, silty clay loam, silty clay
Content of rock fragments — 2 to 35 percent

Ravenna Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Till plain
Position on the landform: Summit, backslope, footslope, toeslope
Parent material: Loamy till
Slope range: 0 to 6 percent
Associated soils: Canfield, Chili, Zepernick

Taxonomic class: Fine-loamy, mixed, active, mesic Aeric Fragiaqualfs

Typical Pedon
Ravenna silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Butler Township, about 1.0 mile northwest of Winona, 1,800 feet south and 1,775 feet east of the northwest corner of sec. 27, T. 16 N., R. 4 W.

Ap--0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; many very fine roots; 5 percent pebbles; slightly acid; abrupt smooth boundary.

E--10 to 13 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium platy structure; friable; common very fine roots; 10 percent fine faint light brownish gray (10YR 6/2) clay depletions on faces of peds; 10 percent medium distinct gray (N 6/0) irregular iron depletions and common prominent yellowish brown (10YR 5/6) irregular masses of iron accumulation in the matrix; 5 percent pebbles; slightly acid; clear wavy boundary.

Bt1--13 to 21 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; few very fine roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; 60 percent medium distinct light brownish gray (10YR 6/2) clay depletions on faces of peds; 20 percent fine and medium distinct light brownish gray (10YR 6/2) irregular iron depletions and common prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; 5 percent pebbles; moderately acid; clear wavy boundary.

Bt2--21 to 25 inches; strong brown (7.5YR 5/6) silt loam; moderate medium prismatic structure parting to weak medium subangular blocky; firm, brittle; few very fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; many prominent gray (N 5/0) clay films on vertical faces of peds; 15 percent medium prominent gray (N 6/0) irregular iron depletions and few medium distinct strong brown (7.5YR 5/8) irregular masses of iron

accumulation in the matrix; few fine distinct dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 5 percent pebbles; moderately acid; clear wavy boundary.

Btx1--25 to 34 inches; yellowish brown (10YR 5/4) loam; moderate very coarse prismatic structure parting to moderate medium platy; firm; few very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent medium distinct gray (10YR 6/1) clay depletions on faces of prisms; 5 percent fine distinct gray (10YR 6/1) irregular iron depletions and many fine and medium prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 10 percent pebbles; 80 percent brittle; slightly acid; clear wavy boundary.

Btx2--34 to 42 inches; yellowish brown (10YR 5/4) silt loam; moderate very coarse prismatic structure parting to moderate medium subangular blocky; firm; few very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent medium distinct gray (10YR 6/1) clay depletions along faces of prisms; 5 percent fine distinct light brownish gray (10YR 6/2) irregular iron depletions and common fine and medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 5 percent pebbles; 80 percent brittle; neutral; clear wavy boundary.

BC1--42 to 50 inches; yellowish brown (10YR 5/4) gravelly silt loam; weak medium and coarse subangular blocky structure; firm; few very fine roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent fine distinct light brownish gray (10YR 6/2) irregular iron depletions and common fine and medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 20 percent pebbles; neutral; clear wavy boundary.

BC2--50 to 56 inches; yellowish brown (10YR 5/4) loam; weak medium subangular blocky structure; firm; few very fine roots; 15 percent medium distinct gray (10YR 5/1) irregular iron depletions and many medium and fine distinct yellowish brown (10YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 10 percent pebbles; slightly effervescent; slightly alkaline; clear wavy boundary.

C1--56 to 70 inches; light olive brown (2.5Y 5/4) loam; massive; firm; 50 percent medium distinct gray (N 5/0) irregular iron depletions and many fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; 10 percent pebbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

C2--70 to 80 inches; light olive brown (2.5Y 5/4) loam; massive; firm; 50 percent medium distinct gray (N 5/0) irregular iron depletions and common medium and fine prominent strong brown (7.5YR 5/8) irregular masses of iron accumulation in the matrix; 10 percent pebbles; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 40 to 80 inches
Depth to fragipan: 14 to 30 inches
Depth to carbonates: 60 to more than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, slightly acid to extremely acid in the surface; moderately acid to extremely acid in the upper subsoil; very strongly acid to neutral in the middle subsoil; very strongly acid to slightly alkaline in the lower subsoil; strongly acid to slightly alkaline in the substratum

Ap horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 1 to 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 2 to10

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, clay loam
Content of rock fragments — 2 to 14 percent

Btx horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 or 4
Texture of the fine earth fraction — silt loam, loam
Content of rock fragments — 5 to 20 percent

C horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — silt loam, loam, sandy loam
Content of rock fragments — 10 to 25 percent

Richland Series

Depth class: Very deep
Drainage class: Well drained
Landform: Hill
Position on the landform: Footslope
Parent material: Colluvium derived from interbedded sedimentary rock
Slope range: 15 to 40 percent
Associated soils: Berks, Coshocton, Gilpin, Guernsey, Hazleton, Orrville, Rainsboro, Westmoreland

Taxonomic class: Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs

Typical pedon
Richland loam, 15 to 25 percent slopes; in Belmont County, Ohio, Richland Township, about 2 miles south of St. Clairsville,; 2,600 feet east and 700 feet south of the northwest corner of sec. 1, T. 7 N., R. 4 W.

Ap--0 to 5 inches; dark brown (10YR 3/3) loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many roots; 10 percent flat and sub-rounded fragments of fine grained sandstone, including 3 percent more than 15 inches in length; slightly acid; abrupt smooth boundary.

BA--5 to 8 inches; 60 percent yellowish brown (10YR 5/6) and 40 percent brown (10YR 4/3) loam; weak fine subangular blocky structure parting to moderate fine granular; friable; many roots; 10 percent flat and sub-rounded fragments of fine grained sandstone, including 3 percent more than 15 inches in length; slightly acid; clear smooth boundary.

Bt1--8 to 20 inches; yellowish brown (10YR 5/6) loam; moderate fine and medium subangular blocky structure; friable; common roots; common distinct dark yellowish brown (10YR 4/4) clay films and brown (10YR 5/3) silt coats on faces of peds; 10 percent flat and sub-rounded fragments of fine grained sandstone; moderately acid; clear smooth boundary.

Bt2--20 to 36 inches; yellowish brown (10YR 5/6) channery loam; moderate medium subangular blocky structure; friable; few roots; common distinct brown (7.5YR 4/4) clay films and brown (10YR 5/3) silt coats on faces of peds; strong brown (7.5YR 5/8) concretions and stains; 15 percent flat fragments of fine and coarse grained sandstone; moderately acid; gradual wavy boundary.

Bt3--36 to 44 inches; yellowish brown (10YR 5/6) channery clay loam; moderate medium subangular blocky structure; firm; few roots; common distinct brown (7.5YR 4/4) clay films on faces of peds and rock fragments; few distinct brown (10YR 5/3) and pale brown (10YR 6/3) silt coats on faces of peds; few fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; few fine faint yellowish brown (10YR 5/8) soft masses of iron oxide accumulation in the matrix; strong brown (7.5YR 5/8) iron-manganese concretions and stains; 20 percent flat fragments of fine and coarse grained sandstone; moderately acid; gradual wavy boundary.

Bt4--44 to 55 inches; strong brown (7.5YR 5/6) channery clay loam; moderate medium subangular blocky structure; firm; few roots; common faint brown (7.5YR 4/4) clay films on faces of peds and rock fragments; common distinct pale brown (10YR 6/3) and brown (10YR 5/3) silt coats on faces of peds; common medium prominent grayish brown (10YR 5/2) iron depletions in the matrix and yellowish brown (10YR 5/8) soft masses of iron oxide accumulation in the matrix; 30 percent flat and sub-rounded fragments of coarse grained sandstone; moderately acid; clear smooth boundary.

C--55 to 80 inches; variegated strong brown (7.5YR 5/6) and dark yellowish brown (10YR 4/4) very channery clay loam; common medium prominent grayish brown (10YR 5/2) iron depletions in the matrix and yellowish brown (10YR 5/8) soft masses of iron oxide accumulation in the matrix; massive; firm; 45 percent flat and sub-rounded fragments of coarse grained sandstone; slightly acid.

Range in characteristics
Depth to bedrock: Greater than 80 inches
Thickness of the solum: 44 to 60 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, limestone
Reaction: Unless limed, strongly acid to neutral in the A and upper Bt horizons and moderately acid to neutral in the lower Bt and C horizons

A horizon:
Hue — 10YR
Value — 3
Chroma -— 2 or 3
Texture of the fine earth fraction — silt loam, loam
Content of rock fragments — 5 to 20 percent

Bt horizon (upper):
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma –- 3 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam, silty clay loam, sandy clay loam
Content of rock fragments — 5 to 20 percent

Bt horizon (lower):
Hue — 7.5YR, 10YR,
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam, silty clay loam, sandy clay loam
Content of rock fragments — 20 to 34 percent

C horizon:
Hue — 7.5 YR, 10YR
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam, silty clay loam
Content of rock fragments — 20 to 55 percent

Rittman Series

Depth class: Very deep
Drainage class: Moderately well drained
Landform: Till plain
Position on the landform: Summit, shoulder, backslope
Parent material: Loamy till
Slope range: 2 to 20 percent
Associated soils: Fitchville, Wadsworth, Zepernick

Taxonomic class: Fine-loamy, mixed, active, mesic Aquic Fragiudalfs

Typical Pedon
Rittman silt loam, 2 to 6 percent slopes; in Columbiana County, Ohio, Knox Township, about 0.75 mile northeast of Homeworth, 2,275 feet west and 940 feet north of the southeast corner of sec. 20, T. 17 N., R. 5 W.

Ap--0 to 10 inches; dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; weak fine and medium granular structure; friable; many very fine roots; few pebbles; neutral; abrupt smooth boundary.

Bt1--10 to 13 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 5 percent medium distinct brown (10YR 5/3) clay depletions on vertical faces of peds; 5 percent fine distinct pale brown (10YR 6/3) irregular iron depletions in the matrix; few pebbles; moderately acid; clear wavy boundary.

Bt2--13 to 18 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium prismatic structure parting to weak medium subangular blocky; friable; common very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 15 percent medium prominent gray (10YR 5/1) clay depletions along faces of prisms; 10 percent fine prominent gray (10YR 6/1) irregular iron depletions in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; few pebbles; strongly acid; clear wavy boundary.

Bt3--18 to 21 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to weak medium platy; friable; common very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; 15 percent medium distinct gray (10YR 5/1) clay depletions along faces of prisms; 15 percent medium distinct gray (10YR 6/1) irregular iron depletions and common fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; common fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 10 percent pebbles; strongly acid; clear wavy boundary.

Btx1--21 to 32 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate coarse prismatic structure parting to moderate medium platy; firm; few very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; common prominent gray (N 5/0) clay films along faces of prisms; 20 percent medium and fine gray (7.5YR 5/1) irregular iron depletions and common medium and fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; common fine prominent strong brown (7.5YR 5/6) rind of iron accumulation between the films and prism interiors; common fine

prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation on faces of peds; 5 percent pebbles; 70 percent brittle; strongly acid; clear wavy boundary.

Btx2--32 to 44 inches; yellowish brown (10YR 5/4) silty clay loam; moderate very coarse prismatic structure parting to moderate coarse and very coarse platy; firm; few very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; few distinct gray (10YR 5/1) clay films along faces of prisms; 15 percent fine distinct gray (10YR 5/1) irregular iron depletions and few medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent strong brown (7.5YR 5/6) rind of iron accumulation between the films and prism interiors; common fine prominent dark brown (7.5YR 3/2) masses of iron -manganese accumulation on faces of peds; 10 percent pebbles; 80 percent brittle; moderately acid; clear wavy boundary.

C1--44 to 50 inches; yellowish brown (10YR 5/4) silty clay loam; massive; firm; 5 percent fine distinct gray (10YR 5/1) irregular iron depletions and few fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 5 percent pebbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

C2--50 to 65 inches; yellowish brown (10YR 5/4) silty clay loam; massive; firm; 10 percent medium distinct gray (10YR 5/1) irregular iron depletions and common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 5 percent pebbles; slightly effervescent; slightly alkaline; gradual wavy boundary.

C3--65 to 80 inches; yellowish brown (10YR 5/4) clay loam; common medium distinct gray (10YR 5/1) and common medium prominent strong brown (7.5YR 5/6) irregular mottles throughout; massive; firm; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 5 percent pebbles; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 34 to 60 inches
Depth to fragipan: 18 to 36 inches
Depth to carbonates: 36 to more than 60 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, moderately acid to extremely acid in the Ap horizon, strongly acid to extremely acid in the Bt horizon except for the upper part that ranges to moderately acid, strongly acid or very strongly acid in the upper part of the Btx horizon and moderately acid to neutral in the lower part. Reaction is slightly acid to slightly alkaline in the substratum.

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 10 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 4 or 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam
Content of rock fragments — 2 to10 percent

Btx horizon:
Hue —10YR
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silty clay loam, clay loam
Content of rock fragments — 2 to 14 percent

C horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 3 or 4
Texture of the fine earth fraction — silty clay loam, clay loam
Content of rock fragments — 2 to 14 percent

Teegarden Series

Depth class: Very deep
Drainage class: Moderately well drained
Landform: Till plain
Position on the landform: Summit, shoulder, backslope, footslope
Parent material: Loess, till and the underlying residuum weathered from interbedded sedimentary rock
Slope range: 2 to 15 percent

Associated soils: Berks, Hazleton, Kensington, Mechanicsburg

Taxonomic class: Fine-loamy, mixed, active, mesic Aquic Fragiudalfs

Typical Pedon
Teegarden silt loam, 6 to 15 percent slopes; In Columbiana County, Ohio, Middleton Township, about 3 miles southwest of Negley, 2,187 feet west and 522 feet north of the southeast corner, sec. 21, T. 7 N., R. 1 W.

Ap--0 to 10 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak fine and medium granular structure; friable; many fine and medium roots; 5 percent intermixing of yellowish brown (10YR 5/6) subsoil; few pebbles; moderately acid; abrupt smooth boundary.

Bt1--10 to 14 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; common fine roots; few faint yellowish brown (10YR 5/4) clay films on faces of peds; few faint pale brown (10YR 6/3) silt coats lining pores; 5 percent pebbles; moderately acid; clear wavy boundary.

2Bt2--14 to 18 inches; yellowish brown (10YR 5/4) loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent medium distinct light brownish gray (10YR 6/2) iron depletions on faces of peds and lining pores; 10 percent pebbles; strongly acid; clear wavy boundary.

2Btx1--18 to 25 inches; yellowish brown (10YR 5/4) gravelly clay loam; weak coarse prismatic structure parting to moderate medium angular blocky; very firm; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 15 percent medium distinct light brownish gray (10YR 6/2) iron depletions along faces of prisms; common medium prominent strong brown (7.5YR 5/6) iron accumulation between the iron depletions and prism interiors; common fine prominent dark brown (7.5YR 3/2) irregularmasses of iron-manganese accumulation in the matrix; 15 percent pebbles; 40 percent brittle; strongly acid; clear wavy boundary.

2Btx2--25 to 34 inches; yellowish brown (10YR 5/4) clay loam; moderate very coarse prismatic structure parting to moderate medium platy; very firm; few fine roots; many prominent gray (N 5/0) clay films along faces of prisms and many distinct brown (7.5YR 5/4) clay films on faces of peds; 10 percent medium distinct grayish brown (10YR 5/2) iron depletions lining pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation between the iron depletions and prism interiors; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; 10 percent pebbles; 70 percent brittle; extremely acid; clear wavy boundary.

2B’t1--34 to 44 inches; yellowish brown (10YR 5/4) silt loam; weak very coarse prismatic structure parting to weak medium platy; friable; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 40 percent medium distinct gray (10YR 6/1) iron depletions along faces of prisms; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation between the iron depletions and prism interiors; common fine and medium prominent very dark gray (N 3/0) masses of iron-manganese accumulation in the matrix; 5 percent pebbles; 10 percent brittle; extremely acid; clear wavy boundary.

3B’t2--44 to 52 inches; light olive brown (2.5Y 5/4) silty clay; weak very coarse prismatic structure parting to moderate medium platy; very firm; few fine roots; common faint light olive brown (2.5YR 5/4) clay films on faces of peds and common distinct gray (N 6/0) clay films on faces of prisms; 15 percent medium prominent gray (10YR 6/1) iron depletions lining pores; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation between the iron depletions and prism interiors; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; few channers; extremely acid; clear wavy boundary.

3BC--52 to 60 inches; light olive brown (2.5Y 5/4) very channery silty clay loam; weak medium platy structure parting to moderate medium subangular blocky; firm; few fine roots; few distinct brown (7.5YR 5/4) clay films in pores; 10 percent medium prominent gray (10YR 6/1) iron depletions lining pores; common medium prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 40 percent channers; very strongly acid; gradual wavy boundary.

3C--60 to 65 inches; light olive brown (2.5Y 5/4) very channery loam; massive; firm; 10 percent medium prominent gray (10YR 6/1) iron depletions lining pores; common medium prominent dark brown (7.5YR 3/2) masses of

iron-manganese accumulation lining pores; 55 percent channers; very strongly acid; clear wavy boundary.

4Cr--65 to 80 inches; light gray (2.5Y 7/2) layered, weathered sandstone.

Range in Characteristics

Depth to bedrock: More than 80 inches
Depth to paralithic contact: More than 60 inches
Thickness of the solum: 50 to 80 inches
Depth to the fragipan: 18 to 30 inches
Depth to carbonates: None above the bedrock
Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Unless limed, very strongly acid or strongly acid in the surface and upper subsoil; extremely acid to strongly acid in the middle subsoil; very strongly or strongly acid in the lower subsoil and substratum

Ap horizon:
Hue — 10YR
Value — 4 or 5
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 5 percent

Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 4 or 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, clay loam
Content of rock fragments — 2 to 14 percent

2Bt horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 4 or 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, clay loam
Content of rock fragments — 5 to 14 percent

2Btx horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma – 4 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam, silty clay loam
Content of rock fragments — 5 to 20 percent

2B't horizon:
Hue -- 7.5YR, 10YR
Value – 4 or 5
Chroma -- 4 or 6
Texture of the fine earth fraction -- silt loam, loam, clay loam, silty clay loam
Content of rock fragments— 5 to 25 percent

3B't horizon:
Hue -- 10YR, 2.5Y
Value – 4 or 5
Chroma -- 4 or 6
Texture of the fine earth fraction - silt loam, silty clay loam, silty clay
Content of rock fragments— 0 to 25 percent

3BC horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, silty clay
Content of rock fragments — 0 to 50 percent

3C horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silt loam, loam, clay loam, silty clay loam
Content of rock fragments — 5 to 55 percent

Tioga Series

Depth class: Very deep
Drainage class: Well drained
Landform: Flood plain
Position on the landform: Step
Parent material: Loamy alluvium
Slope range: 0 to 2 percent
Associated soils: Conotton, Hazleton, Omulga, Westmoreland

Taxonomic class: Coarse-loamy, mixed, superactive, mesic Dystric Fluventic Eutrudepts

Typical Pedon

Tioga loam, 0 to 2 percent slopes, occasionally flooded; in Columbiana County, Ohio, St. Clair Township, about 2.0 miles west of Fredericktown, 960 feet west and 2,140 feet south of the northeast corner of sec. 9, T. 6 N., R. 1 W.

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

Bw1--9 to 22 inches; dark yellowish brown (10YR 4/4) loam; weak fine and medium subangular blocky structure; friable; common fine and medium roots; common faint brown (10YR 4/3) organic coats in root channels and pores;

few pebbles; strongly acid; clear wavy boundary.

Bw2--22 to 34 inches; dark brown (7.5YR 3/2) loam; common fine and medium prominent dark yellowish brown (10YR 4/4) irregular mottles in the matrix; weak medium and coarse subangular blocky structure; friable; common fine and medium roots; few pebbles; strongly acid; clear wavy boundary.

Bw3--34 to 40 inches; dark yellowish brown (10YR 4/4) loam; weak medium and coarse subangular blocky structure; friable; few fine roots; few pebbles; strongly acid; clear wavy boundary.

C1--40 to 68 inches; dark yellowish brown (10YR 4/4) sandy loam with thin strata of loamy sand; single grain; loose; few fine roots; few pebbles; moderately acid; diffuse wavy boundary.

C2--68 to 76 inches; brown (10YR 4/3) gravelly loamy sand; common fine faint brown (10YR 5/3) and prominent reddish brown (5YR 4/4) irregular mottles in the matrix; single grain; loose; 14 percent pebbles; moderately acid; clear wavy boundary.

C3--76 to 80 inches; yellowish brown (10YR 5/4) channery sandy loam; single grain; loose; 20 percent channers; moderately acid.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 20 to 40 inches
Depth to carbonates: 35 to more than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale
Reaction: Strongly acid to slightly alkaline in the A and Bw horizons; moderately acid to moderately alkaline in the C horizon

A horizon:
Hue —10YR
Value — 3 or 4
Chroma -- 2 to 4
Texture of the fine earth fraction — loam
Content of rock fragments — 0 to 10 percent

Bw horizon:
Hue — 7.5YR, 10YR
Value — 3 or 4
Chroma -- 2 to 4
Texture of the fine earth fraction — silt loam, loam, fine sandy loam, sandy loam
Content of rock fragments — 0 to 35 percent

C horizon:
Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 2 to 4
Texture of the fine earth fraction -- silt loam, loam, loamy sand, sandy loam, fine sandy loam
Content of rock fragments -- 0 to 50 percent

Upshur Series

Depth class: Deep or very deep
Drainage class: Well drained
Landform: Hill
Position on the landform: Summit, shoulder, backslope
Parent material: Residuum weathered from clay shale
Slope range: 2 to 40 percent
Associated soils: Berks, Coshocton, Gilpin

Taxonomic class: Fine, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Upshur silty clay loam, from an area of Upshur-Berks complex, 15 to 25 percent slopes, eroded; in Columbiana County, Ohio, Washington Township, about 2.25 miles northeast Salineville, 380 feet west and 1,500 feet north of the southeast corner of sec. 34, T. 13 N., R. 3 W.

Ap--0 to 8 inches; reddish brown (5YR 4/3) silty clay loam, pinkish gray (5YR 5/3) dry; weak fine and medium granular structure; friable; many fine and medium roots; 5 percent channers; strongly acid; abrupt smooth boundary.

Bt1--8 to 12 inches; reddish brown (5YR 4/4) silty clay; moderate fine and medium subangular blocky structure; firm, plastic and sticky; common fine and medium roots; many faint reddish brown (5YR 4/4) clay films on faces of peds; 10 percent intermixing of reddish brown (5YR 4/3) Ap material; 2 percent channers; strongly acid; clear wavy boundary.

Bt2--12 to 24 inches; reddish brown (5YR 4/4) silty clay; moderate medium subangular blocky structure; firm, plastic and sticky; few fine roots; many faint reddish brown (5YR 4/4) clay films on faces of peds; 2 percent channers; moderately acid; clear wavy boundary.

Bt3--24 to 34 inches; reddish brown (2.5YR 4/4) silty clay; moderate medium subangular blocky structure; firm, plastic and sticky; few fine roots; many distinct reddish brown (5YR 4/4) clay films on faces of peds; 5 percent channers; neutral; clear wavy boundary.

Bt4--34 to 38 inches; reddish brown (2.5YR 4/4) silty clay; moderate medium and coarse subangular blocky structure; firm, plastic and sticky; few fine roots; many faint reddish brown (2.5YR 4/4) clay films on faces of peds; 5 percent channers; strongly effervescent; moderately alkaline; clear wavy boundary.

BC--38 to 42 inches; reddish brown (2.5YR 4/4) silty clay; few fine and medium prominent gray (N 5/0) and dark reddish gray (5YR 4/2) irregular lithochromic mottles in the matrix; weak medium and coarse subangular blocky structure; firm, plastic and sticky; few fine roots; few faint reddish brown (2.5YR 4/4) clay films on faces of peds; 5 percent channers; strongly effervescent; moderately alkaline; clear wavy boundary.

C1--42 to 49 inches; reddish brown (2.5YR 4/4) silty clay; few fine and medium prominent gray (N 5/0) and dark reddish gray (5YR 4/2) irregular lithochromic mottles throughout; massive; firm; 5 percent channers; strongly effervescent; moderately alkaline; gradual wavy boundary.

C2--49 to 59 inches; dark reddish brown (2.5YR 3/4) silty clay loam; common fine and medium prominent brown (7.5YR 5/2) irregular lithochromic mottles throughout; massive; firm; 10 percent channers; strongly effervescent; moderately alkaline; gradual wavy boundary.

C3--59 to 72 inches; dark reddish brown (2.5YR 3/4) silty clay loam; common fine and medium prominent brown (7.5YR 5/2) and yellowish brown (10YR 5/6) bands throughout; massive; firm; 10 percent channers; strongly effervescent; moderately alkaline; clear wavy boundary.

Cr--72 to 80 inches; dark reddish brown (2.5YR 3/4) weathered mudstone.

Range in Characteristics

Depth to bedrock: 40 to 72 inches
Thickness of the solum: 26 to 50 inches
Depth to carbonates: 28 to more than 80 inches
Kind of rock fragments: Siltstone, shale
Reaction: Unless limed, very strongly acid to slightly acid in the Ap horizon; very strongly acid to moderately alkaline in the Bt horizons; and strongly acid to moderately alkaline in the C horizon

Ap horizon:
Hue — 2.5YR through 10YR
Value — 2 to 4
Chroma -- 2 to 4
Texture of the fine earth fraction — silty clay loam
Content of rock fragments — 0 to 14 percent

Bt horizon (upper):
Hue — 10R through 5YR
Value — 3 or 4
Chroma -- 3 to 6
Texture of the fine earth fraction — silty clay, clay
Content of rock fragments — 0 to 14 percent

Bt horizon (lower):
Hue — 10R through 5YR
Value — 3 or 4
Chroma -- 3 to 6
Texture of the fine earth fraction — silty clay, clay
Content of rock fragments — 0 to 25 percent

C horizon:
Hue — 10R, 5YR
Value — 3 or 4
Chroma – 4 to 6 (some pedons have variegated colors of olive, olive brown or yellow.)
Texture of the fine earth fraction — silty clay loam, silty clay
Content of rock fragments — 0 to 60 percent

Valley Series

Depth class: Very deep
Drainage class: Poorly drained
Landform: Till plain
Position on the landform: Depression in toeslope
Parent material: Glaciolacustrine sediments underlain by till
Slope range: 0 to 2 percent
Associated soils: Canfield, Lorain, Olmsted, Ravenna, Rittman, Wadsworth

Taxonomic class: Fine, mixed, active, nonacid, mesic Typic Endoaquepts

Typical pedon

Valley silt loam, 0 to 2 percent slopes; in Columbiana County, Ohio, Knox Township, about 2½ miles north of North Georgetown, 510 feet southwest along Georgetown-Damascus Road (Township Road 716) from the intersection of Case Road (Township Road 717), then 115 feet perpendicular to Georgetown-Damascus Road to the southeast, 2810 feet south and 930 feet west of the northeast corner of section 12, T. 17 N., R. 5 W.

Ap--0 to 7 inches; dark gray (2.5Y 4/1) silt loam, gray (10YR 6/1) dry; weak fine and medium granular structure; friable; many fine and

medium roots throughout; common fine prominent strong brown (7.5YR 4/6) soft masses of iron accumulation in root channels; moderately acid; abrupt smooth boundary.

AB--7 to 11 inches; dark gray (5Y 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common fine roots throughout; few distinct gray (10YR 5/1) iron depleted coats on faces of peds; common fine prominent strong brown (7.5YR 4/6) soft masses of iron accumulation in root channels; moderately acid; clear wavy boundary.

Bg1--11 to 21 inches; gray (N 5/) silty clay loam; moderate medium and coarse prismatic structure parting to weak medium angular blocky; very firm; few fine roots throughout; few distinct gray (10YR 5/1) iron depleted coats on faces of peds; common fine prominent strong brown (7.5YR 5/6) soft masses of iron accumulation in the matrix surrounding root channels; moderately acid; clear wavy boundary.

Bg2--21 to 26 inches; gray (5Y 5/1) silty clay; moderate coarse and very coarse subangular blocky structure; very firm; few fine roots throughout; few distinct gray (10YR 5/1) iron depleted coats on faces of peds; common fine and medium prominent yellowish brown (10YR 5/6) soft masses of iron accumulation in the matrix surrounding root channels; common fine prominent very dark gray (7.5YR 3/1) soft masses of iron-manganese accumulation in the matrix; moderately acid; gradual wavy boundary.

Bg3--26 to 30 inches; very dark gray (N3/) silty clay; moderate coarse subangular blocky structure; very firm; few fine roots throughout; many distinct very dark gray (N3/) pressure faces on vertical faces of peds; common fine and medium prominent yellowish brown (10YR 5/4) soft masses of iron accumulation in the matrix surrounding root channels; 1 percent rock fragments; moderately acid; gradual wavy boundary.

Bg4--30 to 41 inches; gray (N5/) silty clay loam; moderate coarse subangular blocky structure; very firm; few fine roots throughout; common fine and medium prominent yellowish brown (10YR 5/6) soft masses of iron accumulation in the matrix surrounding root channels; common fine prominent very dark gray (7.5YR 3/1) soft masses of iron-manganese accumulation in the matrix; moderately acid; gradual wavy boundary.

BCg--41 to 48 inches; gray (10YR 6/1) silty clay loam; weak coarse subangular blocky structure; very firm; common fine and medium prominent yellowish brown (10YR 5/6) soft masses of iron accumulation in the matrix; common fine prominent very dark gray (7.5YR 3/1) soft masses of iron-manganese accumulation in the matrix; moderately acid; gradual wavy boundary.

2BC--48 to 55 inches; yellowish brown (10YR 5/4) loam; weak coarse subangular blocky structure; firm; common medium distinct gray (10YR 5/1) iron depletions in the matrix; common fine and medium faint yellowish brown (10YR 5/6) soft masses of iron accumulation in the matrix; common fine prominent very dark gray (7.5YR 3/1) soft masses of iron-manganese accumulation in the matrix; 10 percent rock fragments; moderately acid; gradual wavy boundary.

2C1--55 to 71 inches; yellowish brown (10YR 5/4) clay loam; massive; firm; common medium distinct gray (10YR 5/1) iron depletions in the matrix; common fine and medium faint yellowish brown (10YR 5/6) soft masses of iron accumulation in the matrix; common fine prominent very dark gray (7.5YR 3/1) soft masses of iron-manganese accumulation in the matrix; 10 percent rock fragments; neutral; gradual wavy boundary.

2C2--71 to 80 inches; light olive brown (2.5Y 5/4) loam; massive; firm; common medium prominent gray (10YR 5/1) iron depletions in the matrix; common fine and medium distinct yellowish brown (10YR 5/6) soft masses of iron accumulation in the matrix; common fine prominent very dark gray (7.5YR 3/1) soft masses of iron-manganese accumulation in the matrix; 10 percent rock fragments; strongly effervescent; neutral.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 35 to 65 inches
Depth to till: 35 to 60 inches
Depth to carbonates: 45 to greater than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, very strongly acid to slightly acid in the A or Ap horizon, strongly acid to slightly alkaline in the Bg, moderately acid to moderately alkaline in the BCg, moderately acid to neutral in the 2BC, and slightly acid to moderately alkaline in the 2C horizon.

Ap horizon:
Hue — 10YR, 2.5Y
Value — 4

Chroma -- 1 to 3
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 2 percent

A horizon:
Hue — 10YR, 2.5Y
Value — 2 or 3
Chroma -- 1 to 3
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 2 percent

Bg horizon:
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 3 to 6
Chroma -- 0 to 2
Texture of the fine earth fraction — silt loam, silty clay loam, silty clay
Content of rock fragments — 0 to 2 percent

BCg horizon:
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 4 to 6
Chroma – 0 to 2
Texture of the fine earth fraction — silty clay loam, silty clay
Content of rock fragments — 0 to 2 percent

2BC horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, clay loam
Content of rock fragments — 2 to 30 percent

2C horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, clay loam
Content of rock fragments — 2 to 30 percent

Vandergrift Series

Depth class: Deep or very deep
Drainage class: Moderately well drained
Landform: Hill
Position on the landform: Backslope, footslope
Parent material: Residuum weathered from calcareous and noncalcareous interbedded sedimentary rock
Slope range: 2 to 15 percent
Associated soils: Berks, Gilpin, Upshur, Westmoreland

Taxonomic class: Fine, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon
Vandergrift silt loam, 6 to 15 percent slopes; in Columbiana County, Ohio, Washington Township, about 1.75 miles northeast of Salineville, 1,115 feet west and 886 feet south of the northeast corner of sec. 33, T. 13 N., R.3 W.

Ap--0 to 8 inches; brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium and fine granular structure; friable; many fine and medium roots; 5 percent channers; strongly acid; abrupt smooth boundary.

BA--8 to 15 inches; brown (7.5YR 5/4) silty clay loam; weak medium and fine subangular blocky structure; friable; common fine and medium roots; few distinct dark yellowish brown (10YR 4/4) organic coats on faces of peds and lining pores; common fine distinct dark brown (7.5YR 3/2) rounded friable iron-manganese nodules throughout; 5 percent channers; strongly acid; clear wavy boundary.

Bt--15 to 24 inches; reddish brown (2.5YR 4/4) silty clay; moderate medium angular blocky structure; firm, slightly sticky, moderately plastic; common fine and medium roots; common faint reddish brown (2.5YR 4/4) clay films on faces of peds; 2 percent fine prominent reddish gray (5YR 5/2) iron depletions lining pores; few parachanners; strongly acid; clear wavy boundary.

Btss--24 to 30 inches; weak red (10R 4/4) silty clay; moderate medium and coarse angular blocky structure; firm, slightly sticky, moderately plastic; few fine roots; common distinct reddish brown (2.5YR 4/4) clay films on faces of peds; common slickensides; 5 percent fine prominent reddish gray (5YR 5/2) iron depletions lining pores; common fine and medium prominent yellowish red (5YR 5/6) masses of iron accumulation lining pores; few parachanners; strongly acid; clear wavy boundary.

B't--30 to 48 inches; variegated reddish brown (5YR 4/4), 60 percent, weak red (10R 4/2), 40 percent, parachannery silty clay; moderate coarse subangular blocky structure; firm, slightly sticky, slighty plastic; few fine roots; common faint reddish brown (5YR 4/4) clay films on faces of peds; 5 percent fine distinct pinkish gray (5YR 6/2) iron depletions lining pores; common fine and medium prominent strong brown (7.5YR 5/8) masses of iron

accumulation lining pores; 10 percent channers; 15 percent parachanners; strongly acid; clear wavy boundary.

BC--48 to 52 inches; reddish brown (5YR 4/3) silty clay loam; weak coarse and medium subangular blocky structure; firm; few fine roots; 5 percent channers; 5 percent parachanners; strongly acid; gradual wavy boundary.

C--52 to 76 inches; dark reddish brown (2.5YR 3/4) very parachannery silty clay; massive; firm; 50 percent parachanners; slightly acid; gradual wavy boundary.

Cr--76 to 80 inches; light yellowish brown (2.5Y 6/4) platy mudstone

Range in Characteristics

Depth to bedrock: 40 to 80 inches
Thickness of the solum: 35 to 60 inches
Depth to carbonates: 45 to greater than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, limestone
Reaction: Unless limed, very strongly acid to moderately acid in the surface; very strongly acid to slightly acid in the subsoil; strongly acid to slightly alkaline in the substratum

Ap horizon:
Hue — 7.5YR, 10YR
Value — 3 or 4
Chroma -- 3 or 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 10 percent

Bt, Btss, or B't horizon:
Hue — 10R through 5YR
Value — 3 to 5
Chroma – 2 to 6
Texture of the fine earth fraction — silty clay loam, silty clay, clay
Content of rock fragments — 0 to 25 percent

BC horizon:
Hue —10R through 5YR
Value — 4 or 5
Chroma -- 2 to 6
Texture of the fine earth fraction — silty clay loam, silty clay
Content of rock fragments — 0 to 75 percent

C horizon:
Hue —10R through 10YR
Value — 3 to 6
Chroma -- 2 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, silty clay, clay
Content of rock fragments — 0 to 75 percent

The Vandergrift pedon has slightly more rock fragments in the B't horizon than is defined as typical for the series. This should not adversely affect use and management of the soil for most purposes.

Wadsworth Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Till plain
Position on the landform: Summit, backslope, footslope, toeslope
Parent material: Till
Slope range: 0 to 6 percent
Associated soils: Rittman, Zepernick

Taxonomic class: Fine-silty, mixed, active, mesic Aeric Fragiaqualfs

Typical Pedon

Wadsworth silt loam, 2 to 6 percent slope; in Columbiana County, Ohio, Knox Township, about 1.75 miles north of Homeworth, 1,956 feet north and 493 feet east of the southwest corner of sec. 17, T. 17 N., R. 5 W.

Ap--0 to 8 inches; brown (10YR 5/3) silt loam, light gray (10YR 7/2) dry; weak fine and medium granular structure; friable; many very fine roots; few pebbles; slightly acid; abrupt smooth boundary.

BE--8 to 11 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common very fine roots; 10 percent medium distinct light brownish gray (10YR 6/2) clay depletions on faces of peds; 10 percent fine distinct gray (10YR 6/1) irregular iron depletions in the matrix; few pebbles; strongly acid; clear smooth boundary.

Bt1--11 to 22 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct light brownish gray (10YR 6/2) clay films on faces of peds; 5 percent fine distinct pale brown (10YR 6/3) clay depletions on faces of peds; 10 percent medium prominent gray (10YR 6/1) irregular iron depletions in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; few pebbles; strongly acid; clear wavy boundary.

Bt2--22 to 27 inches; yellowish brown (10YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; common distinct brown (7.5YR 5/4) and many distinct gray (10YR 6/1) clay films on faces of peds; 15 percent medium prominent gray (10YR 6/1)irregular iron depletions in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; few pebbles; strongly acid; clear wavy boundary.

Btx1--27 to 34 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate very coarse prismatic structure parting to moderate medium platy; firm; few very fine roots; common faint yellowish brown (10YR 5/4) clay films on faces of peds; common distinct light brownish gray (10YR 6/2) iron depletions on faces of prisms; 15 percent medium distinct gray (10YR 6/1) irregular iron depletions and few medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 5 percent pebbles; 70 percent brittle; strongly acid; clear wavy boundary.

Btx2--34 to 46 inches; dark yellowish brown (10YR 4/4) clay loam; moderate very coarse prismatic structure parting to weak medium subangular blocky; firm; common faint yellowish brown (10YR 5/4) clay films on faces of peds; common distinct light brownish gray(10YR 6/2) clay films on vertical faces of prisms; 15 percent medium distinct gray (10YR 6/1) irregular iron depletions and common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) masses of iron-manganese accumulation lining pores; 5 percent pebbles; 70 percent brittle; strongly acid; clear wavy boundary.

BC--46 to 60 inches; yellowish brown (10YR 5/4) silty clay loam; weak medium and coarse subangular blocky structure; firm; 10 percent fine and medium distinct gray (10YR 6/1) irregular iron depletions and common fine and medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; common fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 10 percent pebbles; strongly acid; clear wavy boundary.

C1--60 to 70 inches; dark yellowish brown (10YR 4/4) clay loam; massive; firm; 5 percent fine and medium distinct gray (10YR 6/1) irregular iron depletions and few medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 10 percent pebbles; moderately acid; gradual wavy boundary.

C2--70 to 80 inches; dark yellowish brown (10YR 4/4) gravelly clay loam; massive; firm; 10 percent fine and medium distinct gray (10YR 6/1) irregular iron depletions and common fine and medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation throughout the matrix; 15 percent pebbles; moderately acid.

Range in Characteristics

Depth to bedrock: More than 80 inches
Thickness of the solum: 34 to 60 inches
Depth to fragipan: 18 to 30 inches
Depth to carbonates: 34 to 60 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, extremely acid to moderately acid in the surface and upper subsoil; very strongly acid to neutral in the Btx; strongly acid to slightly alkaline in the BC; moderately acid to moderately alkaline in the substratum

Ap horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 1 to 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 4 percent

Bt horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma – 3 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, less commonly clay loam
Content of rock fragments — 0 to 4 percent

Btx horizon:
Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam
Content of rock fragments — 2 to 10 percent

C horizon:

Hue — 10YR, 2.5Y
Value — 4 or 5
Chroma -- 3 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, clay loam
Content of rock fragments — 5 to 14 percent

Westmoreland Series

Depth class: Deep or very deep
Drainage class: Well drained
Landform: Hill
Position on the landform: Shoulder, backslope
Parent material: Loamy colluvium and residuum weathered from interbedded sedimentary rock
Slope range: 8 to 70 percent
Associated soils: Berks, Coshocton, Guernsey

Taxonomic class: Fine-loamy, mixed, active, mesic Ultic Hapludalfs

Typical Pedon
Westmoreland silt loam from an area of Westmoreland-Berks complex, 40 to 70 percent slopes; in Columbiana County, Ohio, Washington Township, about 1.5 miles northwest of Salineville, 2,150 feet north and 236 feet east of the southwest corner of sec. 32, T. 13 N., R. 3 W.

Oe--0 to 1 inch; partially decayed leaf litter.
A--1 to 2 inches; very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; very friable; many fine roots; 5 percent channers; very strongly acid; abrupt smooth boundary.
E--2 to 4 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; very friable; common fine roots; 5 percent channers; strongly acid; clear wavy boundary.
BE--4 to 9 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common fine roots; few faint yellowish brown (10YR 5/4) silt coats on faces of peds; 10 percent channers; strongly acid; clear wavy boundary.
Bt1--9 to 17 inches; brown (7.5YR 5/4) channery silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common faint brown (7.5YR 5/4) clay films on faces of peds; 15 percent channers; strongly acid; clear wavy boundary.
Bt2--17 to 28 inches; yellowish brown (10YR 5/4) channery silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 20 percent channers; very strongly acid; clear wavy boundary.
Bt3--28 to 38 inches; yellowish brown (10YR 5/4) very channery silty clay loam; weak medium subangular blocky structure; friable; few fine roots; common distinct brown (7.5YR 5/4) clay films on faces of peds; 30 percent channers; 10 percent parachanners; strongly acid; clear smooth boundary.
BC--38 to 49 inches; yellowish brown (10YR 5/4) very channery silty clay loam; weak medium subangular blocky structure; firm; few fine roots; few distinct brown (7.5YR 5/4) clay films on rock fragments; 55 percent channers; strongly acid; clear wavy boundary.
C1--49 to 68 inches; yellowish brown (10YR 5/4) extremely channery silty clay loam; few medium distinct light brownish gray (10YR 6/2) and strong brown (7.5YR 5/6) irregular mottles throughout; massive; firm; 55 percent channers; 30 percent parachanners; moderately acid; clear wavy boundary.
C2--68 to 78 inches; yellowish brown (10YR 5/4) very parachannery silty clay loam; few medium distinct gray (10YR 6/1) and strong brown (7.5YR 5/6) irregular mottles throughout; massive; firm; 15 percent channers; 30 percent parachanners; moderately acid; clear wavy boundary.
C3--78 to 80 inches; dark yellowish brown (10YR 4/4) very parachannery silty clay loam; common medium distinct gray (10YR 6/1) and strong brown (7.5YR 5/6) irregular mottles throughout; massive; firm; 20 percent channers; 38 percent parachanners; moderately acid; clear wavy boundary.

Range in Characteristics
Depth to bedrock: 40 to 72 inches or more
Thickness of the solum: 30 to 50 inches
Depth to carbonates: None above the bedrock
Kind of rock fragments: Sandstone, siltstone, limestone
Reaction: Unless limed, very strongly acid to moderately acid throughout the solum; strongly acid or moderately acid in the substratum

A or Ap horizon:
Hue — 10YR
Value — 3 or 4
Chroma – 2 or 3
Texture of the fine earth fraction — silt loam, loam
Content of rock fragments — 2 to 20 percent

Bt horizon:

Hue — 7.5YR, 10YR
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, clay loam, loam
Content of rock fragments — 2 to 30 percent

C horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 or 5
Chroma -- 4 to 6
Texture of the fine earth fraction — silt loam, loam, silty clay loam, clay loam
Content of rock fragments — 15 to 90 percent

Wick Series

Depth class: Very deep
Drainage class: Very poorly drained
Landform: Flood plain
Position on the landform: Step
Parent material: Silty alluvium
Slope range: 0 to 2 percent
Associated soils: Canfield, Fitchville, Ravenna

Taxonomic class: Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts

Typical Pedon
Wick silt loam, 0 to 2 percent slopes, frequently flooded; in Columbiana County, Ohio, Perry Township, about 1 mile north of Salem, 1,440 feet west and 240 feet south of the northeast corner of sec. 29, T. 16 N., R. 3 W.

A--0 to 5 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine and medium granular structure; friable; many fine roots; many fine dendritic prominent strong brown (7.5YR 5/6) masses of iron accumulation lining pores; strongly acid; abrupt smooth boundary.
Bg1--5 to 12 inches; gray (10YR 5/1) silt loam; weak medium subangular blocky structure; friable; common fine roots; common fine dendritic prominent red (2.5YR 4/6) masses of iron accumulation lining pores; very strongly acid; clear wavy boundary.
Bg2--12 to 24 inches; gray (10YR 5/1) silty clay loam; weak medium and coarse subangular blocky structure; friable; few fine roots; many fine dendritic prominent red (2.5YR 4/6) masses of iron accumulation lining pores; very strongly acid; gradual wavy boundary.
Bg3--24 to 34 inches; gray (N 5/0) silty clay loam; weak coarse subangular blocky structure; friable; few fine roots; common fine prominent dendritic dark red (2.5YR 3/6) masses of iron accumulation lining pores; common medium prominent brown (7.5YR 5/4) irregular masses of iron accumulation in the matrix; very strongly acid; gradual wavy boundary.
Cg1--34 to 44 inches; gray (N 5/0) silty clay loam; massive; firm; few fine roots; common fine prominent dendritic dark red (2.5YR 3/6) masses of iron accumulation lining pores; common medium prominent brown (7.5YR 5/4) irregular masses of iron accumulation in the matrix; strongly acid; gradual wavy boundary.
Cg2--44 to 52 inches; gray (N 5/0) silty clay; massive; firm; many medium prominent reddish brown (5YR 4/4) irregular masses of iron accumulation in the matrix; common medium prominent yellowish brown (10YR 5/4) irregular masses of iron accumulation in the matrix; strongly acid; gradual wavy boundary.
Cg3--52 to 72 inches; gray (N 5/0) silty clay; massive; firm; common medium prominent dark brown (7.5YR 4/4) irregular masses of iron accumulation in the matrix; strongly acid; gradual wavy boundary.
Cg4--72 to 80 inches; gray (N 5/0) silty clay loam; massive; firm; common medium prominent very dark gray (N 3/0) irregular carbon masses in the matrix; neutral.

Range in Characteristics
Depth to bedrock: More than 60 inches
Thickness of the solum: 20 to 40 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous
Reaction: Unless limed, very strongly acid to slightly acid throughout the solum; strongly acid to neutral in the substratum

A horizon:
Hue — 10YR, 2.5Y
Value — 3 to 5
Chroma -- 1 to 4
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 2 percent

Bg horizon:
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 4 to 6
Chroma – 0 to 2
Texture of the fine earth fraction — silt loam, silty clay loam
Content of rock fragments — 0 to 5 percent

Cg horizon:
Hue — 10YR, 2.5Y, 5Y or neutral
Value — 4 to 6
Chroma – 0 to 2
Texture of the fine earth fraction — silt loam, silty clay loam, silty clay, loam
Content of rock fragments — 0 to 14 percent

Zepernick Series

Depth class: Very deep
Drainage class: Somewhat poorly drained
Landform: Flood plain
Position on the landform: Step
Parent material: Silty alluvium
Slope range: 0 to 2 percent
Associated soils: Canfield, Fitchville, Fredericktown, Kensington, Mechanicsburg

Taxonomic class: Fine-silty, mixed, superactive, acid, mesic Fluventic Endoaquepts

Typical Pedon
Zepernick silt loam, 0 to 2 percent slopes, occasionally flooded; in Columbiana County, Ohio, West Township, about 2 miles north of Bayard, 610 feet east and 2,440 feet south of the northwest corner of sec. 17, T. 16 N., R.5 W.

Ap--0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium granular structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.
A--6 to 10 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; friable; many fine roots; very strongly acid; clear wavy boundary.
Bw--10 to 15 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; firm; common fine roots; 20 percent medium distinct grayish brown (10YR 5/2) irregular iron depletions in the matrix; few fine prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix around depletions; extremely acid; clear wavy boundary.
Bg1--15 to 25 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; common medium prominent reddish brown (5YR 4/4) dendritic masses of iron accumulation lining pores; extremely acid; clear wavy boundary.
Bg2--25 to 32 inches; gray (10YR 5/1) silt loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; few medium prominent dark brown (7.5YR 4/4) irregular masses of iron accumulation in the matrix Associated to pores; extremely acid; gradual wavy boundary.
Bg3--32 to 40 inches; gray (10YR 5/1) silt loam; moderate coarse subangular blocky structure; firm; few fine roots; common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix Associated to pores; few medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; extremely acid; clear wavy boundary.
BC--40 to 50 inches; brown (10YR 5/3) silt loam; weak coarse subangular blocky structure; firm; few fine roots; 40 percent medium distinct gray (10YR 5/1) iron depletions on ped faces and in pores; common medium prominent strong brown (7.5YR 5/6) irregular masses of iron accumulation in the matrix associated to pores; few medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; very strongly acid; clear wavy boundary.
CB--50 to 65 inches; yellowish brown (10YR 5/6) silt loam; weak coarse subangular blocky structure; firm; few fine roots; 30 percent medium prominent gray (10YR 6/1) iron depletions on ped faces and in pores; common medium prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; extremely acid; clear wavy boundary.
C1--65 to 70 inches; yellowish brown (10YR 5/4) silt loam; massive; firm; 30 percent medium distinct gray (10YR 6/1) irregular iron depletions in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; extremely acid; clear wavy boundary.
C2--70 to 80 inches; strong brown (7.5YR 5/6) loam; massive; firm; 30 percent medium prominent gray (10YR 5/1) irregular iron depletions in the matrix; few fine prominent dark brown (7.5YR 3/2) irregular masses of iron-manganese accumulation in the matrix; extremely acid.

Range in Characteristics
Depth to bedrock: More than 80 inches
Thickness of the solum: 30 to 65 inches
Depth to carbonates: More than 80 inches
Kind of rock fragments: Sandstone, siltstone, shale, igneous

Reaction: Unless limed, very strongly acid to moderately acid in the surface; extremely acid or very strongly acid in the upper subsoil; extremely acid to strongly acid in the lower subsoil; extremely acid to neutral in the substratum

A horizon:
Hue — 10YR
Value — 3 or 4
Chroma -- 1 to 3
Texture of the fine earth fraction — silt loam
Content of rock fragments — 0 to 2 percent

B horizon:
Hue — 7.5YR, 10YR, 2.5Y
Value — 4 to 6
Chroma -- 1 to 6
Texture of the fine earth fraction — silt loam, silty clay loam (some pedons have strata of sandy loam, fine sandy loam, loamy fine sand or fine sand below 40 inches)
Content of rock fragments — 0 to 2 percent

C horizon:
Hue — 7.5YR, 10YR, 2.5Y or neutral
Value — 4 or 5
Chroma -- 0 to 6
Texture of the fine earth fraction — silt loam, silty clay loam, loam (some pedons have strata of sandy loam, fine sandy loam, loamy fine sand or fine sand below 40 inches)
Content of rock fragments — 0 to 45 percent

Formation of the Soils

Soils are three dimensional natural entities of landscapes capable of supporting plant growth. This section identifies the major factors of soil formation and describes how these factors influence soil formation and discusses some of the processes of soil formation. The nature of the soil at a specific site is the result of intricate interactions of soil forming factors and processes. Distinctiveness of soil horizons generally diminishes with increases in depth where at some point, the identity of soil transitions to the identity of geologic materials.

Factors of Soil Formation

Soils are the cumulative product of independent soil-forming factors acting upon both organic and mineral parent materials accumulated by geologic processes. Soil formation proceeds as progressive stages. The major factors of soil formation are parent material, climate, relief, living organisms and time. (Jenny, 1941).

Climate and living organisms, particularly vegetation, are the active forces in soil formation. They act on the parent material that has accumulated through the weathering of rocks and slowly change it to a natural body that has genetically related horizons. Their effect on the parent material is modified by relief and by the length of time the parent material has been acted upon.

The relative importance of each factor differs from place to place. In some places one factor dominates and determines most of the soil properties. Mostly, however, the interaction of all five factors determines the distinct features that form and thus characterize the soil in a given place. The factors of soil formation are so closely interrelated in their affects on the soil that few generalizations can be made regarding the effects of any one factor unless conditions are specified for the other four. Changes that occur in soils are of four basic kinds: additions, removals, transfers, and transformations.

Parent Material

The beginning material of soil is non-soil, and is called parent material. Parent material is the unconsolidated mineral or organic material in which soils form. The physical and mineralogical composition of the parent material is influenced by its origin. Parent material affects the character of the soil profile that is formed and, in extreme cases, determines it almost entirely. Generally, parent material dominantly contributes the texture of the soil.

The soils of the County formed in several kinds of parent material mostly mineral but some is organic. These are: glacial till, glacial outwash, lacustrine sediments, residuum and colluvium of sedimentary bedrocks, alluvium, and organic deposits.

Glacial till is an extensive parent material of the soils in the northern part of the County. The till was deposited by the several glaciations that occurred during the Pleistocene geologic age. Till is material that was deposited directly by glacial ice with little or no water action. The composition of the till depends on the nature of the area over which the ice passed before it was deposited. Till varies in particle-size composition and densities from place to place. Most of the till that is exposed at the surface in the county was deposited during the latest major glaciation, the Wisconsin Glaciation. The soils formed in this parent material usually have moderately fine textured subsoils. Canfield and Ravenna soils are examples of soils typically formed in Wisconsin age till.

The southern edge of the till plain is typically characterized by more rolling topography and a thinner deposit of till over the bedrock. A few soils in the county formed in thin deposits of till underlain by bedrock. Kensington and Mechanicsburg soils are examples of thinner soils underlain by bedrock.

Some parent materials have been transported and deposited by water. The size of particles that can be carried suspended in water depends on the speed and volume of the moving water. Outwash deposits, laid down by moving water and lacustrine material, or lake bottom sediments, laid down in still water are two kinds of water laid deposits.

Glacier meltwater transported, sorted and deposited outwash sand and gravel or glaciofluvial deposits of kames that remain as variably stratified deposits in the county. Some of this coarse material was later covered by finer textured loamy outwash. Chili and Conotton soils formed in glacial outwash.

Areas of lacustrine deposits consisting of loamy to clayey sediments deposited in scattered post-glacial lake basins are in the Mahoning River and Sandy Creek watersheds. Lacustrine

deposits are reflected in Fitchville and Homeworth soils.

Organic matter accumulated as sediments as trees, grasses and sedges died and settled to the bottom of shallow lakes. The saturated environment moderates temperature and limits oxygen so that decomposition is retarded. Carlisle is an organic soil formed in these partially decomposed remains of plants. They persist in areas where the water table is high so that they are protected from rapid and total decomposition.

Where the bedrock is exposed, either by glaciation, erosion, or merely never having been covered by unconsolidated material, soils are usually slower to form. Soft siltstone and shale is relatively easy to weather into parent materials. In places outcrops of shale, sandstone or limestone occur as the lowest and oldest bedrock formation exposed to the surface.

Upland soils of unglaciated areas in the southern part of the county formed in residuum and colluvium. Bedrock residuum is more extensive than colluvium. Residuum includes unconsolidated earthen materials weathered from shale, sandstone, siltstone, and limestone. Weathering bedrock to residuum is also influenced by relief, climate, organisms and time. The Berks and Gilpin soils formed in bedrock residuum.

Colluvium is accumulations of soil and parent materials that are moved to more stable downslope positions by gravity and water. It is as variable as the soil and parent materials contributing to the accumulation.

Loess is wind-deposited soil material that tends to smooth over the irregular relief of the landscape. As outwash terraces were forming, winds picked up silt particles and deposited them downwind, commonly at higher elevations. Soils in small areas on ridge tops and benches formed in as much as 40 inches of loess and in the underlying residuum. The Gavers and Keene soils formed in loess and in the underlying siltstone and shale residuum.

The alluvial sediments deposited by water is characterized by being old or recent. Alluvium is stratified according to the volume and energy of the water flow and the variety of material kinds and sizes being transported. Old alluvium was deposited in pre-glacial times by north flowing rivers or during or soon after the glaciers melted. Since the climate has changed, the old alluvial floodplains are now terraces that are no longer flooded. Time has allowed alterations to old alluvium that distinguish it from recent alluvium.

Recent alluvium is accumulated sediments of waterways that currently overflow stream channels in seasonal patterns. Deposition of alluvium is an active process in floodplains. Recent alluvium is one of the youngest parent materials in the County. The sediments are dominantly from the surface layer of the higher lying upland soils and are characteristically fertile. Orrville and Wick soils formed in alluvium.

Surface mine spoil is a mixture of partly weathered fine-earth material and fragments of shale, sandstone, siltstone, and limestone that was piled up or graded during surface mining for coal or clay shale. The Bethesda, Fairpoint, and Morristown soils formed in strip mine spoil dominated by fragments of rock and some sand, silt, and clay. (Figure 28)

Figure 28. The unconsolidated spoil of strip mine activities become the parent materials of Fairpoint and Morristown soils in Columbiana County.

Climate

Climate strongly influences the rate of chemical and physical weathering. The soil profile is subject to the greatest range of extremes in weathering influence of climate and weather at the surface of the soil which is in contact with the atmosphere. Thus the greatest influence of climate as a soil-forming factor is exhibited in the uppermost part of the soil profile. Soil formation progresses slowly where the soil is saturated, dry or cold.

Climate under which the soil material has accumulated and existed since accumulation is an active soil-forming factor. The climate in the Columbiana County is uniform enough that it has not significantly contributed to differences among the soils. The prevailing climate has been favorable to physical change and chemical weathering of parent materials and to biological activity. The climate was largely responsible for determining the kind of vegetation in the area which is dominantly hardwood trees.

The amount of moisture, the length of the growing season, and the temperatures during the growing season affect the amount of vegetation

produced. Vegetation is the main source of organic matter in the soil. These climatic factors also directly affect the activity of the microorganisms that convert organic matter into humus. The rainfall has been adequate for percolating water to leach carbonates to depths below 40 inches in soils such as Ravenna. The frequency of rainfall caused wetting and drying cycles favorable to the translocation of clay minerals and formation of soil structure, as in Chili and Rittman soils for example.

The range of temperature variations has favored both physical change and chemical weathering of parent material. Freezing and thawing contribute to the formation of soil structure. Warm temperatures in summer promote chemical reactions in the weathering of primary minerals. Rainfall and temperature have been conducive to plant growth to the extent that organic matter had accumulated in the topsoil of most soils in the County. Differences in relief contribute to slight temperature variation in local microclimates and saturated environments of organic soils moderates temperature in a unique microclimate as well.

Wind and water elements of the climate can erode and deposit exposed topsoils that result in gradual thinning of topsoils in some areas and thickening them in other areas.

More information about the climate is available under the heading “General Nature of the County”.

Living Organisms

Plants, animals, bacteria, fungi and other living organisms live on and in the soil. They exert an active influence in soil formation. Along with climate, living organisms, including plants, animals, insects, earthworms, micro-organisms and fungi, exert the strongest influence upon the uppermost part of the soil profile. The most distinctive horizonization occurs generally where these greatest extremes in temperature, moisture, plant and animal influence, and erosion and deposition and related influences, act upon the parent material. At the time the County was settled, the vegetation was predominantly hardwood forest of dominantly beach, maple, oak, hickory and ash. Swamp and low-lying areas formed under swamp forest vegetation comprising mainly of swamp white oak, pin oak, elm and cottonwood. Grassy clearings occurred on the marshy openings in the poorly drained swales.

Soils that formed in forested areas are subject to acid leaching. As a result, the subsoil is lower in exchangeable bases than the substratum. Usually these soils are generally acid and moderate or low in natural fertility. Examples are the Germano and Hazleton soils. In the swales and low-lying areas, there is a greater accumulation of organic matter where the water table is high for longer periods of time. These dark colored fertile soils include Lorain and Olmsted soils.

Small animals, insects, worms, fungi and bacteria in the soil through life activities mix and contribute organic matter to the soil. Earthworms, burrowing insects, moles, and other animals that live in the soil burrow and mix soil materials and generally make it more permeable. Microorganisms fix nitrogen from the air into a form useable by plants and help decompose plant tissue into humus, thus releasing nutrients that plants utilize. Infiltration of water is generally improved by the beneficial impacts of plant and animals on structure and in channel and pore space.

The activities of humans also affect the soil. They have an immediate effect upon both the rate and direction of soil-forming processes. They are a major influence in soil formation in recent times as technology enables larger ambitions. Through management of soils for increased production, the natural soil-water relationships that existed for thousands of years have changed in many places.

Soils in some areas have been drained, irrigated, and removed and relocated in construction activities. The application of lime, fertilizer, and other chemicals and amendments changes the chemistry of the soils and affects other properties such as structure. Soil conserving practices attempt to reestablish equilibrium under human's management practices. Conservation tillage practices contribute to improving soils under cultivation. Udorthents is an example of soils significantly altered in use and management by humans.

Relief

Relief is the collective inequalities of elevation of a land surface. It is the shape and gradient configuration of the land surface. Relief tends to modify the effects of the active factors of climate and plant and animal life.

Relief influences the effects of the active factors of climate and plant and animal life. The presence or absence of a seasonal high water table is largely determined by relief. Relief also influences both geologic and accelerated erosion rates. It may also contribute to local microclimate variations. Thus relief can largely account for the formation of different soils from the same kind of parent material.

Relief affects the natural drainage of soils. It influences the character of runoff and the depth to the seasonal high water table. Water that runs off sloping soils collects in depressions or is removed through a drainage system. Therefore, from an equal amount of rainfall, steeper soils, receive less total water and the nearly level soils, more total water. Gently sloping soils generally show the most development because they are neither saturated nor droughty. Soil formation on steep slopes tends to be inhibited by erosion and the limited amount of water that penetrates the surface.

The well drained Amanda soils are generally formed where the slope was steep enough to allow rapid runoff. The somewhat poorly drained Doles soils formed in areas where runoff was slow or medium. The very poorly drained Lorain soils formed in depressions where some plant residues accumulated because the water table is near or above the surface during extended wet periods.

The presence or absence of a seasonal high water table is largely determined by relief. Most of the more poorly drained soils, such as the poorly drained Valley soils, are on flats and in depressions. The somewhat poorly drained Wadsworth soils formed in slightly higher areas where runoff is low. Soils on hillsides generally are drier than those in adjacent depressions because water runs off the hillsides more readily and collects in the depressions. The well drained Westmoreland soils are generally formed where the relief was steep enough to allow rapid runoff.

Relief varies greatly in Columbiana County. In the northern part of the county, the soils are typically nearly level to sloping. Relief becomes more pronounced in the central part of the county where undulating topography grades to the western edge of the Allegheny Plateau. Relief is most dramatic in the southern part of the county in the unglaciated section of the Allegheny Plateau, where the difference in elevation from the ridge tops to the flood plains can be about 500 feet.

Time

Time is needed for the other soil forming factors to exert their influence in converting geologic materials into soils. Time is always required for development of distinct soil horizons. The age of a soil is indicated to some extent by the degree of profile formation. For example, soils that formed in recent alluvium, such as Orrville and Wick soils, have horizons that are not distinctly developed or expressed and are regarded as young soils.

In many places, factors other than time have been responsible for most of the differences in kind and distribution of horizons in the different soils. The length of time that parent material has been in place and affected by vegetation and climate is important to soil formation. The influence of time on soil formation is modified by relief and nature of the parent material. The length of time that a parent material has been exposed to the other four factors of soil formation is reflected in the kinds of soils that have formed. A relatively long time is required for the development of strong evidence of extensive influence of many soil-forming processes. If the parent material weathers slowly, the profile is formed slowly. If slopes are steep and soil is eroded almost as fast as it forms, no distinct horizons form.

Generally, in terms of geologic age, the soils of the glaciated part of the County have been developing for a relatively short period of time since the retreat of the Wisconsin glaciers. This accounts for the relatively shallow depth of leaching and the slightly acid or neutral reaction in many of the soils. However, the soils in the unglaciated part of the county are more deeply leached and more acid at deeper depths partially due to more time for the leaching to occur.

Soils that formed in recent alluvium, for example Lobdell and Tioga soils, have horizons that are not distinctly developed or expressed. Soils formed in strip mine spoil, namely Fairpoint and Morristown soils, also have very limited horizon development.

Processes of Soil Formation

All the factors of soil formation influence the processes of soil development. The four main processes responsible for soil development are additions, removals, transfers, and transformations. Some of these promote horizon differentiation, but others tend to impede differentiation or obliterate existing differences.

The processes of soil formation have effectively altered the uppermost parent materials of the stable landscape positions in the county into distinguishable soil profiles. In contrast, the parent material on flood plains has been only slightly modified due to frequent deposits of fresh sediment that interrupts the progression of soil forming processes. Soils on floodplains, such as Orrville and Wick soils exhibit only minor changes or minimum effects of soil formation processes.

The formation of a succession of layers, or horizons, in soils in Columbiana County is the result mainly of one or more of the following processes: the accumulation of organic matter;

the leaching of carbonates and other soluble minerals; the chemical breakdown, chiefly through hydrolysis, of primary minerals into silicate clay minerals; the translocation of silicate clays and probably some silt from upper horizons to lower ones, and the reduction and transfer of iron.

In this County the most significant addition to the soil is organic matter to the upper part. Some organic matter has accumulated in most of the soils of the county. Soils that have high water tables usually have relatively more organic matter and/or a thick, dark surface layer because the rate of accumulation exceeded that of decomposition. A surface layer that is high in organic matter content, usually has good structure and has a high base saturation. Lorain soils are an example. Where the layer of accumulation was originally thin, however, plowing and cultivating have incorporated it into other layers. Plowing and cultivation also facilitate accelerated decomposition due to increased aeration so that over time a significant reduction of organic matter is effected. Erosion is the process of transporting exposed topsoils with its organic matter offsite.

Where the layer of accumulation was originally thin, however, plowing and cultivating have incorporated it into other layers or destroyed it by accelerated decomposition due to increased aeration. Erosion may have resulted in transporting thin topsoil with its organic matter offsite. Ernest is an example of soils that have a limited content of organic matter.

Leaching of carbonates, i.e. lime, from calcareous parent materials is one of the most significant losses. It precedes many other chemical changes in the solum. In most of the glacial till in the County the content of carbonates ranges from 5 to 25 percent. Most of the light colored soils that formed in glacial till have been leached to a depth of 20 to 36 inches. The upper 24 inches of the soil profile is now acid. Carbonates in the coarse textured soils, such as Conotton and Fredericktown soils, generally have been leached to a depth of more than 36 inches. The loss of lime creates a changed chemical environment in the soil so that other minerals are progressively solubilized and subsequently leached. The most susceptible minerals are acted upon first and generally the rates of weathering decrease with time as the most stable minerals remain. Their susceptibility to weathering is slower and their removal is slower.

Transformation of mineral compounds occurs in most soils. Following the removal of carbonates, alterations to such minerals as biotite and feldspar result in changes of color within the profile. Iron in mineral compounds commonly becomes reduced and soluble in anaerobic conditions. This iron in solution is neutral in color and allows the color of more resistant minerals, mostly silica, to determine the appearance.

Gray soil generally indicates the reduced form of iron. Gleying, or the reduction and solution of ferrous iron, has taken place in the very poorly drained, poorly drained and somewhat poorly drained soils. It is caused by a recurring high water table. A gray soil color indicates conditions that dominantly favor the reduction process. Reduced iron is soluble, but it commonly has been moved only a short distance within the soils in the County. Reduced iron in solution can also reoxidize and segregate as insoluble oxides in other places of the soil profile or continue to move in solution beyond the soil profile. These segregations are observed as mottles that are often shades of yellowish brown or reddish brown. These alterations of iron are common in soils that are not well drained. Otherwise, if the water table is not seasonally high within the solum, the more stable forms of iron oxides typically lend brownish colors with higher chroma and redder hue than those in the substratum. Accumulations of iron and manganese oxides are common in the somewhat poorly drained, poorly drained and very poorly drained soils. They occur as dark brown or black stains on the faces of peds or as small concretions.

Another expression of transformation is the alteration of primary silicate minerals. These minerals are chemically weathered so that secondary minerals, mainly those of the layer-lattice silicate clays are produced. Most of the layer-lattice clays remain in place in the soil profile although some clay from the topsoil is commonly transferred to the subsoil.

An important transfer of components within the soil is the movement of clay from the surface layer to the subsurface layer. This occurs with the cycles of wetting and drying of the soil profile. The fine clay becomes preferentially suspended in percolating water moving through the surface layer of the soil profile. As the water gravitates downward to the subsoil the fine clay is carried with it. Where the water is absorbed into the subsoil it leaves behind the fine clay to accumulate on structure surfaces. The transfer of fine clay accounts for clay film coatings on the faces of peds in the subsoil of Canfield and other soils. To a lesser extent, organic matter can move downward in the profile similarly. Various sesquioxides also have been transferred from the surface layer to lower layers through this weathering process. Guernsey and Omulga soils are examples of soils with evidence of translocated clay in the subsoils as clay films on the surfaces of the peds.

References

1. American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing.

2. American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D 2487-00.

3. Collins, H.R. 1979. The Mississippian and Pennsylvanian (Carboniferous) Systems in the United States – Ohio. U.S. Geological Survey Professional Paper 1110 – E, 25 pp., illus.

4. Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

5. Crowell, K. 1978. Ground-water resources of Columbiana County. Ohio Department of Natural Resources, Division of Water, map with text.

6. Federal Register. July 13, 1994. Changes

7. Federal Register. February 24, 1995. Hydric soils of the United States.

8. Jenny, Hans. 1941. Factors of soil formation

9. Larsen, G.E. 1991. Historical development and associated problems within the Pennsylvanian nomenclature of Ohio. Ohio Jounal of Science, Vol. 91, N o. 1, pp. 69- 76, illus.

10. Lessig, H.D. 1963. The Calcutta Silt, a very early Pleistocene deposit of the upper Ohio Valley. Geological Society of America Bulletin, Vol. 74, pp. 129-140, illus.

11. Lessig, H.D. 1964. Soils and their parent materials in part of the Unglaciated Allegheny Plateau, upper Ohio Valley, as interpreted from a pipeline excavation. Ohio Journal of Science, Vol. 64, No. 4, pp. 385-400, illus.

12. Lessig, H. D., Hale, W.D., and Yohn, J. L. February 1968. Soil Survey of Columbiana County, Ohio.

13. National Research Council. 1995. Wetlands: Characteristics and boundaries.

14. Ohio Departmant of Development. Census 2000 Reports. (http://www.odod.state.oh.us/research/files/P0003/County_Prime/Columbiana.pdf)

15. Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

16. Soil Survey Staff. Keys to Soil Taxonomy, 9th Edition, 2003. U.S. Department of Agriculture, Natural Resources Conservation Service.

17. Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

18. Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

19. Stout, W. and R.E. Lamborn. 1924 . Geology of Columbiana County, Ohio. Ohio Department of Natural Resources, Division of Geological Sruvey, Bull. 28, 408 pp., illus.

20. Stout, W., K. Ver Steeg, and G.F. Lamb. 1943. Geology of water in Ohio. Ohio Department of Natural Resources, Division of Geological Survey, Bull. 44, 694 pp., illus.

21. Thornberry, W.D. 1965. Regional geomorphology of the United States. John Wiley & Sons, N.Y., N.Y., 609 pp., illus.

22. United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

23. United States Departmant of Agriculture, National Agricultural Statistics Service, 1997 Census of Agriculture, Ohio, State and County Data, Volume 1, Geogrqaphic Area Series, Part 35. http://www.nass.usda.gov/census/census97/volume1/oh-35/oh2_06.pdf

24. United States Department of Agriculture, Soil Conservation Service. 1985. Columbiana Soil and Water Conservation District resources inventory.

25. Volpi, R.W. and J.P. Szabo. 1988. Influence of the local bedrock on the clay mineralogy of Pre-Woodfordian tills of the Grand River Lobe in Columbiana County, Ohio. Ohio Journal of Science, Vol. 88, No. 1, pp. 174-180 illus.

26. White, G.W. and S.M. Totten. 1985. Glacial Geology of Columbiana County, Ohio. Ohio Department of Natural Resources, Division Geological Survey, Report of Investigations, No. 129, 25 p., illus.

27. Wysocki, D.A., P.J. Schoeneberger, and H.E. LaGarry. 2000. Geomorphology of Soil Landscapes. In: Sumner, M.E. (ed.) 2000. Handbook of Soil Science. CRC Press LLC, Baca Raton, FL. ISBN:0-8493-3136-6

Glossary

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Alpha,alpha-dipyridyl. A dye that when dissolved in 1N ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction indicates a type of redoximorphic feature.

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 in which a slope faces.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
40>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.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

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.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

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.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

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.

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 but 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.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. Low-chroma zones having a low content of iron, manganese, and clay because of the chemical reduction of iron and manganese and the removal of iron, manganese, and clay. A type of redoximorphic depletion.

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. Soil material or rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

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."

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. 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.

Cropping system. Growing crops according to a planned system of rotation and management practices.

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.

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.

Depth, soil. Generally, the thickness of the unconsolidated earthen material 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.

Diameter breast height (dbh). The diameter of a tree 4.5 feet above the soil surface on the uphill side of the tree where diameter measurements are ordinarily taken.

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.

Effluent. The aqueous discharge from a home waste treatment system.

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 soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

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. Synonym: scarp.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called normal field capacity, normal moisture capacity, or capillary capacity.

Fine textured soil. Sandy clay, silty clay, or clay.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Glacial drift. Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash. Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded 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.

Ground water. Water filling all the unblocked pores of the material below the water table.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Head slope. A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 15 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.=An organic layer of fresh and decaying plant residue.

A horizon.=The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.=The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.=The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.=The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.=Soft, consolidated bedrock beneath the soil.

R layer.=Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties 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 formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are 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. An elevated area between two drainageways that sheds water to those drainageways.

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron depletions. Low-chroma zones having a low content of iron and manganese oxide because of chemical reduction and removal, but having a clay content similar to that of the adjacent matrix. A type of redoximorphic depletion.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Drip (or trickle).=Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Sprinkler.=Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.=Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Kame terrace. A terrace landscape position consisting of stratified sand and gravel that was deposited by meltwater flow between a melting glacier and an adjacent valley wall or moraine that remained after the recession of the 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.

Landform. Any physical recognizeable form or feature on the earth's surface, having a characteristic shape and produced by natural causes. Landforms provide emperical descriptions of similar positions of the earth's surface.

Landscape. A collection of related landforms; usually the land surface which the eye can comprehend in a single view.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

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. Fine grained material, dominantly of silt-sized particles, deposited by wind.

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.

Low strength. The soil is not strong enough to support loads.

Masses. Concentrations of substances in the soil matrix that do not have a clearly defined boundary with the surrounding soil material and cannot be removed as a discrete unit. Common compounds making up masses are calcium carbonate, gypsum or other soluble salts, iron oxide, and manganese oxide. Masses consisting of iron oxide or manganese oxide generally are considered a type of redoximorphic concentration.

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. 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. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Moraine. An accumulation of earth, stones, and other debris deposited by a glacier. Some types are terminal, lateral, medial, and ground.

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.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

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. Cemented bodies lacking visible internal structure. Calcium carbonate, iron oxide, and manganese oxide are common compounds making up nodules. If formed in place, nodules of iron oxide or manganese oxide are considered types of redoximorphic concentrations.

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 plain. A landform of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, hardpan, fragipan, claypan, plowpan, and traffic pan.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A thin layer of alluvial material that mantles an erosion surface and has been transported to its present position from higher lying areas of the erosion surface.

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

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

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.

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 in 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. Nodules, concretions, soft masses, pore linings, and other features resulting from the accumulation of iron or manganese oxide. An indication of chemical reduction and oxidation resulting from saturation.

Redoximorphic depletions. Low-chroma zones from which iron and manganese oxide or a combination of iron and manganese oxide and clay has been removed. These zones are indications of the chemical reduction of iron resulting from saturation.

Redoximorphic features. Redoximorphic concentrations, redoximorphic depletions, reduced matrices, a positive reaction to alpha,alpha-dipyridyl, and other features indicating the chemical reduction and oxidation of iron and manganese compounds resulting from saturation.

Reduced matrix. A soil matrix that has low chroma in situ because of chemically reduced iron (Fe II). The chemical reduction results from nearly continuous wetness. The matrix undergoes a change in hue or chroma within 30 minutes after exposure to air as the iron is oxidized (Fe III). A type of redoximorphic feature.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Riser. The relatively short steeply sloping face of a terrace that defines the terrace above a lower terrace or base level.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

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.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

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 formed by the hardening of a clay deposit.

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 position that forms the uppermost inclined surface near the top of a hillslope. It is a transition from backslope to summit. The surface is dominantly convex in profile and erosional in origin.

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. A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent

is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Level	0 to 1 percent
Level and Nearly level	0 to 3 percent
Gently sloping	1 to 6 percent
Strongly sloping	6 to 12 percent
Moderately steep	12 to 18 percent
Steep	18 to 50 percent
Very steep	50 percent and higher

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods 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

Soil survey. (i) The systematic examination, description, classification, mapping and interpretation of soils in an area. (ii) The program of the National Cooperative Soil Survey that includes developing and implementing standards for describing, classifying, mapping, writing, and publishing information about soils of a specific area.

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are=platy (laminated), prismatic (vertical axis of aggregates longer than horizontal), columnar (prisms with rounded tops), blocky (angular or subangular), and granular. Structureless soils are either single grained (each grain by itself, as in dune sand) or massive (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

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.

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. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

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 plain. An extensive area of nearly level to undulating soils underlain by glacial till.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of the footslope.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Tread. The relatively flat surface of the terrace or floodplain that was created primarily by water deposited sediments.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Water table. The upper surface of the groundwater or that level below which the soil is saturated with water; the upper surface is the locus of points in soil water at which the hydraulic pressure is equal to atmospheric pressure.

Water table, apparent. Same as water table. Apparent water table is the reference when the water table is identified within the soil profile.

Water table, perched. The surface of a local zone of saturation held above the main body of groundwater by a less permeable layer or stratum and separated from the main body of groundwater by an unsaturated zone. Perched water table is the reference when this condition is identified within the soil profile.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the 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 MILLPORT 2 NW, OH5315)

Month	Temperature (Degrees F.) avg daily max	avg daily min	avg	2 yrs in 10 will have max temp. >than	min temp. <than	avg # of grow deg days*	Precipitation (Inches) avg	2 yrs in 10 will have less than	more than	avg # of days w/.1 or more	avg total snow fall
January	34.9	16.7	25.8	64	-18	2	2.50	1.53	3.35	7	8.1
February	39.3	18.9	29.1	68	-14	2	2.36	1.36	3.38	7	6.6
March	50.0	27.1	38.5	78	-3	31	3.09	2.06	4.07	8	5.8
April	61.4	35.4	48.4	84	14	95	3.22	1.92	4.49	8	1.4
May	71.3	45.2	58.3	88	24	275	4.12	2.49	5.60	8	0.0
June	79.6	54.0	66.8	93	34	504	3.84	2.08	5.55	7	0.0
July	83.2	58.2	70.7	95	41	641	4.17	2.69	5.32	7	0.0
August	81.8	56.4	69.1	94	37	593	3.20	1.77	4.61	6	0.0
September	74.9	49.6	62.3	91	29	373	3.25	1.78	4.72	6	0.0
October	63.5	38.5	51.0	81	19	118	2.43	1.42	3.37	6	0.0
November	50.7	30.9	40.8	74	8	29	3.15	1.72	4.26	7	2.2
December	39.4	22.2	30.8	65	-6	6	3.14	2.11	4.05	8	6.2
Yearly :											
Average	60.8	37.8	49.3	---	---	---	----	----	----	---	---
Extreme	103	-34	---	96	-20	---	----	----	----	---	---
Total	---	---	---	---	---	2668	38.46	33.37	42.81	85	30.3

Average # of days per year with at least 1 inch of snow on the ground: 11

*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 (Threshold : 50.0 deg. F)

TABLE 2.--FREEZE DATES IN SPRING AND FALL

(Recorded in the period 1971-2000 at: MILLPORT 2 NW, OH5315)

Probability	Temperature		
	24F or lower	28F or lower	32F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	May 8	May 20	June 2
2 year in 10 later than--	May 3	May 14	May 28
5 year in 10 later than--	April 23	May 3	May 18
First freezing temperature in fall:			
1 yr in 10 earlier than--	October 10	September 23	September 11
2 yr in 10 earlier than--	October 15	September 28	September 15
5 yr in 10 earlier than--	October 25	October 9	September 23

TABLE 3.--GROWING SEASON

(Recorded for the period 1971-2000 at: MILLPORT 2 NW, OH5315)

Probability	Daily Minimum Temperature		
	# days > 24F	# days > 28F	# days > 32F
9 years in 10	164	138	116
8 years in 10	172	145	121
5 years in 10	186	159	130
2 years in 10	201	173	140
1 year in 10	208	180	145

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE MAP UNITS

Map symbol	Soil name	Acres	Percent
AmF	Amanda loam, 35 to 70 percent slopes	661	0.2
BkB	Berks channery silt loam, 2 to 6 percent slopes	3,199	0.9
BkC	Berks channery silt loam, 6 to 15 percent slopes	13,062	3.8
BkD	Berks channery silt loam, 15 to 25 percent slopes	13,536	3.9
BkE	Berks channery silt loam, 25 to 40 percent slopes	19,153	5.6
BmB	Berks-Urban land complex, 2 to 6 percent slopes	103	*
BmC	Berks-Urban land complex, 6 to 15 percent slopes	532	0.2
BmD	Berks-Urban land complex, 15 to 25 percent slopes	335	*
BpF	Bethesda very channery silt loam, 25 to 70 percent slopes	814	0.2
BsC2	Bogart loam, 6 to 12 percent slopes, eroded	88	*
BtA	Bogart silt loam, 0 to 2 percent slopes	138	*
BtB	Bogart silt loam, 2 to 6 percent slopes	1,664	0.5
BtC	Bogart silt loam, 6 to 12 percent slopes	185	*
CaA	Calcutta silt loam, 0 to 3 percent slopes	324	*
CcB	Canfield silt loam, 2 to 6 percent slopes	35,167	10.3
CcC	Canfield silt loam, 6 to 12 percent slopes	43,345	12.6
CcD	Canfield silt loam, 12 to 20 percent slopes	6,337	1.8
CcE	Canfield silt loam, 20 to 35 percent slopes	2,150	0.6
CeA	Carlisle muck, 0 to 1 percent slopes	301	*
CfD2	Chili loam, 12 to 20 percent slopes, eroded	165	*
ChA	Chili silt loam, 0 to 2 percent slopes	170	*
ChB	Chili silt loam, 2 to 6 percent slopes	2,648	0.8
ChC	Chili silt loam, 6 to 12 percent slopes	2,168	0.6
CmB	Conotton gravelly loam, 2 to 6 percent slopes	431	0.1
CmC	Conotton gravelly loam, 6 to 12 percent slopes	201	*
CoB	Coshocton silt loam, 2 to 6 percent slopes	935	0.3
CoC	Coshocton silt loam, 6 to 15 percent slopes	9,256	2.7
CoD	Coshocton silt loam, 15 to 25 percent slopes	324	*
DAM	Dam	23	*
DgA	Doles silt loam, 0 to 3 percent slopes	255	*
ErC	Ernest silt loam, 6 to 15 percent slopes	254	*
ErD	Ernest silt loam, 15 to 25 percent slopes	270	*
FbB	Fairpoint very channery silt loam, 0 to 8 percent slopes	1,410	0.4
FbD	Fairpoint very channery silt loam, 8 to 25 percent slopes	4,184	1.2
FbF	Fairpoint very channery silt loam, 25 to 70 percent slopes	13,722	4.0
FcB	Fairpoint silty clay loam, 0 to 8 percent slopes	950	0.3
FcD	Fairpoint silty clay loam, 8 to 25 percent slopes	2,897	0.8
FdA	Fitchville silt loam, 0 to 2 percent slopes	998	0.3
FdB	Fitchville silt loam, 2 to 6 percent slopes	869	0.3
FeA	Fluvaquents, silty, 0 to 1 percent slopes, frequently flooded	787	0.2
FnC2	Fredericktown gravelly loam, 6 to 15 percent slopes, eroded	1,310	0.4
FnD2	Fredericktown gravelly loam, 15 to 25 percent slopes, eroded	277	*
FoB	Fredericktown silt loam, 2 to 6 percent slopes	1,142	0.3
FrA	Frenchtown silt loam, 0 to 2 percent slopes	404	0.1
GaB	Gavers silt loam, 2 to 6 percent slopes	1,291	0.4
GeC	Germano fine sandy loam, 6 to 15 percent slopes	98	*
GeD	Germano fine sandy loam, 15 to 25 percent slopes	61	*
GnB	Gilpin silt loam, 2 to 6 percent slopes	3,565	1.0
GnC	Gilpin silt loam, 6 to 15 percent slopes	6,769	2.0
GnD	Gilpin silt loam, 15 to 25 percent slopes	5,551	1.6
GoC	Gilpin-Coshocton silt loams, 6 to 15 percent slopes	6,847	2.0
GoD	Gilpin-Coshocton silt loams, 15 to 25 percent slopes	1,235	0.4
GpC	Gilpin-Coshocton-Urban land complex, 6 to 15 percent slopes	376	0.1
GrB	Glenford silt loam, 2 to 6 percent slopes	384	0.1
GrC	Glenford silt loam, 6 to 12 percent slopes	474	0.1
GuC	Guernsey silt loam, 6 to 15 percent slopes	393	0.1
GuC2	Guernsey silt loam, 6 to 15 percent slopes, eroded	252	*
GuD	Guernsey silt loam, 15 to 25 percent slopes	79	*
HeB	Hazleton channery loam, 2 to 6 percent slopes	198	*
HeC	Hazleton channery loam, 6 to 15 percent slopes	1,766	0.5
HeD	Hazleton channery loam, 15 to 25 percent slopes	1,651	0.5
HeE	Hazleton channery loam, 25 to 40 percent slopes	2,869	0.8
HfF	Hazleton-Rock outcrop complex, 40 to 70 percent slopes	2,171	0.6
HgF	Hazleton-Westmoreland channery loams, 40 to 70 percent slopes	8,439	2.5
HkA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	391	0.1
HlB	Homewood silt loam, 2 to 6 percent slopes	526	0.2
HmA	Homeworth loam, 0 to 2 percent slopes	272	*
HmB	Homeworth loam, 2 to 6 percent slopes	93	

See footnote at end of table.

Table 4.--Acreage and Proportionate Extent of the Map Units--Continued

Map symbol	Soil name	Acres	Percent
HoA	Homeworth silt loam, 0 to 2 percent slopes	440	0.1
HoB	Homeworth silt loam, 2 to 6 percent slopes	404	0.1
JwA	Jimtown silt loam, 0 to 2 percent slopes	176	*
JwB	Jimtown silt loam, 2 to 6 percent slopes	1,217	0.4
KeB	Keene silt loam, 2 to 6 percent slopes	2,714	0.8
KnB	Kensington silt loam, 2 to 6 percent slopes	80	*
KnC	Kensington silt loam, 6 to 15 percent slopes	6,541	1.9
KnD	Kensington silt loam, 15 to 25 percent slopes	3,679	1.1
LbA	Lobdell silt loam, 0 to 2 percent slopes, occasionally flooded	1,181	0.3
LnA	Lorain silt loam, 0 to 2 percent slopes	731	0.2
McB	Mechanicsburg silt loam, 2 to 6 percent slopes	1,933	0.6
McC	Mechanicsburg silt loam, 6 to 15 percent slopes	1,418	0.4
MnB	Morristown silty clay loam, 0 to 8 percent slopes	483	0.1
MnD	Morristown silty clay loam, 8 to 25 percent slopes	721	0.2
MoB	Morristown channery silty clay loam, 0 to 8 percent slopes	163	*
MoD	Morristown channery silty clay loam, 8 to 25 percent slopes	539	0.2
OdA	Olmsted and Valley soils, 0 to 2 percent slopes	414	0.1
OmB	Omulga silt loam, 2 to 6 percent slopes	1,088	0.3
OmC	Omulga silt loam, 6 to 12 percent slopes	1,032	0.3
OrA	Orrville silt loam, 0 to 2 percent slopes, occasionally flooded	4,155	1.2
Pg	Pits, gravel	426	0.1
RaB	Rainsboro silt loam, 2 to 6 percent slopes	919	0.3
RaC2	Rainsboro silt loam, 6 to 12 percent slopes, eroded	582	0.2
RbC	Rainsboro silt loam, 6 to 12 percent slopes, stony	88	*
ReA	Ravenna silt loam, 0 to 2 percent slopes	1,700	0.5
ReB	Ravenna silt loam, 2 to 6 percent slopes	8,451	2.5
RhD	Richland silt loam, 15 to 25 percent slopes, stony	272	*
RhE	Richland silt loam, 25 to 40 percent slopes, stony	204	*
RsB	Rittman silt loam, 2 to 6 percent slopes	4,436	1.3
RsC	Rittman silt loam, 6 to 12 percent slopes	3,226	0.9
RsD2	Rittman silt loam, 12 to 20 percent slopes, eroded	1,021	0.3
TeB	Teegarden silt loam, 2 to 6 percent slopes	784	0.2
TeC	Teegarden silt loam, 6 to 15 percent slopes	5,101	1.5
TeC2	Teegarden silt loam, 6 to 15 percent slopes, eroded	3,837	1.1
ToA	Tioga loam, 0 to 2 percent slopes, occasionally flooded	3,626	1.1
Ua	Udorthents, loamy, 2 to 25 percent slopes	668	0.2
Ub	Udorthents, refuse substratum, 2 to 25 percent slopes	331	*
Uc	Udorthents-Pits complex, 0 to 70 percent slopes	1,668	0.5
UkC2	Upshur-Berks complex, 6 to 15 percent slopes, eroded	478	0.1
UkD2	Upshur-Berks complex, 15 to 25 percent slopes, eroded	602	0.2
UkE2	Upshur-Berks complex, 25 to 40 percent slopes, eroded	735	0.2
Ur	Urban land, 0 to 15 percent slopes	1,297	0.4
UtB	Urban land-Canfield complex, 2 to 6 percent slopes	2,692	0.8
UtC	Urban land-Canfield complex, 6 to 12 percent slopes	1,113	0.3
UvB	Urban land-Chili complex, 2 to 6 percent slopes	2,039	0.6
VaA	Valley silt loam, 0 to 2 percent slopes	1,274	0.4
VbA	Valley silty clay loam, 0 to 2 percent slopes	92	*
VcA	Valley-Lorain silt loams, 0 to 2 percent slopes	2,383	0.7
VnB	Vandergrift silt loam, 2 to 6 percent slopes	963	0.3
VnC	Vandergrift silt loam, 6 to 15 percent slopes	1,781	0.5
W	Water	2,967	0.9
WaA	Wadsworth silt loam, 0 to 2 percent slopes	249	*
WaB	Wadsworth silt loam, 2 to 6 percent slopes	1,348	0.4
WkE	Westmoreland-Berks complex, 25 to 40 percent slopes	3,530	1.0
WkF	Westmoreland-Berks complex, 40 to 70 percent slopes	6,858	2.0
WmC	Westmoreland-Coshocton silt loams, 8 to 15 percent slopes	1,293	0.4
WmD	Westmoreland-Coshocton silt loams, 15 to 25 percent slopes	86	*
WoA	Wick silt loam, 0 to 2 percent slopes, frequently flooded	3,932	1.1
ZeA	Zepernick silt loam, 0 to 2 percent slopes, occasionally flooded	7,971	2.3
	Total	343,027	100.0

* Less than 0.1 percent.

TABLE 5.--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.)
(See text on page 213 for additional information)

Map symbol	Soil name
BkB	Berks channery silt loam, 2 to 6 percent slopes
BtA	Bogart silt loam, 0 to 2 percent slopes
BtB	Bogart silt loam, 2 to 6 percent slopes
CaA	Calcutta silt loam, 0 to 3 percent slopes (Prime farmland if drained)
CcB	Canfield silt loam, 2 to 6 percent slopes
ChA	Chili silt loam, 0 to 2 percent slopes
ChB	Chili silt loam, 2 to 6 percent slopes
CmB	Conotton gravelly loam, 2 to 6 percent slopes
CoB	Coshocton silt loam, 2 to 6 percent slopes
DgA	Doles silt loam, 0 to 3 percent slopes (Prime farmland if drained)
FdA	Fitchville silt loam, 0 to 2 percent slopes (Prime farmland if drained)
FdB	Fitchville silt loam, 2 to 6 percent slopes (Prime farmland if drained)
FoB	Fredericktown silt loam, 2 to 6 percent slopes
FrA	Frenchtown silt loam, 0 to 2 percent slopes (Prime farmland if drained)
GaB	Gavers silt loam, 2 to 6 percent slopes (Prime farmland if drained)
GnB	Gilpin silt loam, 2 to 6 percent slopes
GrB	Glenford silt loam, 2 to 6 percent slopes
HeB	Hazleton channery loam, 2 to 6 percent slopes
HkA	Holly silt loam, 0 to 2 percent slopes, frequently flooded (Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season)
HlB	Homewood silt loam, 2 to 6 percent slopes
HmA	Homeworth loam, 0 to 2 percent slopes (Prime farmland if drained)
HmB	Homeworth loam, 2 to 6 percent slopes (Prime farmland if drained)
HoA	Homeworth silt loam, 0 to 2 percent slopes (Prime farmland if drained)
HoB	Homeworth silt loam, 2 to 6 percent slopes (Prime farmland if drained)
JwA	Jimtown silt loam, 0 to 2 percent slopes (Prime farmland if drained)
JwB	Jimtown silt loam, 2 to 6 percent slopes (Prime farmland if drained)
KeB	Keene silt loam, 2 to 6 percent slopes
KnB	Kensington silt loam, 2 to 6 percent slopes
LbA	Lobdell silt loam, 0 to 2 percent slopes, occasionally flooded
LnA	Lorain silt loam, 0 to 2 percent slopes (Prime farmland if drained)
McB	Mechanicsburg silt loam, 2 to 6 percent slopes
OmB	Omulga silt loam, 2 to 6 percent slopes
OrA	Orrville silt loam, 0 to 2 percent slopes, occasionally flooded (Prime farmland if drained)
RaB	Rainsboro silt loam, 2 to 6 percent slopes
ReA	Ravenna silt loam, 0 to 2 percent slopes (Prime farmland if drained)
ReB	Ravenna silt loam, 2 to 6 percent slopes (Prime farmland if drained)
RsB	Rittman silt loam, 2 to 6 percent slopes
TeB	Teegarden silt loam, 2 to 6 percent slopes
ToA	Tioga loam, 0 to 2 percent slopes, occasionally flooded
VnB	Vandergrift silt loam, 2 to 6 percent slopes
WaA	Wadsworth silt loam, 0 to 2 percent slopes (Prime farmland if drained)
WaB	Wadsworth silt loam, 2 to 6 percent slopes (Prime farmland if drained)
WoA	Wick silt loam, 0 to 2 percent slopes, frequently flooded (Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season)
ZeA	Zepernick silt loam, 0 to 2 percent slopes, occasionally flooded (Prime farmland if drained)

TABLE 6.--HYDRIC SOILS LIST

(See text on page 215 for additional information)

Map symbol	Soil name
CeA	Carlisle muck, 0 to 1 percent slopes
FeA	Fluvaquents, silty, 0 to 1 percent slopes, frequently flooded
FrA	Frenchtown silt loam, 0 to 2 percent slopes
HkA	Holly silt loam, 0 to 2 percent slopes, frequently flooded
LnA	Lorain silt loam, 0 to 2 percent slopes
OdA	Olmsted and Valley soils, 0 to 2 percent slopes
VaA	Valley silt loam, 0 to 2 percent slopes
VbA	Valley silty clay loam, 0 to 2 percent slopes
VcA	Valley-Lorain silt loams, 0 to 2 percent slopes
WoA	Wick silt loam, 0 to 2 percent slopes, frequently flooded

TABLE 7.--NON-HYDRIC MAPUNITS WITH HYDRIC COMPONENTS

(See text on page 215 for additional information)

Map symbol and map unit name	Hydric Component	Landform
DgA:		
Doles silt loam, 0 to 3 percent slopes		
	Wetter soil	depression
FdA:		
Fitchville silt loam, 0 to 2 percent slopes		
	Wetter soils	depression
FdB:		
Fitchville silt loam, 2 to 6 percent slopes		
	Wetter soils	drainageway
GaB:		
Gavers silt loam, 2 to 6 percent slopes		
	Wetter soils	depression
HmA:		
Homeworth loam, 0 to 2 percent slopes		
	Wetter soil	depression
HmB:		
Homeworth loam, 2 to 6 percent slopes		
	Wetter soil	drainageway
HoA:		
Homeworth silt loam, 0 to 2 percent slopes		
	Wetter soil	depression
HoB:		
Homeworth silt loam, 2 to 6 percent slopes		
	Wetter soil	drainageway
JwA:		
Jimtown silt loam, 0 to 2 percent slopes		
	Valley	depression
JwB:		
Jimtown silt loam, 2 to 6 percent slopes		
	Valley	drainageway
LbA:		
Lobdell silt loam, 0 to 2 percent slopes, occasionally flooded		
	Holly	flood plain
OrA:		
Orrville silt loam, 0 to 2 percent slopes, occasionally flooded		
	Holly	flood plain
ReA:		
Ravenna silt loam, 0 to 2 percent slopes		
	Wetter soils	drainageway
ReB:		
Ravenna silt loam, 2 to 6 percent slopes		
	Wetter soils	drainageway
ToA:		
Tioga loam, 0 to 2 percent slopes, occasionally flooded		
	Poorly drained soils	oxbow

Table 7.--Non-hydric Mapunits With Hydric Components—Continued

Map symbol and map unit name	Hydric Component	Landform
WaA: Wadsworth silt loam, 0 to 2 percent slopes	Wetter soils	depression
WaB: Wadsworth silt loam, 2 to 6 percent slopes	Wetter soils	drainageway
ZeA: Zepernick silt loam, 0 to 2 percent slopes, occasionally flooded	Wick	flood plain

TABLE 8.--CROPLAND LIMITATIONS AND HAZARDS

(See text on page 219 for a description of the limitations and hazards listed in this table. Only soils suitable for cultivated crops are listed in this table.)

Soil name and map symbol	Cropland limitations and hazards
AmF:	
Amanda	Excessive slope, easily eroded, erosion hazard,
BkB:	
Berks	Depth to bedrock, high potential for ground-water pollution, erosion hazard, limited available water capacity,
BkC:	
Berks	Depth to bedrock, high potential for ground-water pollution, erosion hazard, limited available water capacity,
BkD:	
Berks	Excessive slope, depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, limited available water capacity,
BkE:	
Berks	Excessive slope, depth to bedrock, high potential for ground-water pollution, excessive acidity, very high organic matter content, erosion hazard, limited available water capacity,
BmB:	
Berks	Not rated
Urban land	Not rated
BmC:	
Berks	Not rated
Urban land	Not rated
BmD:	
Berks	Not rated
Urban land	Not rated
BpF:	
Bethesda	Excessive slope, gravelly surface, poor tilth, easily eroded, erosion hazard, limited available water capacity,
BsC2:	
Bogart	Part of the surface layer removed by erosion, seasonal high water table, high potential for ground-water pollution, fair tilth, easily eroded, erosion hazard,
BtA:	
Bogart	Seasonal high water table, surface compaction, high potential for ground-water pollution, surface crusting,
BtB:	
Bogart	Seasonal high water table, surface compaction, high potential for ground-water pollution, surface crusting, erosion hazard,
BtC:	
Bogart	Seasonal high water table, surface compaction, high potential for ground-water pollution, surface crusting, easily eroded, erosion hazard,
CaA:	
Calcutta	Seasonal high water table, excessive acidity, frost action, very high organic matter content, limited available water capacity, root restrictive layer,
CcB:	
Canfield	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard, limited available water capacity, root restrictive layer,
CcC:	
Canfield	Seasonal high water table, surface compaction, frost action, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,

TABLE 8.--Cropland Limitations and Hazards--Continued

Soil name and map symbol	Cropland limitations and hazards
CcD:	
Canfield	Seasonal high water table, surface compaction, frost action, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
CcE:	
Canfield	Excessive slope, seasonal high water table, surface compaction, frost action, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
CeA:	
Carlisle	Ponded for extended periods, moderate potential for ground-water pollution, frost action, subsidence of the muck, very high organic matter content, wind erosion,
CfD2:	
Chili	Part of the surface layer removed by erosion, high potential for ground-water pollution, fair tilth, easily eroded, erosion hazard,
ChA:	
Chili	Surface compaction, high potential for ground-water pollution, surface crusting,
ChB:	
Chili	Surface compaction, high potential for ground-water pollution, surface crusting, erosion hazard,
ChC:	
Chili	Surface compaction, high potential for ground-water pollution, surface crusting, easily eroded, erosion hazard,
CmB:	
Conotton	High potential for ground-water pollution, erosion hazard, limited available water capacity,
CmC:	
Conotton	High potential for ground-water pollution, easily eroded, erosion hazard, limited available water capacity,
CoB:	
Coshocton	Surface compaction, frost action, surface crusting, erosion hazard,
CoC:	
Coshocton	Surface compaction, frost action, surface crusting, easily eroded, erosion hazard,
CoD:	
Coshocton	Excessive slope, surface compaction, frost action, surface crusting, easily eroded, erosion hazard,
DAM:	
Dam	Not rated
DgA:	
Doles	Seasonal high water table, surface compaction, frost action, surface crusting, limited available water capacity, root restrictive layer,
ErC:	
Ernest	Seasonal high water table, surface compaction, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
ErD:	
Ernest	Excessive slope, seasonal high water table, surface compaction, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
FbB:	
Fairpoint	Gravelly surface, poor tilth, erosion hazard, limited available water capacity,
FbD:	
Fairpoint	Excessive slope, gravelly surface, poor tilth, easily eroded, erosion hazard, limited available water capacity,
FbF:	
Fairpoint	Excessive slope, gravelly surface, poor tilth, easily eroded, erosion hazard, limited available water capacity,
FcB:	
Fairpoint	Surface compaction, fair tilth, surface crusting, erosion hazard, limited available water capacity, clodding,

TABLE 8.--Cropland Limitations and Hazards--Continued

Soil name and map symbol	Cropland limitations and hazards
FcD:	
Fairpoint	Excessive slope, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, clodding,
FdA:	
Fitchville	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting,
FdB:	
Fitchville	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, erosion hazard,
FeA:	
Fluvaquents	Frequent flooding, ponded for extended periods, moderate potential for ground-water pollution, poor tilth,
FnC2:	
Fredericktown	Part of the surface layer removed by erosion, moderate potential for ground-water pollution, easily eroded, erosion hazard, limited available water capacity,
FnD2:	
Fredericktown	Part of the surface layer removed by erosion, excessive slope, moderate potential for ground-water pollution, easily eroded, erosion hazard,
FoB:	
Fredericktown	Surface compaction, moderate potential for ground-water pollution, surface crusting, erosion hazard,
FrA:	
Frenchtown	Ponding, surface compaction, frost action, surface crusting, limited available water capacity, restricted permeability, root restrictive layer,
GaB:	
Gavers	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, erosion hazard,
GeC:	
Germano	Depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, wind erosion, limited available water capacity,
GeD:	
Germano	Excessive slope, depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, wind erosion, limited available water capacity,
GnB:	
Gilpin	Surface compaction, depth to bedrock, high potential for ground-water pollution, surface crusting, erosion hazard, limited available water capacity,
GnC:	
Gilpin	Surface compaction, depth to bedrock, high potential for ground-water pollution, surface crusting, easily eroded, erosion hazard, limited available water capacity,
GnD:	
Gilpin	Excessive slope, surface compaction, depth to bedrock, high potential for ground-water pollution, surface crusting, easily eroded, erosion hazard, limited available water capacity,
GoC:	
Gilpin	Surface compaction, depth to bedrock, high potential for ground-water pollution, surface crusting, easily eroded, erosion hazard, limited available water capacity,
Coshocton	Surface compaction, frost action, surface crusting, easily eroded, erosion hazard,
GoD:	
Gilpin	Excessive slope, surface compaction, depth to bedrock, high potential for ground-water pollution, surface crusting, easily eroded, erosion hazard, limited available water capacity,
Coshocton	Excessive slope, surface compaction, frost action, surface crusting, easily eroded, erosion hazard,

TABLE 8.--Cropland Limitations and Hazards--Continued

Soil name and map symbol	Cropland limitations and hazards
GpC:	
Gilpin	Not rated
Coshocton	Not rated
Urban land	Not rated
GrB:	
Glenford	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, erosion hazard,
GrC:	
Glenford	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, easily eroded, erosion hazard,
GuC:	
Guernsey	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, easily eroded, erosion hazard, high clay content,
GuC2:	
Guernsey	Part of the surface layer removed by erosion, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, high clay content,
GuD:	
Guernsey	Excessive slope, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, easily eroded, erosion hazard, high clay content,
HeB:	
Hazleton	Erosion hazard, limited available water capacity,
HeC:	
Hazleton	Erosion hazard, limited available water capacity,
HeD:	
Hazleton	Excessive slope, easily eroded, erosion hazard, limited available water capacity,
HeE:	
Hazleton	Excessive slope, easily eroded, erosion hazard, limited available water capacity,
HfF:	
Hazleton	Excessive slope, easily eroded, erosion hazard, limited available water capacity,
Rock outcrop	Not rated
HgF:	
Hazleton	Excessive slope, excessive acidity, very high organic matter content, erosion hazard,
Westmoreland	Excessive slope, easily eroded, erosion hazard,
HkA:	
Holly	Frequent flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action,
HlB:	
Homewood	Surface compaction, surface crusting, erosion hazard, limited available water capacity, root restrictive layer,
HmA:	
Homeworth	Seasonal high water table, frost action,
HmB:	
Homeworth	Seasonal high water table, frost action, erosion hazard, restricted permeability, high clay content,

TABLE 8.--Cropland Limitations and Hazards--Continued

Soil name and map symbol	Cropland limitations and hazards
HoA:	
Homeworth	Seasonal high water table, surface compaction, frost action, surface crusting, high clay content,
HoB:	
Homeworth	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard, restricted permeability, high clay content,
JwA:	
Jimtown	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting,
JwB:	
Jimtown	Seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, erosion hazard,
KeB:	
Keene	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard,
KnB:	
Kensington	Surface compaction, surface crusting, erosion hazard,
KnC:	
Kensington	Surface compaction, moderate potential for ground-water pollution, surface crusting, easily eroded, erosion hazard,
KnD:	
Kensington	Excessive slope, surface compaction, moderate potential for ground-water pollution, surface crusting, easily eroded, erosion hazard,
LbA:	
Lobdell	Occasional flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting,
LnA:	
Lorain	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, restricted permeability, high clay content,
McB:	
Mechanicsburg	Surface compaction, moderate potential for ground-water pollution, surface crusting, erosion hazard,
McC:	
Mechanicsburg	Surface compaction, moderate potential for ground-water pollution, surface crusting, easily eroded, erosion hazard,
MnB:	
Morristown	Surface compaction, fair tilth, surface crusting, erosion hazard,
MnD:	
Morristown	Excessive slope, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity,
MoB:	
Morristown	Poor tilth, erosion hazard, limited available water capacity,
MoD:	
Morristown	Excessive slope, poor tilth, easily eroded, erosion hazard, limited available water capacity,
OdA:	
Olmsted	Ponding, surface compaction, moderate potential for ground-water pollution, frost action,
Valley	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, restricted permeability, high clay content,
OmB:	
Omulga	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard, root restrictive layer,
OmC:	
Omulga	Seasonal high water table, surface compaction, frost action, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,

TABLE 8.--Cropland Limitations and Hazards--Continued

Soil name and map symbol	Cropland limitations and hazards
OrA:	
Orrville	Occasional flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting,
Pg:	
Pits	Not rated
RaB:	
Rainsboro	Surface compaction, frost action, surface crusting, erosion hazard, limited available water capacity, root restrictive layer,
RaC2:	
Rainsboro	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
RbC:	
Rainsboro	Stony surface, surface compaction, frost action, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
ReA:	
Ravenna	Seasonal high water table, surface compaction, frost action, surface crusting, limited available water capacity, root restrictive layer,
ReB:	
Ravenna	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard, limited available water capacity, root restrictive layer,
RhD:	
Richland	Excessive slope, stony surface, surface compaction, moderate potential for ground-water pollution, surface crusting, easily eroded, erosion hazard,
RhE:	
Richland	Excessive slope, stony surface, surface compaction, moderate potential for ground-water pollution, surface crusting, easily eroded, erosion hazard,
RsB:	
Rittman	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard, limited available water capacity, root restrictive layer,
RsC:	
Rittman	Seasonal high water table, surface compaction, frost action, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
RsD2:	
Rittman	Part of the surface layer removed by erosion, seasonal high water table, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
TeB:	
Teegarden	Seasonal high water table, surface compaction, surface crusting, erosion hazard, limited available water capacity, root restrictive layer,
TeC:	
Teegarden	Seasonal high water table, surface compaction, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
TeC2:	
Teegarden	Part of the surface layer removed by erosion, seasonal high water table, surface compaction, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, root restrictive layer,
ToA:	
Tioga	Occasional flooding,
Ua:	
Udorthents	Excessive slope, excessive acidity, easily eroded, erosion hazard, limited available water capacity,

TABLE 8.--Cropland Limitations and Hazards--Continued

Soil name and map symbol	Cropland limitations and hazards
Ub:	
Udorthents	Excessive slope, excessive acidity, frost action, easily eroded, erosion hazard, limited available water capacity,
Uc:	
Udorthents	Excessive slope, excessive acidity, easily eroded, erosion hazard, limited available water capacity,
Pits	Not rated
UkC2:	
Upshur	Part of the surface layer removed by erosion, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, high clay content,
Berks	Part of the surface layer removed by erosion, depth to bedrock, high potential for ground-water pollution, erosion hazard, limited available water capacity,
UkD2:	
Upshur	Part of the surface layer removed by erosion, excessive slope, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, high clay content,
Berks	Part of the surface layer removed by erosion, excessive slope, depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, limited available water capacity,
UkE2:	
Upshur	Part of the surface layer removed by erosion, excessive slope, surface compaction, frost action, fair tilth, surface crusting, easily eroded, erosion hazard, limited available water capacity, high clay content,
Berks	Part of the surface layer removed by erosion, excessive slope, depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, limited available water capacity,
Ur:	
Urban land	Not rated
UtB:	
Urban land	Not rated
Canfield	Not rated
UtC:	
Urban land	Not rated
Canfield	Not rated
UvB:	
Urban land	Not rated
Chili	Not rated
VaA:	
Valley	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, restricted permeability, high clay content,
VbA:	
Valley	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, fair tilth, restricted permeability, high clay content,
VcA:	
Valley	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, restricted permeability, high clay content,
Lorain	Ponding, surface compaction, moderate potential for ground-water pollution, frost action, restricted permeability, high clay content,
VnB:	
Vandergrift	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard, high clay content,
VnC:	
Vandergrift	Seasonal high water table, surface compaction, frost action, surface crusting, easily eroded, erosion hazard, high clay content,
W:	
Water	Not rated

TABLE 8.--Cropland Limitations and Hazards--Continued

Soil name and map symbol	Cropland limitations and hazards
WaA:	
Wadsworth	Seasonal high water table, surface compaction, frost action, surface crusting, limited available water capacity, restricted permeability, root restrictive layer,
WaB:	
Wadsworth	Seasonal high water table, surface compaction, frost action, surface crusting, erosion hazard, limited available water capacity, restricted permeability, root restrictive layer,
WkE:	
Westmoreland	Excessive slope, surface compaction, surface crusting, easily eroded, erosion hazard,
Berks	Excessive slope, depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, limited available water capacity,
WkF:	
Westmoreland	Excessive slope, excessive acidity, very high organic matter content, erosion hazard,
Berks	Excessive slope, depth to bedrock, high potential for ground-water pollution, easily eroded, erosion hazard, limited available water capacity,
WmC:	
Westmoreland	Surface compaction, surface crusting, easily eroded, erosion hazard,
Coshocton	Surface compaction, frost action, surface crusting, easily eroded, erosion hazard,
WmD:	
Westmoreland	Excessive slope, surface compaction, surface crusting, easily eroded, erosion hazard,
Coshocton	Excessive slope, surface compaction, frost action, surface crusting, easily eroded, erosion hazard,
WoA:	
Wick	Frequent flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, surface crusting, high clay content,
ZeA:	
Zepernick	Occasional flooding, seasonal high water table, surface compaction, moderate potential for ground-water pollution, frost action, limited available water capacity,

TABLE 9.--CROP YIELD INDEX

(Estimated yields for soils with a yield index of 100 are: corn - 125 bushels; soybeans – 50 bushels; wheat - 54 bushels; oats - 80 bushels; and Orchardgrass-alfalfa hay - 5.0 tons. Refer to Crop Yield Index section on page 223 in the text for more information on how this table was developed, and instructions on converting yield index numbers to estimated yields. Absence of a yield index indicates that the soil is not suited to the crop or the crop is generally not grown on the soil.)

Map symbol and soil name	Corn	Soybeans	Wheat	Oats	Orchardgrass -alfalfa hay
AmF:	---	---	---	---	---
Amanda					
BkB:	71	50	65	75	60
Berks					
BkC:	67	50	67	69	56
Berks					
BkD:	---	---	---	---	50
Berks					
BkE:	---	---	---	---	---
Berks					
BmB:	---	---	---	---	---
Berks					
Urban Land					
BmC:	---	---	---	---	---
Berks					
Urban Land					
BmD:	---	---	---	---	---
Berks					
Urban Land					
BpF:	---	---	---	---	---
Bethesda					
BsC2:	78	70	67	75	80
Bogart					
BtA:	98	84	100	95	90
Bogart					
BtB:	96	82	100	90	90
Bogart					
BtC:	85	74	72	72	86
Bogart					
CaA:	85	80	81	94	68
Calcutta					
CcB:	94	70	87	96	100
Canfield					
CcC:	86	66	83	96	96
Canfield					
CcD:	---	---	---	---	90
Canfield					
CcE:	---	---	---	---	---
Canfield					
CeA:	---	---	---	---	---
Carlisle					
CfD2:	---	---	---	---	64
Chili					
ChA:	88	80	74	100	92
Chili					
ChB:	87	76	70	98	92
Chili					
ChC:	78	72	59	90	84
Chili					

TABLE 9.--Crop Yield Index--Continued

Map symbol and soil name	Corn	Soybeans	Wheat	Oats	Orchardgrass -alfalfa hay
CmB: Conotton	60	44	52	65	58
CmC: Conotton	52	44	46	60	56
CoB: Coshocton	91	70	78	79	90
CoC: Coshocton	86	50	72	66	80
CoD: Coshocton	---	---	---	---	70
DAM: Dam	---	---	---	---	---
DgA: Doles	81	76	83	---	80
ErC: Ernest	76	50	65	75	60
ErD: Ernest	---	---	---	---	50
FbB: Fairpoint	42	---	---	---	50
FbD: Fairpoint	---	---	---	---	50
FbF: Fairpoint	---	---	---	---	---
FcB: Fairpoint	---	---	46	56	50
FcD: Fairpoint	---	---	---	---	40
FdA: Fitchville	90	74	72	90	86
FdB: Fitchville	88	66	69	85	86
FeA: Fluvaquents	---	---	---	---	---
FnC2: Fredericktown	80	68	67	90	84
FnD2: Fredericktown	---	---	---	---	64
FoB: Fredericktown	92	76	74	98	92
FrA: Frenchtown	74	60	63	88	50
GaB: Gavers	80	74	63	78	86
GeC: Germano	76	56	83	69	86
GeD: Germano	---	---	---	---	76
GnB: Gilpin	81	50	80	81	60
GnC: Gilpin	76	40	72	75	60
GnD: Gilpin	---	---	---	---	50
GoC: Gilpin Coshocton	86	44	72	75	62
GoD: Gilpin Coshocton	---	---	---	---	54

TABLE 9.--Crop Yield Index--Continued

Map symbol and soil name	Corn	Soybeans	Wheat	Oats	Orchardgrass -alfalfa hay
GpC:	---	---	---	---	---
Gilpin					
Coshocton					
Urban Land					
GrB:	100	100	100	100	100
Glenford					
GrC:	91	60	85	94	94
Glenford					
GuC:	80	70	80	75	90
Guernsey					
GuC2:	72	50	74	72	86
Guernsey					
GuD:	---	---	---	---	80
Guernsey					
HeB:	94	---	83	94	70
Hazleton					
HeC:	87	---	74	88	68
Hazleton					
HeD:	---	---	---	---	64
Hazleton					
HeE:	---	---	---	---	---
Hazleton					
HfF:	---	---	---	---	---
Hazleton					
Rock Outcrop					
HgF:	---	---	---	---	---
Hazleton					
Westmoreland					
HkA:	74	64	65	71	76
Holly					
HlB:	97	70	83	95	96
Homewood					
HmA:	88	76	85	94	84
Homeworth					
HmB:	86	70	81	88	80
Homeworth					
HoA:	88	76	85	94	84
Homeworth					
HoB:	86	70	81	88	80
Homeworth					
JwA:	86	54	74	88	80
Jimtown					
JwB:	85	50	70	84	80
Jimtown					
KeB:	88	60	74	81	100
Keene					
KnB:	94	70	87	96	100
Kensington					
KnC:	86	66	83	96	96
Kensington					
KnD:	---	---	---	---	90
Kensington					
LbA:	99	80	78	100	90
Lobdell					
LnA:	94	74	100	98	74
Lorain					
McB:	94	70	83	94	100
Mechanicsburg					
McC:	86	60	78	88	90
Mechanicsburg					

TABLE 9.--Crop Yield Index--Continued

Map symbol and soil name	Corn	Soybeans	Wheat	Oats	Orchardgrass -alfalfa hay
MnB: Morristown	---	---	56	62	60
MnD: Morristown	---	---	---	---	50
MoB: Morristown	47	---	---	---	---
MoD: Morristown	---	---	---	---	---
OdA: Olmsted Valley	90	60	48	85	82
OmB: Omulga	88	74	83	81	96
OmC: Omulga	80	66	70	75	90
OrA: Orrville	89	64	87	94	90
Pg: Pits	---	---	---	---	---
RaB: Rainsboro	90	74	87	81	68
RaC2: Rainsboro	79	60	69	75	60
RbC: Rainsboro	76	60	69	75	60
ReA: Ravenna	81	56	65	88	72
ReB: Ravenna	78	56	61	88	70
RhD: Richland	---	---	---	---	60
RhE: Richland	---	---	---	---	---
RsB: Rittman	86	92	87	92	88
RsC: Rittman	78	70	70	88	90
RsD2: Rittman	---	---	---	---	62
TeB: Teegarden	96	70	83	96	100
TeC: Teegarden	88	60	78	91	90
TeC2: Teegarden	86	58	74	88	90
ToA: Tioga	92	72	91	94	76
Ua: Udorthents	---	---	---	---	---
Ub: Udorthents	---	---	---	---	---
Uc: Udorthents Pits	---	---	---	---	---
UkC2: Upshur Berks	68	40	57	75	70
UkD2: Upshur Berks	---	---	---	---	50

TABLE 9.--Crop Yield Index--Continued

Map symbol and soil name	Corn	Soybeans	Wheat	Oats	Orchardgrass -alfalfa hay
UkE2:	---	---	---	---	---
Upshur					
Berks					
Ur:	---	---	---	---	---
Urban Land					
UtB:	---	---	---	---	---
Urban Land					
Canfield					
UtC:	---	---	---	---	---
Urban Land					
Canfield					
UvB:	---	---	---	---	---
Urban Land					
Chili					
VaA:	74	58	56	75	60
Valley					
VbA:	71	44	56	75	50
Valley					
VcA:	77	44	56	75	60
Valley					
Lorain					
VnB:	72	70	74	81	60
Vandergrift					
VnC:	64	60	65	75	56
Vandergrift					
W:	---	---	---	---	---
Water					
WaA:	87	78	78	84	80
Wadsworth					
WaB:	83	74	70	81	78
Wadsworth					
WkE:	---	---	---	---	---
Westmoreland					
Berks					
WkF:	---	---	---	---	---
Westmoreland					
Berks					
WmC:	86	60	74	76	90
Westmoreland					
Coshocton					
WmD:	---	---	---	---	90
Westmoreland					
Coshocton					
WoA:	65	56	52	62	68
Wick					
ZeA:	78	58	57	75	74
Zepernick					

TABLE 10.--ACREAGE BY CAPABILITY CLASSES AND SUBCLASSES

(See text on page 223 for additional information.)

Capability class	Capability subclass	Acreage
Unclassified	---	56,810
1	---	4,319
2	e	66,671
	w	14,006
	s	153
3	e	96,813
	w	4,915
	s	1,678
4	e	31,236
	s	4,636
5	w	4,597
6	e	24,501
	s	4,015
7	e	28,677

TABLE 11.--WOODLAND 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 potential limitation. See text on page 228 for further explanation of ratings in this table.)

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmF:						
Amanda	Very severe		Low		Severe	
	Water erosion	1.00			Low strength	1.00
BkB:						
Berks	Slight		Low		Severe	
	Water erosion	0.05			Low strength	1.00
BkC:						
Berks	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
BkD:						
Berks	Moderate		Low		Severe	
	Water erosion	0.34			Low strength	1.00
BkE:						
Berks	Moderate		Low		Severe	
	Water erosion	0.56			Low strength	1.00
BmB:						
Berks	Slight		Low		Severe	
	Water erosion	0.05			Low strength	1.00
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Moderate		Low		Severe	
	Water erosion	0.34			Low strength	1.00
Urban Land	Not rated		Not rated		Not rated	
BpF:						
Bethesda	Severe		Low		Moderate	
	Water erosion	0.92			Low strength	0.50
BsC2:						
Bogart	Slight		High		Severe	
	Water erosion	0.13	Wetness	1.00	Low strength	1.00
BtA:						
Bogart	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
BtB:						
Bogart	Slight		High		Severe	
	Water erosion	0.05	Wetness	1.00	Low strength	1.00
BtC:						
Bogart	Slight		Low		Severe	
	Water erosion	0.13			Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CaA:						
Calcutta	Slight		High		Severe	
	Water erosion	0.04	Wetness	1.00	Low strength	1.00
			Soil reaction	0.50		
CcB:						
Canfield	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
CcC:						
Canfield	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
CcD:						
Canfield	Moderate		High		Severe	
	Water erosion	0.39	Wetness	1.00	Low strength	1.00
CcE:						
Canfield	Severe		Low		Severe	
	Water erosion	0.67			Low strength	1.00
CeA:						
Carlisle	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
CfD2:						
Chili	Moderate		Low		Severe	
	Water erosion	0.27			Low strength	1.00
ChA:						
Chili	Slight		Low		Severe	
	Water erosion	0.01			Low strength	1.00
ChB:						
Chili	Slight		Low		Severe	
	Water erosion	0.05			Low strength	1.00
ChC:						
Chili	Slight		Low		Severe	
	Water erosion	0.13			Low strength	1.00
CmB:						
Conotton	Slight		Low		Severe	
	Water erosion	0.05			Low strength	1.00
CmC:						
Conotton	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
CoB:						
Coshocton	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
CoC:						
Coshocton	Moderate		Low		Severe	
	Water erosion	0.26			Low strength	1.00
CoD:						
Coshocton	Moderate		Low		Severe	
	Water erosion	0.49			Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Slight		High		Severe	
	Water erosion	0.04	Wetness	1.00	Low strength	1.00
ErC:						
Ernest	Moderate		High		Severe	
	Water erosion	0.26	Wetness	1.00	Low strength	1.00
ErD:						
Ernest	Moderate		Low		Severe	
	Water erosion	0.49			Low strength	1.00
FbB:						
Fairpoint	Slight		Low		Moderate	
	Water erosion	0.05			Low strength	0.50
FbD:						
Fairpoint	Moderate		Low		Moderate	
	Water erosion	0.28			Low strength	0.50
FbF:						
Fairpoint	Severe		Low		Moderate	
	Water erosion	0.92			Low strength	0.50
FcB:						
Fairpoint	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
FcD:						
Fairpoint	Moderate		Low		Severe	
	Water erosion	0.40			Low strength	1.00
FdA:						
Fitchville	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
FdB:						
Fitchville	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
FeA:						
Fluvaquents	Slight		High		Moderate	
	Water erosion	0.01	Wetness	1.00	Depth to saturated zone	0.50
			Soil reaction	1.00		
FnC2:						
Fredericktown	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
FnD2:						
Fredericktown	Moderate		Low		Severe	
	Water erosion	0.34			Low strength	1.00
FoB:						
Fredericktown	Slight		Low		Severe	
	Water erosion	0.05			Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Erosion hazard: Value	Seedling mortality: Rating class and limiting features	Seedling mortality: Value	Soil rutting hazard: Rating class and limiting features	Soil rutting hazard: Value
FrA:						
Frenchtown	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
GaB:						
Gavers	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
GeC:						
Germano	Slight		Low		Moderate	
	Water erosion	0.16			Low strength	0.50
GeD:						
Germano	Moderate		Low		Moderate	
	Water erosion	0.34			Low strength	0.50
GnB:						
Gilpin	Slight		Low		Severe	
	Water erosion	0.05			Low strength	1.00
GnC:						
Gilpin	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
GnD:						
Gilpin	Moderate		Low		Severe	
	Water erosion	0.34			Low strength	1.00
GoC:						
Gilpin	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
Coshocton	Moderate		Low		Severe	
	Water erosion	0.26			Low strength	1.00
GoD:						
Gilpin	Moderate		Low		Severe	
	Water erosion	0.34			Low strength	1.00
Coshocton	Moderate		Low		Severe	
	Water erosion	0.49			Low strength	1.00
GpC:						
Gilpin	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
Coshocton	Moderate		Low		Severe	
	Water erosion	0.26			Low strength	1.00
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
GrC:						
Glenford	Moderate		High		Severe	
	Water erosion	0.26	Wetness	1.00	Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GuC:						
Guernsey	Moderate		High		Severe	
	Water erosion	0.26	Wetness	1.00	Low strength	1.00
GuC2:						
Guernsey	Moderate		High		Severe	
	Water erosion	0.26	Wetness	1.00	Low strength	1.00
GuD:						
Guernsey	Moderate		High		Severe	
	Water erosion	0.49	Wetness	1.00	Low strength	1.00
HeB:						
Hazleton	Slight		Low		Severe	
	Water erosion	0.05			Low strength	1.00
HeC:						
Hazleton	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
HeD:						
Hazleton	Moderate		Low		Severe	
	Water erosion	0.34			Low strength	1.00
HeE:						
Hazleton	Moderate		Low		Severe	
	Water erosion	0.56			Low strength	1.00
HfF:						
Hazleton	Very severe		Low		Severe	
	Water erosion	1.00			Low strength	1.00
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Very severe		Low		Severe	
	Water erosion	1.00			Low strength	1.00
Westmoreland	Very severe		Low		Severe	
	Water erosion	1.00			Low strength	1.00
HkA:						
Holly	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
HlB:						
Homewood	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
HmA:						
Homeworth	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
HmB:						
Homeworth	Slight		High		Severe	
	Water erosion	0.05	Wetness	1.00	Low strength	1.00
HoA:						
Homeworth	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Erosion hazard: Value	Seedling mortality: Rating class and limiting features	Seedling mortality: Value	Soil rutting hazard: Rating class and limiting features	Soil rutting hazard: Value
HoB:						
Homeworth	Slight		High		Severe	
	Water erosion	0.05	Wetness	1.00	Low strength	1.00
JwA:						
Jimtown	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
JwB:						
Jimtown	Slight		High		Severe	
	Water erosion	0.05	Wetness	1.00	Low strength	1.00
KeB:						
Keene	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
KnB:						
Kensington	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
KnC:						
Kensington	Moderate		Low		Severe	
	Water erosion	0.26			Low strength	1.00
KnD:						
Kensington	Moderate		Low		Severe	
	Water erosion	0.49			Low strength	1.00
LbA:						
Lobdell	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
LnA:						
Lorain	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
McB:						
Mechanicsburg	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
McC:						
Mechanicsburg	Moderate		Low		Severe	
	Water erosion	0.26			Low strength	1.00
MnB:						
Morristown	Slight		Moderate		Severe	
	Water erosion	0.10	Soil reaction	0.50	Low strength	1.00
MnD:						
Morristown	Moderate		Moderate		Severe	
	Water erosion	0.40	Soil reaction	0.50	Low strength	1.00
MoB:						
Morristown	Slight		Moderate		Severe	
	Water erosion	0.05	Soil reaction	0.50	Low strength	1.00
MoD:						
Morristown	Moderate		Moderate		Severe	
	Water erosion	0.28	Soil reaction	0.50	Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OdA:						
Olmsted	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Valley	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
OmB:						
Omulga	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
OmC:						
Omulga	Moderate		Low		Severe	
	Water erosion	0.26			Low strength	1.00
OrA:						
Orrville	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00
RaC2:						
Rainsboro	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
RbC:						
Rainsboro	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
ReA:						
Ravenna	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
ReB:						
Ravenna	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
RhD:						
Richland	Moderate		Low		Severe	
	Water erosion	0.49			Low strength	1.00
RhE:						
Richland	Severe		Low		Severe	
	Water erosion	0.79			Low strength	1.00
RsB:						
Rittman	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
RsC:						
Rittman	Slight		High		Severe	
	Water erosion	0.22	Wetness	1.00	Low strength	1.00
RsD2:						
Rittman	Moderate		High		Severe	
	Water erosion	0.39	Wetness	1.00	Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard: Rating class and limiting features	Erosion hazard: Value	Seedling mortality: Rating class and limiting features	Seedling mortality: Value	Soil rutting hazard: Rating class and limiting features	Soil rutting hazard: Value
TeB:						
Teegarden	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
TeC:						
Teegarden	Moderate		High		Severe	
	Water erosion	0.26	Wetness	1.00	Low strength	1.00
TeC2:						
Teegarden	Moderate		High		Severe	
	Water erosion	0.26	Wetness	1.00	Low strength	1.00
ToA:						
Tioga	Slight		Low		Severe	
	Water erosion	0.02			Low strength	1.00
Ua:						
Udorthents	Moderate		High		Severe	
	Water erosion	0.22	Soil reaction	1.00	Low strength	1.00
Ub:						
Udorthents	Moderate		High		Severe	
	Water erosion	0.22	Soil reaction	1.00	Low strength	1.00
Uc:						
Udorthents	Moderate		High		Moderate	
	Water erosion	0.60	Soil reaction	1.00	Low strength	0.50
Pits	Not rated		Not rated		Not rated	
UkC2:						
Upshur	Moderate		Low		Severe	
	Water erosion	0.26			Low strength	1.00
Berks	Slight		Low		Severe	
	Water erosion	0.16			Low strength	1.00
UkD2:						
Upshur	Moderate		Low		Severe	
	Water erosion	0.49			Low strength	1.00
Berks	Moderate		Low		Severe	
	Water erosion	0.34			Low strength	1.00
UkE2:						
Upshur	Severe		Low		Severe	
	Water erosion	0.79			Low strength	1.00
Berks	Moderate		Low		Severe	
	Water erosion	0.56			Low strength	1.00
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Slight		Low		Severe	
	Water erosion	0.10			Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Slight		Low		Severe	
	Water erosion	0.22			Low strength	1.00
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Slight		Low		Severe	
	Water erosion	0.05			Low strength	1.00
VaA:						
Valley	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
VbA:						
Valley	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
VcA:						
Valley	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
Lorain	Slight		High		Severe	
	Water erosion	0.01	Wetness	1.00	Low strength	1.00
VnB:						
Vandergrift	Slight		High		Severe	
	Water erosion	0.05	Wetness	1.00	Low strength	1.00
VnC:						
Vandergrift	Slight		High		Severe	
	Water erosion	0.16	Wetness	1.00	Low strength	1.00
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Slight		High		Severe	
	Water erosion	0.02	Wetness	1.00	Low strength	1.00
WaB:						
Wadsworth	Slight		High		Severe	
	Water erosion	0.10	Wetness	1.00	Low strength	1.00
WkE:						
Westmoreland	Severe		Low		Severe	
	Water erosion	0.79			Low strength	1.00
Berks	Moderate		Low		Severe	
	Water erosion	0.56			Low strength	1.00
WkF:						
Westmoreland	Very severe		Low		Severe	
	Water erosion	1.00			Low strength	1.00
Berks	Very severe		Low		Severe	
	Water erosion	1.00			Low strength	1.00

Table 11.--Woodland Management--Continued

Map symbol and soil name	Erosion hazard		Seedling mortality		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WmC:						
Westmoreland	Moderate Water erosion	0.28	Low		Severe Low strength	1.00
Coshocton	Moderate Water erosion	0.28	Low		Severe Low strength	1.00
WmD:						
Westmoreland	Moderate Water erosion	0.49	Low		Severe Low strength	1.00
Coshocton	Moderate Water erosion	0.49	Low		Severe Low strength	1.00
WoA:						
Wick	Slight Water erosion	0.01	High Wetness	1.00	Severe Low strength	1.00
ZeA:						
Zepernick	Slight Water erosion	0.01	High Wetness Soil reaction	1.00 0.50	Severe Low strength	1.00

TABLE 12.--WOODLAND PRODUCTIVITY

(See text on page 227 for additional information.)

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
AmF:				
Amanda	black cherry	---	0	Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	87	72	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	---	0	
BkB:				
Berks	Virginia pine	70	57	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
BkC:				
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
BkD:				
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
BkE:				
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
BmB:				
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
Urban Land	---	---	---	---

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
BmC:				
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
Urban Land	---	---	---	---
BmD:				
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
Urban Land	---	---	---	---
BpF:				
Bethesda	black cherry	---	0	black locust, eastern white pine, northern red oak, red pine, tuliptree, white ash
	black locust	75	0	
	northern red oak	70	57	
	red maple	---	0	
	tuliptree	90	86	
	white ash	---	0	
BsC2:				
Bogart	black cherry	---	---	American sycamore, black walnut, eastern white pine, green ash, northern red oak, red pine, sweetgum, tuliptree, white ash, white oak
	black walnut	---	---	
	northern red oak	85	72	
	sugar maple	---	---	
	tuliptree	---	---	
	white ash	---	---	
	white oak	85	72	
BtA:				
Bogart	black cherry	---	---	American sycamore, black walnut, eastern white pine, green ash, northern red oak, red pine, sweetgum, tuliptree, white ash, white oak
	black walnut	---	---	
	northern red oak	85	72	
	sugar maple	---	---	
	tuliptree	---	---	
	white ash	---	---	
	white oak	85	72	
BtB:				
Bogart	black cherry	---	---	American sycamore, black walnut, eastern white pine, green ash, northern red oak, red pine, sweetgum, tuliptree, white ash, white oak
	black walnut	---	---	
	northern red oak	85	72	
	sugar maple	---	---	
	tuliptree	---	---	
	white ash	---	---	
	white oak	85	72	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
BtC:				
Bogart	black cherry	---	---	American sycamore,
	black walnut	---	---	black walnut,
	northern red oak	85	72	eastern white
	sugar maple	---	---	pine, green ash,
	tuliptree	---	---	northern red oak,
	white ash	---	---	red pine,
	white oak	85	72	sweetgum,
				tuliptree, white
				ash, white oak
CaA:				
Calcutta	black cherry	---	0	American sycamore,
	black walnut	---	0	black locust, bur
	northern red oak	80	57	oak, green ash,
	sugar maple	---	0	northern red oak,
	tuliptree	---	0	sugar maple,
	white ash	---	0	tuliptree, white
	white oak	---	0	ash, white oak
CcB:				
Canfield	American beech	---	0	American sycamore,
	American sycamore	---	0	Norway spruce,
	northern red oak	87	72	black cherry,
	slippery elm	---	0	black locust, bur
	sugar maple	70	43	oak, eastern white
	white ash	83	86	pine, green ash,
	white oak	---	0	northern red oak,
				sugar maple,
				tuliptree, white
				ash, white oak
CcC:				
Canfield	American beech	---	0	American sycamore,
	American sycamore	---	0	Norway spruce,
	northern red oak	87	72	black cherry,
	slippery elm	---	0	black locust, bur
	sugar maple	70	43	oak, eastern white
	white ash	83	86	pine, green ash,
	white oak	---	0	northern red oak,
				sugar maple,
				tuliptree, white
				ash, white oak
CcD:				
Canfield	American beech	---	0	American sycamore,
	American sycamore	---	0	Norway spruce,
	northern red oak	87	72	black cherry,
	slippery elm	---	0	black locust, bur
	sugar maple	70	43	oak, eastern white
	white ash	83	86	pine, green ash,
	white oak	---	0	northern red oak,
				sugar maple,
				tuliptree, white
				ash, white oak
CcE:				
Canfield	American beech	---	0	American sycamore,
	American sycamore	---	0	Norway spruce,
	northern red oak	87	72	black cherry,
	slippery elm	---	0	black locust, bur
	sugar maple	70	43	oak, eastern white
	white ash	83	86	pine, green ash,
	white oak	---	0	northern red oak,
				sugar maple,
				tuliptree, white
				ash, white oak

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
CeA:				
Carlisle	black cherry	---	0	black willow, green ash, red maple
	eastern cottonwood	80	86	
	green ash	---	0	
	red maple	---	0	
	swamp white oak	---	0	
	white ash	---	0	
CfD2:				
Chili	black cherry	---	0	Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	85	72	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	80	57	
ChA:				
Chili	black cherry	---	0	Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	85	72	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	80	57	
ChB:				
Chili	black cherry	---	0	Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	85	72	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	80	57	
ChC:				
Chili	black cherry	---	0	Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	85	72	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	80	57	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
CmB:				
Conotton	black cherry	---	0	European larch,
	black oak	---	0	Norway spruce,
	northern red oak	70	57	black cherry,
	red maple	---	0	black oak, black
	scarlet oak	---	0	walnut, bur oak,
	tuliptree	---	0	eastern white
	white oak	70	57	pine, northern red
				oak, red pine,
				tuliptree, white
				ash, white oak
CmC:				
Conotton	black cherry	---	0	European larch,
	black oak	---	0	Norway spruce,
	northern red oak	70	57	black cherry,
	red maple	---	0	black oak, black
	scarlet oak	---	0	walnut, bur oak,
	tuliptree	---	0	eastern white
	white oak	70	57	pine, northern red
				oak, red pine,
				tuliptree, white
				ash, white oak
CoB:				
Coshocton	black cherry	---	0	American sycamore,
	northern red oak	80	57	Norway spruce,
	sugar maple	---	0	black cherry,
	tuliptree	90	86	black locust, bur
	white ash	---	0	oak, eastern white
	white oak	75	57	pine, green ash,
				northern red oak,
				red pine, sugar
				maple, tuliptree,
				white ash, white
				oak
CoC:				
Coshocton	black cherry	---	0	American sycamore,
	northern red oak	80	57	Norway spruce,
	sugar maple	---	0	black cherry,
	tuliptree	90	86	black locust, bur
	white ash	---	0	oak, eastern white
	white oak	75	57	pine, green ash,
				northern red oak,
				red pine, sugar
				maple, tuliptree,
				white ash, white
				oak
CoD:				
Coshocton	black cherry	---	0	American sycamore,
	northern red oak	80	57	Norway spruce,
	sugar maple	---	0	black cherry,
	tuliptree	90	86	black locust, bur
	white ash	---	0	oak, eastern white
	white oak	75	57	pine, green ash,
				northern red oak,
				red pine, sugar
				maple, tuliptree,
				white ash, white
				oak

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
DAM:				
Dam	---	---	---	---
DgA:				
Doles	black cherry	---	0	American sycamore, black locust, bur oak, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	75	57	
ErC:				
Ernest	black cherry	80	57	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	black walnut	---	0	
	northern red oak	80	57	
	sugar maple	80	57	
	white ash	80	57	
	yellow-poplar	89	86	
ErD:				
Ernest	black cherry	80	57	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	black walnut	---	0	
	northern red oak	80	57	
	sugar maple	80	57	
	white ash	80	57	
	yellow-poplar	89	86	
FbB:				
Fairpoint	---	---	---	Norway spruce, Scotch pine, black locust, blue spruce, eastern white pine, tuliptree, white spruce
FbD:				
Fairpoint	---	---	---	Norway spruce, Scotch pine, black locust, blue spruce, eastern white pine, tuliptree, white spruce
FbF:				
Fairpoint	---	---	---	Norway spruce, Scotch pine, black locust, blue spruce, eastern white pine, tuliptree, white spruce

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
FcB:				
Fairpoint	---	---	---	Norway spruce, Scotch pine, black locust, blue spruce, eastern white pine, tuliptree, white spruce
FcD:				
Fairpoint	---	---	---	Norway spruce, Scotch pine, black locust, blue spruce, eastern white pine, tuliptree, white spruce
FdA:				
Fitchville	northern red oak	80	57	Norway spruce, Scotch pine, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak, white spruce
	pin oak	90	72	
	sugar maple	---	0	
	tuliptree	---	0	
FdB:				
Fitchville	northern red oak	80	57	Norway spruce, Scotch pine, black cherry, black locust, eastern white pine, green ash, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak, white spruce
	pin oak	90	72	
	sugar maple	---	0	
	tuliptree	---	0	
FeA:				
Fluvaquents	---	---	---	---
FnC2:				
Fredericktown	black cherry	---	0	Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	80	62	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	75	60	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
FnD2:				
Fredericktown	black cherry	---	0	Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	80	62	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	75	60	
FoB:				
Fredericktown	black cherry	---	0	Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	80	62	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	75	60	
FrA:				
Frenchtown	black cherry	88	57	American sycamore, Austrian pine, Norway spruce, baldcypress, eastern cottonwood, green ash, pin oak, red maple, silver maple, swamp white oak, sweetgum
	eastern cottonwood	---	0	
	northern red oak	89	72	
	pin oak	92	72	
	sugar maple	83	57	
	tuliptree	93	100	
	white ash	85	86	
GaB:				
Gavers	pin oak	85	72	American sycamore, Norway spruce, Scotch pine, baldcypress, black cherry, black locust, black walnut, blue spruce, eastern cottonwood, eastern white pine, green ash, northern red oak, red maple, red pine, sweetgum, tuliptree, white ash, white oak, white spruce
	tuliptree	85	86	
	white oak	75	57	
	northern red oak	75	57	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
GeC:				
Germano	black cherry	---	0	Norway spruce,
	black walnut	---	0	black cherry,
	northern red oak	80	57	black locust,
	sugar maple	---	0	black walnut, bur
	tuliptree	90	86	oak, eastern white
	white ash	---	0	pine, northern red
	white oak	---	0	oak, red pine,
				tuliptree, white
				ash, white oak
GeD:				
Germano	black cherry	---	0	Norway spruce,
	black walnut	---	0	black cherry,
	northern red oak	80	57	black locust,
	sugar maple	---	0	black walnut, bur
	tuliptree	90	86	oak, eastern white
	white ash	---	0	pine, northern red
	white oak	---	0	oak, red pine,
				tuliptree, white
				ash, white oak
GnB:				
Gilpin	northern red oak	80	57	Norway spruce,
	tuliptree	95	100	Scotch pine, black
				cherry, black
				locust, black
				walnut, eastern
				white pine,
				northern red oak,
				red pine,
				tuliptree, white
				ash, white oak,
				white spruce
GnC:				
Gilpin	northern red oak	80	57	Norway spruce,
	tuliptree	95	100	Scotch pine, black
				cherry, black
				locust, black
				walnut, eastern
				white pine,
				northern red oak,
				red pine,
				tuliptree, white
				ash, white oak,
				white spruce
GnD:				
Gilpin	northern red oak	70	57	Norway spruce,
	tuliptree	90	86	Scotch pine, black
				cherry, black
				locust, black
				walnut, eastern
				white pine,
				northern red oak,
				red pine,
				tuliptree, white
				ash, white oak,
				white spruce

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
GoC:				
Gilpin	northern red oak	80	57	Norway spruce, Scotch pine, black cherry, black locust, black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	tuliptree	95	100	
Coshocton	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	90	86	
	white ash	---	0	
	white oak	75	57	
GoD:				
Gilpin	northern red oak	80	57	Norway spruce, Scotch pine, black cherry, black locust, black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	tuliptree	95	100	
Coshocton	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	90	86	
	white ash	---	0	
	white oak	75	57	
GpC:				
Gilpin	northern red oak	80	57	Norway spruce, Scotch pine, black cherry, black locust, black walnut, eastern white pine, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	tuliptree	95	100	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
Coshocton	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	90	86	
	white ash	---	0	
	white oak	75	57	
Urban Land	---	---	---	---
GrB:				
Glenford	black cherry	---	0	American sycamore, Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	northern red oak	86	72	
	sugar maple	---	0	
	tuliptree	96	100	
	white ash	---	0	
	white oak	---	0	
GrC:				
Glenford	black cherry	---	0	American sycamore, Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	northern red oak	86	72	
	sugar maple	---	0	
	tuliptree	96	100	
	white ash	---	0	
	white oak	---	0	
GuC:				
Guernsey	black cherry	---	0	American sycamore, Austrian pine, eastern cottonwood, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	northern red oak	78	57	
	sugar maple	---	0	
	tuliptree	95	100	
	white ash	---	0	
	white oak	---	0	
GuC2:				
Guernsey	black cherry	---	0	American sycamore, Austrian pine, eastern cottonwood, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	northern red oak	78	57	
	sugar maple	---	0	
	tuliptree	95	100	
	white ash	---	0	
	white oak	---	0	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
GuD:				
Guernsey	black cherry	---	0	American sycamore,
	northern red oak	70	57	Austrian pine,
	sugar maple	---	0	eastern
	tuliptree	---	0	cottonwood,
	white ash	---	0	eastern white
	white oak	65	43	pine, northern red
				oak, red pine,
				tuliptree, white
				ash, white oak
HeB:				
Hazleton	northern red oak	70	57	Austrian pine,
	tuliptree	80	72	Norway spruce,
				black cherry,
				black locust,
				black walnut,
				eastern white
				pine, northern red
				oak, tuliptree,
				white ash, white
				oak
HeC:				
Hazleton	northern red oak	70	57	Austrian pine,
	tuliptree	80	72	Norway spruce,
				black cherry,
				black locust,
				black walnut,
				eastern white
				pine, northern red
				oak, tuliptree,
				white ash, white
				oak
HeD:				
Hazleton	northern red oak	70	57	Austrian pine,
	tuliptree	80	72	Norway spruce,
				black cherry,
				black locust,
				black walnut,
				eastern white
				pine, northern red
				oak, tuliptree,
				white ash, white
				oak
HeE:				
Hazleton	northern red oak	70	57	Austrian pine,
	tuliptree	80	72	Norway spruce,
				black cherry,
				black locust,
				black walnut,
				eastern white
				pine, northern red
				oak, tuliptree,
				white ash, white
				oak

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
HfF:				
Hazleton	northern red oak	70	57	Austrian pine, Norway spruce, black cherry, black locust, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak
	tuliptree	80	72	
Rock Outcrop	---	---	---	---
HgF:				
Hazleton	northern red oak	70	57	Austrian pine, Norway spruce, black cherry, black locust, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak
	tuliptree	80	72	
Westmoreland	eastern white pine	75	143	black locust, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak
	northern red oak	81	57	
	tuliptree	90	86	
HkA:				
Holly	black cherry	---	0	American sycamore, Austrian pine, Norway spruce, baldcypress, bur oak, eastern arborvitae, eastern cottonwood, green ash, pin oak, red maple, river birch, silver maple, swamp white oak, sweetgum, white ash
	eastern cottonwood	---	0	
	green ash	---	0	
	pin oak	90	72	
	red maple	---	0	
	swamp white oak	---	0	
HlB:				
Homewood	American beech	---	0	American sycamore, Norway spruce, black cherry, black locust, black oak, eastern white pine, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak
	American sycamore	---	0	
	northern red oak	87	72	
	slippery elm	---	0	
	sugar maple	70	43	
	white ash	83	86	
	white oak	---	0	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
HmA:				
Homeworth	northern red oak	80	62	American sycamore, black cherry, black locust, eastern cottonwood, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	white oak	75	62	
	pin oak	90	72	
	sugar maple	---	0	
	white ash	---	0	
	tuliptree	---	0	
	black cherry	---	0	
HmB:				
Homeworth	northern red oak	80	62	American sycamore, black cherry, black locust, eastern cottonwood, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	white oak	75	62	
	pin oak	90	72	
	sugar maple	---	0	
	white ash	---	0	
	tuliptree	---	0	
	black cherry	---	0	
HoA:				
Homeworth	northern red oak	80	62	American sycamore, black cherry, black locust, eastern cottonwood, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	white oak	75	62	
	pin oak	90	72	
	sugar maple	---	0	
	white ash	---	0	
	tuliptree	---	0	
	black cherry	---	0	
HoB:				
Homeworth	northern red oak	80	62	American sycamore, black cherry, black locust, eastern cottonwood, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak
	white oak	75	62	
	pin oak	90	72	
	sugar maple	---	0	
	white ash	---	0	
	tuliptree	---	0	
	black cherry	---	0	
JwA:				
Jimtown	black cherry	---	0	American sycamore, Scotch pine, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak
	northern red oak	85	72	
	tuliptree	---	0	
	white ash	---	0	
	white oak	---	0	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
JwB:				
Jimtown	black cherry	---	0	American sycamore,
	northern red oak	85	72	Scotch pine, black
	sugar maple	---	0	cherry, black
	tuliptree	---	0	locust, bur oak,
	white ash	---	0	eastern white
	white oak	---	0	pine, green ash,
				northern red oak,
				red pine, sugar
				maple, tuliptree,
				white ash, white
				oak
KeB:				
Keene	black cherry	---	0	American sycamore,
	black walnut	---	0	Norway spruce,
	northern red oak	80	57	black cherry,
	sugar maple	---	0	black locust, bur
	tuliptree	95	100	oak, eastern white
	white ash	---	0	pine, green ash,
	white oak	75	57	northern red oak,
				sugar maple,
				tuliptree, white
				ash, white oak
KnB:				
Kensington	black cherry	---	0	American sycamore,
	black walnut	---	0	black walnut,
	northern red oak	80	57	green ash,
	sugar maple	---	0	northern red oak,
	tuliptree	---	0	red maple, silver
	white ash	---	0	maple, sweetgum,
	white oak	75	57	tuliptree, white
				ash, white oak
KnC:				
Kensington	black cherry	---	0	American sycamore,
	black walnut	---	0	black walnut,
	northern red oak	80	57	green ash,
	sugar maple	---	0	northern red oak,
	tuliptree	---	0	red maple, silver
	white ash	---	0	maple, sweetgum,
	white oak	75	57	tuliptree, white
				ash, white oak
KnD:				
Kensington	black cherry	---	0	American sycamore,
	black walnut	---	0	black walnut,
	northern red oak	80	57	green ash,
	sugar maple	---	0	northern red oak,
	tuliptree	---	0	red maple, silver
	white ash	---	0	maple, sweetgum,
	white oak	75	57	tuliptree, white
				ash, white oak
LbA:				
Lobdell	black cherry	---	0	black cherry, black
	northern red oak	87	72	walnut, bur oak,
	sugar maple	---	0	green ash,
	tuliptree	96	100	northern red oak,
	white ash	---	0	tuliptree, white
	white oak	---	0	ash, white oak

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
LnA:				
Lorain	eastern white pine	90	0	American sycamore, Norway spruce, baldcypress, eastern cottonwood, green ash, pin oak, red maple, river birch, silver maple, swamp white oak, sweetgum
	northern red oak	80	0	
	pin oak	85	72	
	red maple	---	0	
	tuliptree	90	0	
McB:				
Mechanicsburg	black cherry	---	0	black cherry, black locust, black walnut, eastern white pine, green ash, northern red oak, tuliptree, white ash, white oak
	black walnut	---	0	
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	75	57	
McC:				
Mechanicsburg	black cherry	---	0	black cherry, black locust, black walnut, eastern white pine, green ash, northern red oak, tuliptree, white ash, white oak
	black walnut	---	0	
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	75	57	
MnB:				
Morristown	American sycamore	---	0	American sycamore, Norway spruce, Scotch pine, Virginia pine, bigtooth aspen, black ash, black locust, black walnut, eastern cottonwood, eastern white pine, red pine, silver maple, white ash, white spruce
	black cherry	---	0	
	black locust	68	0	
	black oak	70	57	
	eastern cottonwood	---	0	
	northern red oak	73	57	
	red maple	100	57	
	silver maple	---	0	
	tuliptree	88	86	
	white ash	50	29	
	white oak	60	43	
MnD:				
Morristown	American sycamore	---	0	American sycamore, Norway spruce, Scotch pine, Virginia pine, bigtooth aspen, black ash, black locust, black walnut, eastern cottonwood, eastern white pine, red pine, silver maple, white ash, white spruce
	black cherry	---	0	
	black locust	68	0	
	black oak	70	57	
	eastern cottonwood	---	0	
	northern red oak	73	57	
	red maple	100	57	
	silver maple	---	0	
	tuliptree	88	86	
	white ash	50	29	
	white oak	60	43	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
MoB:				
Morristown	American sycamore	---	0	American sycamore,
	black cherry	---	0	Norway spruce,
	black locust	68	0	Scotch pine,
	black oak	70	57	Virginia pine,
	eastern cottonwood	---	0	bigtooth aspen,
	northern red oak	73	57	black ash, black
	red maple	100	57	locust, black
	silver maple	---	0	walnut, eastern
	tuliptree	88	86	cottonwood,
	white ash	50	29	eastern white
	white oak	60	43	pine, red pine,
				silver maple,
				white ash, white
				spruce
MoD:				
Morristown	American sycamore	---	0	American sycamore,
	black cherry	---	0	Norway spruce,
	black locust	68	0	Scotch pine,
	black oak	70	57	Virginia pine,
	eastern cottonwood	---	0	bigtooth aspen,
	northern red oak	73	57	black ash, black
	red maple	100	57	locust, black
	silver maple	---	0	walnut, eastern
	tuliptree	88	86	cottonwood,
	white ash	50	29	eastern white
	white oak	60	43	pine, red pine,
				silver maple,
				white ash, white
				spruce
OdA:				
Olmsted	northern red oak	80	57	American sycamore,
	pin oak	86	72	baldcypress, bur
	red maple	---	0	oak, eastern
	sugar maple	80	0	cottonwood, green
	tuliptree	90	0	ash, pin oak, red
				maple, river
				birch, silver
				maple, sugar
				maple, swamp white
				oak, sweetgum,
				white ash
Valley	eastern white pine	55	86	American sycamore,
	red maple	50	29	Norway spruce,
				baldcypress,
				eastern
				cottonwood, green
				ash, pin oak, red
				maple, river
				birch, silver
				maple, swamp white
				oak, sweetgum
OmB:				
Omulga	black cherry	---	0	American sycamore,
	black walnut	---	0	Norway spruce,
	northern red oak	80	57	black cherry,
	sugar maple	---	0	black locust, bur
	tuliptree	---	0	oak, eastern white
	white ash	---	0	pine, green ash,
	white oak	---	0	northern red oak,
				sugar maple,
				tuliptree, white
				ash, white oak

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
OmC:				
Omulga	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	black walnut	---	0	
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	---	0	
OrA:				
Orrville	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern cottonwood, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	northern red oak	80	57	
	pin oak	85	72	
	sugar maple	80	57	
	tuliptree	90	86	
	white ash	---	0	
	white oak	---	0	
Pg:				
Pits	---	---	---	---
RaB:				
Rainsboro	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	black walnut	---	0	
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	---	0	
RaC2:				
Rainsboro	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	black walnut	---	0	
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	---	0	
RbC:				
Rainsboro	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	black walnut	---	0	
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	---	0	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
ReA:				
Ravenna	black oak	80	57	American sycamore, black locust, bur oak, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	northern red oak	80	57	
	pin oak	85	72	
	sugar maple	85	57	
	tuliptree	90	86	
ReB:				
Ravenna	black oak	80	57	American sycamore, black locust, bur oak, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	northern red oak	80	57	
	pin oak	85	72	
	sugar maple	85	57	
	tuliptree	90	86	
RhD:				
Richland	yellow-poplar	90	86	black cherry, black locust, black walnut, green ash, eastern white pine, northern red oak, white ash, white oak, tuliptree
	northern red oak	80	57	
	white ash	---	---	
	black walnut	---	---	
RhE:				
Richland	yellow-poplar	90	86	black cherry, black locust, black walnut, green ash, eastern white pine, northern red oak, white ash, white oak, tuliptree
	northern red oak	80	57	
	white ash	---	---	
	black walnut	---	---	
RsB:				
Rittman	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	northern red oak	90	72	
	sugar maple	70	43	
	tuliptree	---	0	
	white ash	---	0	
	white oak	---	0	
RsC:				
Rittman	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	northern red oak	90	72	
	sugar maple	70	43	
	tuliptree	---	0	
	white ash	---	0	
	white oak	---	0	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
RsD2:				
Rittman	black cherry	---	0	American sycamore,
	northern red oak	90	72	Norway spruce,
	sugar maple	70	43	black cherry,
	tuliptree	---	0	black locust, bur
	white ash	---	0	oak, eastern white
	white oak	---	0	pine, green ash,
				northern red oak,
				sugar maple,
				tuliptree, white
				ash, white oak
TeB:				
Teegarden	American beech	---	0	American sycamore,
	American sycamore	---	0	Norway spruce,
	northern red oak	87	72	Virginia pine,
	slippery elm	---	0	black cherry,
	sugar maple	70	43	black locust,
	white ash	83	86	black oak, bur
	white oak	---	0	oak, eastern white
				pine, green ash,
				northern red oak,
				red pine,
				tuliptree, white
				ash, white oak
TeC:				
Teegarden	American beech	---	0	American sycamore,
	American sycamore	---	0	Norway spruce,
	northern red oak	87	72	Virginia pine,
	slippery elm	---	0	black cherry,
	sugar maple	70	43	black locust,
	white ash	83	86	black oak, bur
	white oak	---	0	oak, eastern white
				pine, green ash,
				northern red oak,
				red pine,
				tuliptree, white
				ash, white oak
TeC2:				
Teegarden	American beech	---	0	American sycamore,
	American sycamore	---	0	Norway spruce,
	northern red oak	87	72	Virginia pine,
	slippery elm	---	0	black cherry,
	sugar maple	70	43	black locust,
	white ash	83	86	black oak, bur
	white oak	---	0	oak, eastern white
				pine, green ash,
				northern red oak,
				red pine,
				tuliptree, white
				ash, white oak
ToA:				
Tioga	northern red oak	75	57	black cherry, black
	sugar maple	67	43	walnut, bur oak,
	tuliptree	85	86	green ash,
				northern red oak,
				tuliptree, white
				ash, white oak
Ua:				
Udorthents	---	---	---	---

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
Ub:				
Udorthents	---	---	---	---
Uc:				
Udorthents	---	---	---	---
Pits	---	---	---	---
UkC2:				
Upshur	Virginia pine	66	100	Norway spruce, black cherry, black walnut, eastern white pine, green ash, northern red oak, white oak, white spruce
	eastern white pine	80	143	
	northern red oak	65	43	
	tuliptree	80	72	
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
UkD2:				
Upshur	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, green ash, northern red oak, white oak, white spruce
	eastern white pine	75	129	
	northern red oak	65	43	
	tuliptree	90	0	
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	60	43	
	northern red oak	60	43	
UkE2:				
Upshur	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, green ash, northern red oak, white oak, white spruce
	eastern white pine	75	129	
	northern red oak	65	43	
	tuliptree	90	0	
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
Ur:				
Urban Land	---	---	---	---

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
UtB:				
Urban Land	---	---	---	---
Canfield	American beech	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	American sycamore	---	0	
	northern red oak	87	72	
	slippery elm	---	0	
	sugar maple	70	43	
	white ash	83	86	
	white oak	---	0	
UtC:				
Urban Land	---	---	---	---
Canfield	American beech	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	American sycamore	---	0	
	northern red oak	87	72	
	slippery elm	---	0	
	sugar maple	70	43	
	white ash	83	86	
	white oak	---	0	
UvB:				
Urban Land	---	---	---	---
Chili	black cherry	---	0	Douglas fir, Norway spruce, Scotch pine, black cherry, black locust, black walnut, blue spruce, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	black walnut	---	0	
	northern red oak	85	72	
	sugar maple	---	0	
	tuliptree	---	0	
	white ash	---	0	
	white oak	80	57	
VaA:				
Valley	eastern white pine	55	86	American sycamore, Norway spruce, baldcypress, eastern cottonwood, green ash, pin oak, red maple, river birch, silver maple, swamp white oak, sweetgum
	red maple	50	29	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
VbA:				
Valley	eastern white pine	55	86	American sycamore, Norway spruce, baldcypress, eastern cottonwood, green ash, pin oak, red maple, river birch, silver maple, swamp white oak, sweetgum
	red maple	50	29	
VcA:				
Valley	eastern white pine	55	86	American sycamore, Norway spruce, baldcypress, eastern cottonwood, green ash, pin oak, red maple, river birch, silver maple, swamp white oak, sweetgum
	red maple	50	29	
Lorain	eastern white pine	90	0	American sycamore, Norway spruce, baldcypress, eastern cottonwood, green ash, pin oak, red maple, river birch, silver maple, swamp white oak, sweetgum
	northern red oak	80	0	
	pin oak	85	72	
	red maple	---	0	
	tuliptree	90	0	
VnB:				
Vandergrift	northern red oak	76	57	Austrian pine, eastern redcedar, eastern white pine, tuliptree, white spruce
	sugar maple	75	43	
	tuliptree	86	86	
	white ash	75	43	
VnC:				
Vandergrift	northern red oak	76	57	Austrian pine, eastern redcedar, eastern white pine, tuliptree, white spruce
	sugar maple	75	43	
	tuliptree	86	86	
	white ash	75	43	
W:				
Water	---	---	---	---
WaA:				
Wadsworth	American beech	---	0	American sycamore, black locust, bur oak, bur oak, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	American sycamore	---	0	
	black oak	85	72	
	northern red oak	85	72	
	pin oak	90	72	
	slippery elm	---	0	
	sugar maple	---	0	
	white ash	---	0	
	white oak	---	0	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber (cu ft/ac)	Trees to manage
WaB:				
Wadsworth	American beech	---	0	American sycamore, black locust, bur oak, bur oak, green ash, northern red oak, sugar maple, tuliptree, white ash, white oak
	American sycamore	---	0	
	black oak	85	72	
	northern red oak	85	72	
	pin oak	90	72	
	slippery elm	---	0	
	sugar maple	---	0	
	white ash	---	0	
	white oak	---	0	
WkE:				
Westmoreland	eastern white pine	75	143	black locust, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak
	northern red oak	81	57	
	tuliptree	90	86	
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
WkF:				
Westmoreland	eastern white pine	75	143	black locust, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak
	northern red oak	81	57	
	tuliptree	90	86	
Berks	Virginia pine	70	114	Norway spruce, black cherry, black walnut, eastern white pine, northern red oak, white ash, white oak
	black oak	70	57	
	northern red oak	70	57	
WmC:				
Westmoreland	eastern white pine	70	129	black locust, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak
	northern red oak	75	57	
	tuliptree	85	86	
Coshocton	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	90	86	
	white ash	---	0	
	white oak	75	57	

Table 12.--Woodland Productivity--Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
WmD:				
Westmoreland	eastern white pine	75	143	black locust, black walnut, eastern white pine, northern red oak, tuliptree, white ash, white oak
	northern red oak	81	57	
	tuliptree	90	86	
Coshocton	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern white pine, green ash, northern red oak, red pine, sugar maple, tuliptree, white ash, white oak
	northern red oak	80	57	
	sugar maple	---	0	
	tuliptree	90	86	
	white ash	---	0	
	white oak	75	57	
WoA:				
Wick	black cherry	---	0	American sycamore, Austrian pine, Norway spruce, baldcypress, bur oak, eastern arborvitae, eastern cottonwood, green ash, pin oak, red maple, river birch, silver maple, swamp white oak, sweetgum, white ash
	eastern cottonwood	---	0	
	green ash	---	0	
	pin oak	90	72	
	red maple	65	43	
	swamp white oak	---	0	
ZeA:				
Zepernick	black cherry	---	0	American sycamore, Norway spruce, black cherry, black locust, bur oak, eastern cottonwood, eastern white pine, green ash, northern red oak, red pine, tuliptree, white ash, white oak, white spruce
	northern red oak	60	57	
	pin oak	85	72	
	sugar maple	80	57	
	tuliptree	90	86	
	white ash	---	0	
	white oak	---	0	

TABLE 13.--WOODLAND HARVESTING ACTIVITIES

(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 potential limitation. See text on page 226 for further explanation of ratings in this table.)

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmF:						
Amanda	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
BkB:						
Berks	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
	Depth to bedrock	0.50				
BkC:						
Berks	Moderate		Moderately suited		Moderately suited	
	Depth to bedrock	0.50	Slope	0.50	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
BkD:						
Berks	Severe		Poorly suited		Moderately suited	
	Depth to bedrock	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
BkE:						
Berks	Severe		Poorly suited		Moderately suited	
	Slope	1.00	Slope	1.00	Slope	0.50
			Low strength	0.50	Low strength	0.50
BmB:						
Berks	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
	Depth to bedrock	0.50				
Urban Land	Not Rated		Not rated		Not rated	
BmC:						
Berks	Moderate		Moderately suited		Moderately suited	
	Depth to bedrock	0.50	Slope	0.50	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
Urban Land	Not Rated		Not rated		Not rated	
BmD:						
Berks	Severe		Poorly suited		Moderately suited	
	Depth to bedrock	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
Urban Land	Not Rated		Not rated		Not rated	
BpF:						
Bethesda	Severe		Poorly suited		Poorly suited	
	Soil slippage	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Soil slippage	1.00	Low strength	0.50
			Low strength	0.50		
BsC2:						
Bogart	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BtA:						
Bogart	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
BtB:						
Bogart	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
BtC:						
Bogart	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
CaA:						
Calcutta	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
CcB:						
Canfield	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
CcC:						
Canfield	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
CcD:						
Canfield	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
			Depth to saturated zone	0.50		
CcE:						
Canfield	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
			Depth to saturated zone	0.50		
CeA:						
Carlisle	Severe		Poorly suited		Poorly suited	
	Low strength	1.00	Ponding	1.00	Low strength	1.00
			Low strength	1.00		
			Depth to saturated zone	1.00		
CfD2:						
Chili	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
ChA:						
Chili	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Too sandy	0.50	Low strength	0.50
	Too sandy	0.50	Low strength	0.50	Too sandy	0.50

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ChB:						
Chili	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Too sandy	0.50	Low strength	0.50
	Too sandy	0.50	Low strength	0.50	Too sandy	0.50
ChC:						
Chili	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
	Too sandy	0.50	Too sandy	0.50	Too sandy	0.50
			Low strength	0.50		
CmB:						
Conotton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
CmC:						
Conotton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
CoB:						
Coshocton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
CoC:						
Coshocton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
CoD:						
Coshocton	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
			Depth to saturated zone	0.50		
DAM:						
Dam	Not Rated		Not rated		Not rated	
DgA:						
Doles	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
ErC:						
Ernest	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
ErD:						
Ernest	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
			Depth to saturated zone	0.50		
FbB:						
Fairpoint	Slight		Moderately suited		Moderately suited	
			Low strength	0.50	Low strength	0.50

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FbD:						
Fairpoint	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Slope	0.50	Slope	1.00		
			Low strength	0.50		
FbF:						
Fairpoint	Severe		Poorly suited		Poorly suited	
	Soil slippage	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Soil slippage	1.00	Low strength	0.50
			Low strength	0.50		
FcB:						
Fairpoint	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
FcD:						
Fairpoint	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Slope	0.50	Slope	1.00		
			Low strength	0.50		
FdA:						
Fitchville	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
FdB:						
Fitchville	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
FeA:						
Fluvaquents	Severe		Poorly suited		Poorly suited	
	Flooding	1.00	Ponding	1.00	Wetness	1.00
	Wetness	1.00	Flooding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
FnC2:						
Fredericktown	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
FnD2:						
Fredericktown	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
FoB:						
Fredericktown	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
FrA:						
Frenchtown	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
GaB:						
Gavers	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value	Harvest equipment operability: Rating class and limiting features	Value
GeC:						
Germano	Slight		Moderately suited		Moderately suited	
			Slope	0.50	Low strength	0.50
			Low strength	0.50		
GeD:						
Germano	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Slope	0.50
			Low strength	0.50	Low strength	0.50
GnB:						
Gilpin	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
	Depth to bedrock	0.50				
GnC:						
Gilpin	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
GnD:						
Gilpin	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
			Low strength	0.50	Slope	0.50
GoC:						
Gilpin	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Coshocton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
GoD:						
Gilpin	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
Coshocton	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
			Depth to saturated zone	0.50		
GpC:						
Gilpin	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Coshocton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
Urban Land	Not Rated		Not rated		Not rated	
GrB:						
Glenford	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GrC:						
Glenford	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
GuC:						
Guernsey	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Slope	0.50		
			Depth to saturated zone	0.50		
			Low strength	0.50		
GuC2:						
Guernsey	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Slope	0.50		
			Depth to saturated zone	0.50		
			Low strength	0.50		
GuD:						
Guernsey	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Soil slippage	1.00	Slope	0.50
	Low strength	0.50	Depth to saturated zone	0.50		
			Low strength	0.50		
HeB:						
Hazleton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
HeC:						
Hazleton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
HeD:						
Hazleton	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Depth to bedrock	0.50	Low strength	0.50	Slope	0.50
HeE:						
Hazleton	Severe		Poorly suited		Moderately suited	
	Slope	1.00	Slope	1.00	Slope	0.50
			Low strength	0.50	Low strength	0.50
HfF:						
Hazleton	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Low strength	0.50	Low strength	0.50
Rock Outcrop	Not Rated		Not rated		Not rated	
HgF:						
Hazleton	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Low strength	0.50	Low strength	0.50
Westmoreland	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value	Harvest equipment operability: Rating class and limiting features	Value
HkA:						
Holly	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	0.50	Depth to saturated zone	1.00		
			Low strength	0.50		
HlB:						
Homewood	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
HmA:						
Homeworth	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
HmB:						
Homeworth	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	0.50	Low strength	0.50
			Low strength	0.50		
HoA:						
Homeworth	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
HoB:						
Homeworth	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	0.50	Low strength	0.50
			Low strength	0.50		
JwA:						
Jimtown	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
	Too sandy	0.50	Too sandy	0.50	Too sandy	0.50
			Low strength	0.50		
JwB:						
Jimtown	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
KeB:						
Keene	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
KnB:						
Kensington	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
KnC:						
Kensington	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KnD:						
Kensington	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
LbA:						
Lobdell	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
			Depth to saturated zone	0.50		
LnA:						
Lorain	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
McB:						
Mechanicsburg	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Too sandy	0.50	Low strength	0.50
	Too sandy	0.50	Low strength	0.50	Too sandy	0.50
McC:						
Mechanicsburg	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
	Too sandy	0.50	Too sandy	0.50	Too sandy	0.50
			Low strength	0.50		
MnB:						
Morristown	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
MnD:						
Morristown	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Slope	0.50	Slope	1.00		
			Low strength	0.50		
MoB:						
Morristown	Slight		Moderately suited		Moderately suited	
			Low strength	0.50	Low strength	0.50
MoD:						
Morristown	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Slope	0.50	Slope	1.00		
			Low strength	0.50		
OdA:						
Olmsted	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Valley	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
OmB:						
Omulga	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
OmC:						
Omulga	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
OrA:						
Orrville	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	0.50	Depth to saturated zone	1.00		
			Low strength	0.50		
Pg:						
Pits	Not Rated		Not rated		Not rated	
RaB:						
Rainsboro	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
RaC2:						
Rainsboro	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
RbC:						
Rainsboro	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
ReA:						
Ravenna	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
ReB:						
Ravenna	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
RhD:						
Richland	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
RhE:						
Richland	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Slope	1.00	Slope	0.50
	Slope	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
RsB:						
Rittman	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RsC:						
Rittman	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
RsD2:						
Rittman	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
			Depth to saturated zone	0.50		
TeB:						
Teegarden	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
TeC:						
Teegarden	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
TeC2:						
Teegarden	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
ToA:						
Tioga	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
Ua:						
Udorthents	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Slope	1.00	Low strength	0.50
			Low strength	0.50		
Ub:						
Udorthents	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Slope	1.00	Low strength	0.50
			Low strength	0.50		
Uc:						
Udorthents	Severe		Poorly suited		Moderately suited	
	Slope	1.00	Slope	1.00	Slope	0.50
	Low strength	0.50	Low strength	0.50	Low strength	0.50
Pits	Not Rated		Not rated		Not rated	
UkC2:						
Upshur	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Slope	0.50		
			Low strength	0.50		
Berks	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UkD2:						
Upshur	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Soil slippage	1.00	Slope	0.50
	Low strength	0.50	Low strength	0.50		
Berks	Severe		Poorly suited		Moderately suited	
	Depth to bedrock	1.00	Slope	1.00	Low strength	0.50
	Slope	0.50	Low strength	0.50	Slope	0.50
UkE2:						
Upshur	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Slope	1.00	Slope	0.50
	Slope	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
Berks	Severe		Poorly suited		Moderately suited	
	Slope	1.00	Slope	1.00	Slope	0.50
			Low strength	0.50	Low strength	0.50
Ur:						
Urban Land	Not Rated		Not rated		Not rated	
UtB:						
Urban Land	Not Rated		Not rated		Not rated	
Canfield	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
UtC:						
Urban Land	Not Rated		Not rated		Not rated	
Canfield	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
UvB:						
Urban Land	Not Rated		Not rated		Not rated	
Chili	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Too sandy	0.50	Low strength	0.50
	Too sandy	0.50	Low strength	0.50	Too sandy	0.50
VaA:						
Valley	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
VbA:						
Valley	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
VcA:						
Valley	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
Lorain	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Ponding	1.00	Low strength	0.50
			Depth to saturated zone	1.00		
			Low strength	0.50		
VnB:						
Vandergrift	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Low strength	0.50	Low strength	0.50
			Depth to saturated zone	0.50		
VnC:						
Vandergrift	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Slope	0.50		
			Low strength	0.50		
			Depth to saturated zone	0.50		
W:						
Water	Not Rated		Not rated		Not rated	
WaA:						
Wadsworth	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
WaB:						
Wadsworth	Moderate		Poorly suited		Moderately suited	
	Low strength	0.50	Depth to saturated zone	1.00	Low strength	0.50
			Low strength	0.50		
WkE:						
Westmoreland	Severe		Poorly suited		Moderately suited	
	Soil slippage	1.00	Slope	1.00	Slope	0.50
	Slope	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
Berks	Severe		Poorly suited		Moderately suited	
	Slope	1.00	Slope	1.00	Slope	0.50
			Low strength	0.50	Low strength	0.50
WkF:						
Westmoreland	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Soil slippage	1.00	Soil slippage	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50		
Berks	Severe		Poorly suited		Poorly suited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Low strength	0.50	Low strength	0.50

Table 13.--Woodland Harvesting Activities--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for roads (natural surface)		Harvest equipment operability	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WmC:						
Westmoreland	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
Coshocton	Moderate		Moderately suited		Moderately suited	
	Low strength	0.50	Slope	0.50	Low strength	0.50
			Low strength	0.50		
			Depth to saturated zone	0.50		
WmD:						
Westmoreland	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
Coshocton	Moderate		Poorly suited		Moderately suited	
	Slope	0.50	Slope	1.00	Low strength	0.50
	Low strength	0.50	Low strength	0.50	Slope	0.50
			Depth to saturated zone	0.50		
WoA:						
Wick	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	0.50	Depth to saturated zone	1.00		
			Low strength	0.50		
ZeA:						
Zepernick	Severe		Poorly suited		Moderately suited	
	Flooding	1.00	Flooding	1.00	Low strength	0.50
	Low strength	0.50	Depth to saturated zone	1.00		
			Low strength	0.50		

TABLE 14.--WOODLAND REGENERATION ACTIVITIES

(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 potential limitation. See text on page 226 for further explanation of ratings in this table.)

Map symbol and soil name	Suitability for mechanical planting		Suitability for site preparation		Potential for damage to soil by fire	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmF:						
Amanda	Unsuited		Unsuited		Low	
	Slope	1.00	Slope	1.00	Texture/slope/ rock fragments	0.30
BkB:						
Berks	Unsuited		Poorly suited		Low	
	Rock fragment content	0.87	Rock fragment content	0.50	Texture/rock fragments	0.01
BkC:						
Berks	Unsuited		Poorly suited		Low	
	Rock fragment content	0.87	Rock fragment content	0.50	Texture/rock fragments	0.01
	Slope	0.50				
BkD:						
Berks	Unsuited		Poorly suited		Low	
	Rock fragment content	0.94	Slope	0.75	Texture/rock fragments	0.01
	Slope	0.75	Rock fragment content	0.50		
BkE:						
Berks	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/slope/ rock fragments	0.30
	Rock fragment content	0.88	Rock fragment content	0.50		
BmB:						
Berks	Poorly suited		Poorly suited		Low	
	Rock fragment content	0.75	Rock fragment content	0.50	Texture/rock fragments	0.01
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Unsuited		Poorly suited		Low	
	Rock fragment content	0.87	Rock fragment content	0.50	Texture/rock fragments	0.01
	Slope	0.50				
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Unsuited		Poorly suited		Low	
	Rock fragment content	0.87	Slope	0.75	Texture/rock fragments	0.01
	Slope	0.75	Rock fragment content	0.50		
Urban Land	Not rated		Not rated		Not rated	
BpF:						
Bethesda	Unsuited		Unsuited		High	
	Slope	1.00	Slope	1.00	Texture/slope/surface depth/rock fragments	1.00
	Rock fragment content	0.97	Rock fragment content	0.50		
BsC2:						
Bogart	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
BtA:						
Bogart	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
BtB:						
Bogart	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
BtC:						
Bogart	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
CaA:						
Calcutta	Well suited		Well suited		Low	
CcB:						
Canfield	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
CcC:						
Canfield	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
CcD:						
Canfield	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
CcE:						
Canfield	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
CeA:						
Carlisle	Well suited		Well suited		Low	
CfD2:						
Chili	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.30
	Rock fragment content	0.22				
ChA:						
Chili	Moderately suited		Well suited		Low	
	Too sandy	0.50			Texture/rock fragments	0.01
ChB:						
Chili	Moderately suited		Well suited		Low	
	Too sandy	0.50			Texture/rock fragments	0.01
ChC:						
Chili	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
	Too sandy	0.50				
	Rock fragment content	0.40				
CmB:						
Conotton	Unsuited		Poorly suited		Moderate	
	Rock fragment content	0.85	Rock fragment content	0.50	Texture/rock fragments	0.50

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
CmC:						
Conotton	Unsuited		Poorly suited		Moderate	
	Rock fragment content	0.94	Rock fragment content	0.50	Texture/rock fragments	0.50
	Slope	0.50				
CoB:						
Coshocton	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
CoC:						
Coshocton	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
CoD:						
Coshocton	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.30
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
ErC:						
Ernest	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
ErD:						
Ernest	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
FbB:						
Fairpoint	Unsuited		Poorly suited		Moderate	
	Rock fragment content	0.93	Rock fragment content	0.50	Texture/rock fragments	0.70
FbD:						
Fairpoint	Unsuited		Poorly suited		High	
	Rock fragment content	0.87	Slope	0.75	Texture/surface depth/rock fragments	1.00
	Slope	0.75	Rock fragment content	0.50		
FbF:						
Fairpoint	Unsuited		Unsuited		High	
	Slope	1.00	Slope	1.00	Texture/slope/surface depth/rock fragments	1.00
	Rock fragment content	0.99	Rock fragment content	0.50		
FcB:						
Fairpoint	Unsuited		Poorly suited		Moderate	
	Rock fragment content	0.88	Rock fragment content	0.50	Texture/rock fragments	0.70
FcD:						
Fairpoint	Poorly suited		Poorly suited		Moderate	
	Rock fragment content	0.75	Slope	0.75	Texture/rock fragments	0.70
	Slope	0.75	Rock fragment content	0.50		

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
FdA:						
Fitchville	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
FdB:						
Fitchville	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
FeA:						
Fluvaquents	Poorly suited		Poorly suited		Not rated	
	Wetness	0.75	Wetness	0.75		
FnC2:						
Fredericktown	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
	Rock fragment content	0.25				
FnD2:						
Fredericktown	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.50				
FoB:						
Fredericktown	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
FrA:						
Frenchtown	Well suited		Well suited		Low	
					Texture/surface depth/rock fragments	0.30
GaB:						
Gavers	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
GeC:						
Germano	Moderately suited		Well suited		Moderate	
	Slope	0.50			Texture/rock fragments	0.50
	Rock fragment content	0.22				
GeD:						
Germano	Poorly suited		Poorly suited		Moderate	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.50
	Rock fragment content	0.28				
GnB:						
Gilpin	Well suited		Well suited		Low	
	Rock fragment content	0.05			Texture/rock fragments	0.01
GnC:						
Gilpin	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/surface depth/rock fragments	0.30
	Rock fragment content	0.25				

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
GnD:						
Gilpin	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.18				
GoC:						
Gilpin	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Coshocton	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
GoD:						
Gilpin	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.25				
Coshocton	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
GpC:						
Gilpin	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
	Rock fragment content	0.05				
Coshocton	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
GrC:						
Glenford	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
GuC:						
Guernsey	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
GuC2:						
Guernsey	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
GuD:						
Guernsey	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
HeB:						
Hazleton	Poorly suited		Poorly suited		Low	
	Rock fragment content	0.75	Rock fragment content	0.50	Texture/rock fragments	0.01
HeC:						
Hazleton	Poorly suited		Poorly suited		Low	
	Rock fragment content	0.75	Rock fragment content	0.50	Texture/rock fragments	0.01
	Slope	0.50				
HeD:						
Hazleton	Unsuited		Poorly suited		Low	
	Rock fragment content	0.87	Slope	0.75	Texture/surface depth/rock fragments	0.30
	Slope	0.75	Rock fragment content	0.50		
HeE:						
Hazleton	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/slope/ rock fragments	0.30
	Rock fragment content	0.87	Rock fragment content	0.50		
HfF:						
Hazleton	Unsuited		Unsuited		Moderate	
	Slope	1.00	Slope	1.00	Texture/slope/surface depth/rock fragments	0.50
	Rock fragment content	0.97	Rock fragment content	0.50		
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Unsuited		Unsuited		Low	
	Slope	1.00	Slope	1.00		
	Rock fragment content	0.68	Rock fragment content	0.50		
Westmoreland	Unsuited		Unsuited		Moderate	
	Slope	1.00	Slope	1.00	Texture/slope/surface depth/rock fragments	0.50
	Rock fragment content	0.25				
HkA:						
Holly	Well suited		Well suited		Low	
					Texture/surface depth/rock fragments	0.30
HlB:						
Homewood	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
HmA:						
Homeworth	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
HmB:						
Homeworth	Well suited		Well suited		Low	
					Texture/rock fragments	0.01

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
HoA:						
Homeworth	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
HoB:						
Homeworth	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
JwA:						
Jimtown	Moderately suited		Well suited		Low	
	Too sandy	0.50			Texture/rock fragments	0.01
JwB:						
Jimtown	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
KeB:						
Keene	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
KnB:						
Kensington	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
KnC:						
Kensington	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
KnD:						
Kensington	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
LbA:						
Lobdell	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
LnA:						
Lorain	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.30
McB:						
Mechanicsburg	Moderately suited		Well suited		Low	
	Too sandy	0.50			Texture/rock fragments	0.01
	Rock fragment content	0.05				
McC:						
Mechanicsburg	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
	Too sandy	0.50				
MnB:						
Morristown	Poorly suited		Poorly suited		Moderate	
	Rock fragment content	0.75	Rock fragment content	0.50	Texture/rock fragments	0.70
MnD:						
Morristown	Unsuited		Poorly suited		Moderate	
	Rock fragment content	0.87	Slope	0.75	Texture/rock fragments	0.70
	Slope	0.75	Rock fragment content	0.50		

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
MoB:						
Morristown	Unsuited		Poorly suited		High	
	Rock fragment content	0.88	Rock fragment content	0.50	Texture/surface depth/rock fragments	1.00
MoD:						
Morristown	Unsuited		Poorly suited		High	
	Rock fragment content	0.88	Slope	0.75	Texture/surface depth/rock fragments	1.00
	Slope	0.75	Rock fragment content	0.50		
OdA:						
Olmsted	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Valley	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
OmB:						
Omulga	Well suited		Well suited		Moderate	
					Texture/rock fragments	0.50
OmC:						
Omulga	Moderately suited		Well suited		Moderate	
	Slope	0.50			Texture/rock fragments	0.50
OrA:						
Orrville	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Well suited		Well suited		Moderate	
					Texture/rock fragments	0.50
RaC2:						
Rainsboro	Moderately suited		Well suited		Moderate	
	Slope	0.50			Texture/rock fragments	0.50
RbC:						
Rainsboro	Moderately suited		Well suited		Moderate	
	Slope	0.50			Texture/rock fragments	0.50
	Rock fragment content	0.05				
ReA:						
Ravenna	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
ReB:						
Ravenna	Well suited		Well suited		Low	
					Texture/rock fragments	0.01

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
RhD:						
Richland	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.14				
RhE:						
Richland	Unsuited		Poorly suited		Low	
	Slope	1.00	Slope	0.75	Texture/rock fragments	0.01
	Rock fragment content	0.34				
RsB:						
Rittman	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
RsC:						
Rittman	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
RsD2:						
Rittman	Poorly suited		Poorly suited		Low	
	Slope	0.75	Slope	0.75	Texture/surface depth/rock fragments	0.30
TeB:						
Teegarden	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
TeC:						
Teegarden	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
TeC2:						
Teegarden	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
ToA:						
Tioga	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
Ua:						
Udorthents	Unsuited		Well suited		Low	
	Rock fragment content	0.85			Texture/surface depth/rock fragments	0.30
	Slope	0.50				
Ub:						
Udorthents	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
	Rock fragment content	0.40				
Uc:						
Udorthents	Unsuited		Poorly suited		Moderate	
	Slope	1.00	Slope	0.75	Texture/slope/surface depth/rock fragments	0.50
	Rock fragment content	0.85				
Pits	Not rated		Not rated		Not rated	

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
UkC2:						
Upshur	Moderately suited		Poorly suited		High	
	Slope	0.50	Stickiness	0.50	Texture/surface depth/rock fragments	1.00
	Stickiness	0.50				
Berks	Poorly suited		Poorly suited		Low	
	Rock fragment content	0.75	Rock fragment content	0.50	Texture/rock fragments	0.01
	Slope	0.50				
UkD2:						
Upshur	Poorly suited		Poorly suited		Moderate	
	Slope	0.75	Slope	0.75	Texture/rock fragments	0.70
	Stickiness	0.50	Stickiness	0.50		
Berks	Poorly suited		Poorly suited		Low	
	Rock fragment content	0.75	Slope	0.75	Texture/rock fragments	0.01
	Slope	0.75	Rock fragment content	0.50		
UkE2:						
Upshur	Unsuited		Poorly suited		High	
	Slope	1.00	Slope	0.75	Texture/slope/surface depth	1.00
	Stickiness	0.50	Stickiness	0.50		
Berks	Unsuited		Poorly suited		Moderate	
	Slope	1.00	Slope	0.75	Texture/slope/surface depth/rock fragments	0.50
	Rock fragment content	0.87	Rock fragment content	0.50		
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Moderately suited		Well suited		Low	
	Too sandy	0.50			Texture/rock fragments	0.01
VaA:						
Valley	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
VbA:						
Valley	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.30

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting: Rating class and limiting features	Value	Suitability for site preparation: Rating class and limiting features	Value	Potential for damage to soil by fire: Rating class and limiting features	Value
VcA:						
Valley	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
Lorain	Moderately suited		Well suited		Low	
	Stickiness	0.50			Texture/rock fragments	0.01
VnB:						
Vandergrift	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
VnC:						
Vandergrift	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
	Stickiness	0.50				
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
WaB:						
Wadsworth	Well suited		Well suited		Low	
					Texture/rock fragments	0.01
WkE:						
Westmoreland	Unsuited		Poorly suited		Moderate	
	Slope	1.00	Slope	0.75	Texture/slope/surface depth/rock fragments	0.50
	Rock fragment content	0.05				
Berks	Unsuited		Poorly suited		Moderate	
	Slope	1.00	Slope	0.75	Texture/slope/surface depth/rock fragments	0.50
	Rock fragment content	0.87	Rock fragment content	0.50		
WkF:						
Westmoreland	Unsuited		Unsuited		Low	
	Slope	1.00	Slope	1.00		
	Rock fragment content	0.05				
Berks	Unsuited		Unsuited		Moderate	
	Slope	1.00	Slope	1.00	Texture/slope/surface depth/rock fragments	0.50
	Rock fragment content	0.75	Rock fragment content	0.50		
WmC:						
Westmoreland	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01
Coshocton	Moderately suited		Well suited		Low	
	Slope	0.50			Texture/rock fragments	0.01

Table 14.--Woodland Regeneration Activities--Continued

Map symbol and soil name	Suitability for mechanical planting		Suitability for site preparation		Potential for damage to soil by fire	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WmD:						
Westmoreland	Poorly suited Slope	0.75	Poorly suited Slope	0.75	Low Texture/rock fragments	0.01
Coshocton	Poorly suited Slope	0.75	Poorly suited Slope	0.75	Low Texture/surface depth/rock fragments	0.30
WoA:						
Wick	Well suited		Well suited		Low Texture/rock fragments	0.01
ZeA:						
Zepernick	Well suited		Well suited		Low Texture/rock fragments	0.01

TABLE 15.--WINDBREAKS AND ENVIRONMENTAL PLANTINGS

(Absence of an entry indicates that trees generally do not grow to the given height. See text on page 229 for additional information.)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
AmF:					
Amanda	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
BkB:					
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
BkC:					
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
BkD:					
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
BkE:					
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
BmB:					
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
BmC:					
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
BmD:					
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
BpF:					
Bethesda	gray dogwood; manyflower cotoneaster; Siberian peashrub; silky dogwood	American cranberrybush; Amur maple; common lilac; eastern redcedar	---	jack pine; red pine	eastern white pine; Norway spruce
BsC2:					
Bogart	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
BtA:					
Bogart	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
BtB:					
Bogart	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
BtC:					
Bogart	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
CaA:					
Calcutta	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---

Table 15.--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
CcB:					
Canfield	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
CcC:					
Canfield	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
CcD:					
Canfield	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
CcE:					
Canfield	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
CeA:					
Carlisle	common ninebark; sargent crabapple; silky dogwood	American cranberrybush; common lilac; nannyberry; southern arrowwood	Black Hills spruce	eastern white pine; green ash; Norway spruce	imperial Carolina poplar
CfD2:					
Chili	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
ChA:					
Chili	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
ChB:					
Chili	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
ChC:					
Chili	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
CmB:					
Conotton	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
CmC:					
Conotton	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
CoB:					
Coshocton	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
CoC:					
Coshocton	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
CoD:					
Coshocton	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
DgA:					
Doles	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
ErC:					
Ernest	American cranberrybush	Amur honeysuckle; Amur privet; southern arrowwood; Tatarian honeysuckle	Austrian pine; common hackberry; eastern redcedar; osageorange; Washington hawthorn	eastern white pine; pin oak	---

Table 15.--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
ErD:					
Ernest	American cranberrybush	Amur honeysuckle; Amur privet; southern arrowwood; Tatarian honeysuckle	Austrian pine; common hackberry; eastern redcedar; osageorange; Washington hawthorn	eastern white pine; pin oak	---
FbB:					
Fairpoint	---	---	---	---	---
FbD:					
Fairpoint	---	---	---	---	---
FbF:					
Fairpoint	---	---	---	---	---
FcB:					
Fairpoint	---	---	---	---	---
FcD:					
Fairpoint	---	---	---	---	---
FdA:					
Fitchville	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
FdB:					
Fitchville	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
FeA:					
Fluvaquents	---	---	---	---	---
FnC2:					
Fredericktown	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
FnD2:					
Fredericktown	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
FoB:					
Fredericktown	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
FrA:					
Frenchtown	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
GaB:					
Gavers	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
GeC:					
Germano	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine; Virginia pine	---	---
GeD:					
Germano	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine; Virginia pine	---	---
GnB:					
Gilpin	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
GnC:					
Gilpin	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
GnD:					
Gilpin	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---

Table 15.--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
GoC:					
Gilpin	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
Coshocton	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
GoD:					
Gilpin	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
Coshocton	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
GpC:					
Gilpin	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
Coshocton	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
GrB:					
Glenford	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
GrC:					
Glenford	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
GUC2:					
Guernsey	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
GuC:					
Guernsey	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
GuD:					
Guernsey	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
HeB:					
Hazleton	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
HeC:					
Hazleton	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
HeD:					
Hazleton	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
HeE:					
Hazleton	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
HfF:					
Hazleton	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---

Table 15.--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
HgF:					
Hazleton	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
Westmoreland	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
HkA:					
Holly	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
HlB:					
Homewood	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
HmA:					
Homeworth	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
HmB:					
Homeworth	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
HoA:					
Homeworth	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
HoB:					
Homeworth	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
JwA:					
Jimtown	American cranberrybush	Amur honeysuckle; Amur privet; silky dogwood	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
JwB:					
Jimtown	American cranberrybush	Amur honeysuckle; Amur privet; silky dogwood	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
KeB:					
Keene	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
KnB:					
Kensington	---	American cranberrybush; Amur honeysuckle; Amur privet; Washington hawthorn	eastern arborvitae; eastern redcedar; osageorange	Austrian pine; Norway spruce; red pine	eastern white pine
KnC:					
Kensington	---	American cranberrybush; Amur honeysuckle; Amur privet; Washington hawthorn	eastern arborvitae; eastern redcedar; osageorange	Austrian pine; Norway spruce; red pine	eastern white pine
KnD:					
Kensington	---	American cranberrybush; Amur honeysuckle; Amur privet; Washington hawthorn	eastern arborvitae; eastern redcedar; osageorange	Austrian pine; Norway spruce; red pine	eastern white pine
LbA:					
Lobdell	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
LnA:					
Lorain	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak

Table 15.--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
McB:					
Mechanicsburg	---	American cranberrybush; Amur honeysuckle; Amur privet; Washington hawthorn	eastern arborvitae; eastern redcedar; osageorange	Austrian pine; Norway spruce; red pine	eastern white pine
McC:					
Mechanicsburg	---	American cranberrybush; Amur honeysuckle; Amur privet; Washington hawthorn	eastern arborvitae; eastern redcedar; osageorange	Austrian pine; Norway spruce; red pine	eastern white pine
MnB:					
Morristown	Siberian peashrub	eastern redcedar; jack pine; osageorange; Russian olive; Washington hawthorn	honeylocust; northern catalpa	---	---
MnD:					
Morristown	Siberian peashrub	eastern redcedar; jack pine; osageorange; Russian olive; Washington hawthorn	honeylocust; northern catalpa	---	---
MoB:					
Morristown	gray dogwood; Siberian peashrub; silky dogwood	Amur maple; common lilac; eastern redcedar	---	jack pine; red pine	eastern white pine; Norway spruce
MoD:					
Morristown	gray dogwood; Siberian peashrub; silky dogwood	Amur maple; common lilac; eastern redcedar	---	jack pine; red pine	eastern white pine; Norway spruce
OdA:					
Olmsted	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
Valley	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
OmB:					
Omulga	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
OmC:					
Omulga	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
OrA:					
Orrville	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
RaB:					
Rainsboro	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
RaC2:					
Rainsboro	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
RbC:					
Rainsboro	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
ReA:					
Ravenna	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---

Table 15.--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
ReB:					
Ravenna	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
RhD:					
Richland	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
RhE:					
Richland	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
RsB:					
Rittman	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
RsC:					
Rittman	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
RsD2:					
Rittman	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
TeB:					
Teegarden	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
TeC:					
Teegarden	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
TeC2:					
Teegarden	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
ToA:					
Tioga	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
Ua:					
Udorthents	---	---	---	---	---
Ub:					
Udorthents	---	---	---	---	---
Uc:					
Udorthents	---	---	---	---	---
Pits	---	---	---	---	---
Ud:					
Udorthents	---	---	---	---	---
Urban land	---	---	---	---	---
UkC2:					
Upshur	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Tatarian honeysuckle; Washington hawthorn	Austrian pine; common hackberry; osageorange	eastern white pine; pin oak	---
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---

Table 15.--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
UkD2:					
Upshur	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Tatarian honeysuckle; Washington hawthorn	Austrian pine; common hackberry; osageorange	eastern white pine; pin oak	---
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
UkE2:					
Upshur	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Tatarian honeysuckle; Washington hawthorn	Austrian pine; common hackberry; osageorange	eastern white pine; pin oak	---
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
UtB:					
Urban land	---	---	---	---	---
Canfield	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
UtC:					
Urban land	---	---	---	---	---
Canfield	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
UvB:					
Urban land	---	---	---	---	---
Chili	Amur honeysuckle; common lilac; Siberian peashrub	autumn olive; eastern redcedar; radiant crabapple;	Austrian pine; eastern white pine; jack pine; red pine	---	---
VaA:					
Valley	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
VbA:					
Valley	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
VcA:					
Valley	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
Lorain	silky dogwood	American cranberrybush; Amur honeysuckle	Amur privet; Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
VnB:					
Vandergrift	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
VnC:					
Vandergrift	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---

Table 15.--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
WaA:					
Wadsworth	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Tatarian honeysuckle; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
WaB:					
Wadsworth	American cranberrybush	Amur honeysuckle; Amur privet; eastern redcedar; southern arrowwood; Tatarian honeysuckle; Washington hawthorn	Austrian pine; green ash; osageorange	eastern white pine; pin oak	---
WkE:					
Westmoreland	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
WkF:					
Westmoreland	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
Berks	Amur honeysuckle; common lilac; Siberian peashrub; Tatarian honeysuckle	autumn olive; eastern redcedar; radiant crabapple; Washington hawthorn	Austrian pine; eastern white pine; jack pine; red pine	---	---
WmC:					
Westmoreland	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
Coshocton	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
WmD:					
Westmoreland	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
Coshocton	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak
WoA:					
Wick	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	Austrian pine; blue spruce; eastern arborvitae; Washington hawthorn; white fir	eastern white pine; Norway spruce	pin oak
ZeA:					
Zepernick	silky dogwood	American cranberrybush; Amur honeysuckle; Amur privet	blue spruce; eastern arborvitae; Washington hawthorn; white fir	Austrian pine; Norway spruce	eastern white pine; pin oak

TABLE 16.—RECREATION PART 1

(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 potential limitation. See text on page 229 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
AmF:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
BkB:						
Berks	Somewhat limited		Somewhat limited		Very limited	
	Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
					Slope	0.50
					Depth to bedrock	0.06
BkC:						
Berks	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
	Gravel content	0.27	Gravel content	0.27	Gravel content	1.00
					Depth to bedrock	0.95
BkD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
					Depth to bedrock	0.90
BkE:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.22	Gravel content	0.22	Gravel content	1.00
					Depth to bedrock	0.97
					Large stones content	0.01
BmB:						
Berks	Somewhat limited		Somewhat limited		Very limited	
	Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
					Depth to bedrock	0.97
					Slope	0.50
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
	Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
					Depth to bedrock	0.97
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
					Depth to bedrock	0.95
Urban Land	Not rated		Not rated		Not rated	

TABLE 16.—RECREATION PART 1--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
BpF:						
Bethesda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Gravel content	1.00
	Gravel content	1.00	Gravel content	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Large stones content	0.32
					Restricted permeability	0.21
BsC2:						
Bogart	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	0.16	Slope	0.16	Slope	1.00
					Gravel content	0.92
BtA:						
Bogart	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.84	Depth to saturated zone	1.00
					Gravel content	0.50
BtB:						
Bogart	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.89	Depth to saturated zone	1.00
					Slope	0.50
					Gravel content	0.50
BtC:						
Bogart	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.16	Slope	0.16	Depth to saturated zone	0.99
					Gravel content	0.50
CaA:						
Calcutta	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	0.21	Restricted permeability	0.21	Restricted permeability	0.21
CcB:						
Canfield	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.84	Depth to saturated zone	1.00
					Slope	0.50
CcC:						
Canfield	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.16	Slope	0.16	Depth to saturated zone	0.99
CcD:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
	Slope	1.00	Depth to saturated zone	0.84	Slope	1.00
CcE:						
Canfield	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.93	Depth to saturated zone	0.58	Depth to saturated zone	0.93

TABLE 16.—RECREATION PART 1--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
CeA:						
Carlisle	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	Organic matter content	1.00
	Organic matter content	1.00	Organic matter content	1.00	Ponding	1.00
CfD2:						
Chili	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.06
ChA:						
Chili	Not limited		Not limited		Somewhat limited	
					Gravel content	0.06
ChB:						
Chili	Not limited		Not limited		Somewhat limited	
					Slope	0.50
					Gravel content	0.06
ChC:						
Chili	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.16	Slope	0.16	Slope	1.00
					Gravel content	0.06
CmB:						
Conotton	Somewhat limited		Somewhat limited		Very limited	
	Gravel content	0.27	Gravel content	0.27	Gravel content	1.00
					Slope	0.50
CmC:						
Conotton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
	Gravel content	0.27	Gravel content	0.27	Gravel content	1.00
CoB:						
Coshocton	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
					Gravel content	0.04
CoC:						
Coshocton	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.40	Slope	0.40	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.06
CoD:						
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.04
DAM:						
Dam	Not rated		Not rated		Not rated	

TABLE 16.—RECREATION PART 1--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
DgA:						
Doles	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	0.21	Restricted permeability	0.21	Restricted permeability	0.21
ErC:						
Ernest	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.84	Depth to saturated zone	1.00
	Slope	0.40	Slope	0.40	Slope	1.00
					Gravel content	0.45
ErD:						
Ernest	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.93	Depth to saturated zone	0.58	Depth to saturated zone	0.93
					Gravel content	0.45
FbB:						
Fairpoint	Very limited		Very limited		Very limited	
	Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
					Large stones content	0.03
FbD:						
Fairpoint	Very limited		Very limited		Very limited	
	Gravel content	1.00	Gravel content	1.00	Gravel content	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Large stones content	0.03
FbF:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Gravel content	1.00
	Gravel content	1.00	Gravel content	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Large stones content	0.03
FcB:						
Fairpoint	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
					Gravel content	0.20
FcD:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.18
FdA:						
Fitchville	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	0.21	Restricted permeability	0.21	Restricted permeability	0.21

TABLE 16.—RECREATION PART 1--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
FdB:						
Fitchville	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	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
FeA:						
Fluvaquents	Not rated		Not rated		Not rated	
FnC2:						
Fredericktown	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
	Gravel content	0.32	Gravel content	0.32	Gravel content	1.00
FnD2:						
Fredericktown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.32	Gravel content	0.32	Gravel content	1.00
FoB:						
Fredericktown	Not limited		Not limited		Somewhat limited	
					Gravel content	0.94
					Slope	0.50
FrA:						
Frenchtown	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
GaB:						
Gavers	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	0.43	Restricted permeability	0.43	Slope	0.50
					Restricted permeability	0.43
GeC:						
Germano	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
					Gravel content	0.45
					Depth to bedrock	0.20
GeD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.45
					Depth to bedrock	0.06
GnB:						
Gilpin	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.97
					Slope	0.50
					Gravel content	0.06
GnC:						
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
					Depth to bedrock	0.84
					Gravel content	0.06
GnD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.46
					Gravel content	0.06

TABLE 16.—RECREATION PART 1--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
GoC:						
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
					Depth to bedrock	0.65
					Gravel content	0.06
Coshocton	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.40	Slope	0.40	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.06
GoD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to bedrock	0.65
					Gravel content	0.06
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.04
GpC:						
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
					Depth to bedrock	0.46
					Gravel content	0.06
Coshocton	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.40	Slope	0.40	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.06
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	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	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
GrC:						
Glenford	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.97	Depth to saturated zone	1.00
	Slope	0.40	Slope	0.40	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

TABLE 16.—RECREATION PART 1--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
GuC:						
Guernsey	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.89	Depth to saturated zone	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	1.00
	Slope	0.40	Slope	0.40	Restricted permeability	0.43
					Gravel content	0.22
GuC2:						
Guernsey	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	0.43	Restricted permeability	0.43	Slope	1.00
	Slope	0.40	Slope	0.40	Restricted permeability	0.43
					Gravel content	0.22
GuD:						
Guernsey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
	Slope	1.00	Depth to saturated zone	0.99	Slope	1.00
	Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
					Gravel content	0.22
HeB:						
Hazleton	Not limited		Not limited		Somewhat limited	
					Gravel content	0.99
					Slope	0.50
HeC:						
Hazleton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
					Gravel content	0.99
HeD:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.99
HeE:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.99
					Large stones content	0.01
HfF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.99
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.99
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.05	Gravel content	0.05	Gravel content	1.00

TABLE 16.—RECREATION PART 1--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
HkA:						
Holly	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
HlB:						
Homewood	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
	Depth to saturated zone	0.75	Depth to saturated zone	0.38	Depth to saturated zone	0.75
					Slope	0.50
HmA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
HmB:						
Homeworth	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	0.50
HoA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
HoB:						
Homeworth	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	0.50
JwA:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Gravel content	0.06
JwB:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.50
					Gravel content	0.06
KeB:						
Keene	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Restricted permeability	0.43	Restricted permeability	0.43	Slope	0.50
					Restricted permeability	0.43
KnB:						
Kensington	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Depth to saturated zone	0.99
					Slope	0.50

TABLE 16.—RECREATION PART 1--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
KnC:						
Kensington	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.47	Slope	0.40	Slope	1.00
	Slope	0.40	Depth to saturated zone	0.21	Depth to saturated zone	0.47
KnD:						
Kensington	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.47	Depth to saturated zone	0.21	Depth to saturated zone	0.47
LbA:						
Lobdell	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.89	Depth to saturated zone	1.00
	Flooding	1.00			Flooding	0.60
LnA:						
Lorain	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	1.00	Restricted permeability	1.00	Restricted permeability	1.00
McB:						
Mechanicsburg	Not limited		Not limited		Somewhat limited	
					Slope	0.50
McC:						
Mechanicsburg	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
MnB:						
Morristown	Somewhat limited		Somewhat limited		Somewhat limited	
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
MnD:						
Morristown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
MoB:						
Morristown	Somewhat limited		Somewhat limited		Very limited	
	Gravel content	0.26	Gravel content	0.26	Gravel content	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Slope	0.50
					Restricted permeability	0.21
					Large stones content	0.03
MoD:						
Morristown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.26	Gravel content	0.26	Gravel content	1.00
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Large stones content	0.03

TABLE 16.—RECREATION PART 1--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
OdA:						
Olmsted	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
Valley	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	0.99	Restricted permeability	0.99	Restricted permeability	0.99
OmB:						
Omulga	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.69	Depth to saturated zone	0.98
					Slope	0.50
OmC:						
Omulga	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.40	Slope	0.40	Depth to saturated zone	0.99
OrA:						
Orrville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00			Flooding	0.60
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.58	Depth to saturated zone	0.93
					Slope	0.50
RaC2:						
Rainsboro	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.16	Slope	0.16	Depth to saturated zone	0.99
RbC:						
Rainsboro	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
	Depth to saturated zone	0.87	Depth to saturated zone	0.50	Restricted permeability	0.96
	Slope	0.16	Slope	0.16	Depth to saturated zone	0.87
					Large stones content	0.03
ReA:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

TABLE 16.—RECREATION PART 1--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
ReB:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.50
RhD:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.33
					Large stones content	0.03
RhE:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.30	Depth to saturated zone	0.14	Gravel content	0.43
					Depth to saturated zone	0.30
RsB:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
					Slope	0.50
RsC:						
Rittman	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.97	Depth to saturated zone	1.00
	Slope	0.16	Slope	0.16	Slope	1.00
RsD2:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
TeB:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.50
TeC:						
Teegarden	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.97	Depth to saturated zone	1.00
	Slope	0.40	Slope	0.40	Slope	1.00
TeC2:						
Teegarden	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.97	Depth to saturated zone	1.00
	Slope	0.40	Slope	0.40	Slope	1.00
ToA:						
Tioga	Very limited		Not limited		Somewhat limited	
	Flooding	1.00			Flooding	0.60
Ua:						
Udorthents	Not rated		Not rated		Not rated	
Ub:						
Udorthents	Not rated		Not rated		Not rated	
Uc:						
Udorthents	Not rated		Not rated		Not rated	
Pits	Not rated		Not rated		Not rated	

TABLE 16.—RECREATION PART 1--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
UkC2:						
Upshur	Somewhat limited		Somewhat limited		Very limited	
	Restricted permeability	0.96	Restricted permeability	0.96	Slope	1.00
	Slope	0.40	Slope	0.40	Restricted permeability	0.96
Berks	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.40	Slope	0.40	Slope	1.00
	Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
					Depth to bedrock	0.90
UkD2:						
Upshur	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
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.27	Gravel content	0.27	Gravel content	1.00
					Depth to bedrock	0.97
UkE2:						
Upshur	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
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
					Depth to bedrock	0.97
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.47	Depth to saturated zone	0.21	Slope	0.50
					Depth to saturated zone	0.47
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.93	Depth to saturated zone	0.58	Slope	1.00
	Slope	0.16	Slope	0.16	Depth to saturated zone	0.93
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Not limited		Not limited		Somewhat limited	
					Slope	0.50
					Gravel content	0.06

TABLE 16.—RECREATION PART 1--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
VaA:						
Valley	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	0.99	Restricted permeability	0.99	Restricted permeability	0.99
VbA:						
Valley	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	0.99	Restricted permeability	0.99	Restricted permeability	0.99
VcA:						
Valley	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	0.99	Restricted permeability	0.99	Restricted permeability	0.99
Lorain	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	1.00	Restricted permeability	1.00	Restricted permeability	1.00
VnB:						
Vandergrift	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
					Slope	0.50
VnC:						
Vandergrift	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	Slope	1.00
	Slope	0.40	Slope	0.40	Restricted permeability	0.96
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
WaB:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.50

TABLE 16.—RECREATION PART 1--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
WkE:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.20
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.22	Gravel content	0.22	Gravel content	1.00
					Depth to bedrock	0.90
					Large stones content	0.01
WkF:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
					Depth to bedrock	0.97
WmC:						
Westmoreland	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.55	Slope	0.55	Slope	1.00
Coshocton	Very limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Slope	1.00
	Slope	0.55	Slope	0.55	Depth to saturated zone	0.99
					Gravel content	0.04
WmD:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	0.76	Depth to saturated zone	0.99
	Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
					Gravel content	0.04
WoA:						
Wick	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
ZeA:						
Zepernick	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Flooding	1.00			Flooding	0.60

TABLE 17.—RECREATION PART 2

(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 potential limitation. See text on page 229 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
AmF:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
BkB:						
Berks	Not limited		Not limited		Somewhat limited	
					Droughty	0.68
					Gravel content	0.25
					Depth to bedrock	0.06
BkC:						
Berks	Not limited		Not limited		Very limited	
					Droughty	1.00
					Depth to bedrock	0.95
					Gravel content	0.27
					Slope	0.26
BkD:						
Berks	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.90
					Gravel content	0.25
BkE:						
Berks	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.66	Slope	1.00
					Droughty	0.99
					Depth to bedrock	0.97
					Gravel content	0.22
					Large stones content	0.01
BmB:						
Berks	Not limited		Not limited		Very limited	
					Droughty	1.00
					Depth to bedrock	0.97
					Gravel content	0.25
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Not limited		Not limited		Very limited	
					Droughty	1.00
					Depth to bedrock	0.97
					Slope	0.26
					Gravel content	0.25
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.95
					Gravel content	0.25
Urban Land	Not rated		Not rated		Not rated	

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BpF:						
Bethesda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	1.00
					Droughty	0.62
					Large stones content	0.32
BsC2:						
Bogart	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.04
BtA:						
Bogart	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.62	Depth to saturated zone	0.62	Depth to saturated zone	0.83
BtB:						
Bogart	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
BtC:						
Bogart	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
					Slope	0.04
CaA:						
Calcutta	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
CcB:						
Canfield	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.62	Depth to saturated zone	0.62	Depth to saturated zone	0.83
CcC:						
Canfield	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.04
CcD:						
Canfield	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Depth to saturated zone	0.62	Depth to saturated zone	0.62	Depth to saturated zone	0.83
	Slope	0.19			Droughty	0.01
CcE:						
Canfield	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.32	Depth to saturated zone	0.56
	Depth to saturated zone	0.18	Depth to saturated zone	0.18		
CeA:						
Carlisle	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CfD2:						
Chili	Somewhat limited		Not limited		Very limited	
	Slope	0.19			Slope	1.00
ChA:						
Chili	Not limited		Not limited		Not limited	
ChB:						
Chili	Not limited		Not limited		Not limited	
ChC:						
Chili	Not limited		Not limited		Somewhat limited	
					Slope	0.04
CmB:						
Conotton	Not limited		Not limited		Somewhat limited	
					Gravel content	0.27
					Droughty	0.06
CmC:						
Conotton	Not limited		Not limited		Somewhat limited	
					Gravel content	0.27
					Slope	0.26
					Droughty	0.10
CoB:						
Coshocton	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
CoC:						
Coshocton	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.26
CoD:						
Coshocton	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.70	Depth to saturated zone	0.44	Depth to saturated zone	0.75
	Depth to saturated zone	0.44				
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
ErC:						
Ernest	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.83
	Depth to saturated zone	0.62	Depth to saturated zone	0.62	Slope	0.26
					Droughty	0.08
ErD:						
Ernest	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.70	Depth to saturated zone	0.18	Depth to saturated zone	0.56
	Depth to saturated zone	0.18				

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FbB:						
Fairpoint	Not limited		Not limited		Very limited	
					Gravel content	1.00
					Droughty	0.44
					Large stones content	0.03
FbD:						
Fairpoint	Somewhat limited		Not limited		Very limited	
	Slope	0.24			Gravel content	1.00
					Slope	1.00
					Droughty	0.51
					Large stones content	0.03
FbF:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	1.00
					Droughty	0.51
					Large stones content	0.03
FcB:						
Fairpoint	Not limited		Not limited		Somewhat limited	
					Droughty	0.19
FcD:						
Fairpoint	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.24			Droughty	0.19
FdA:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
FdB:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
FeA:						
Fluvaquents	Not rated		Not rated		Not rated	
FnC2:						
Fredericktown	Not limited		Not limited		Somewhat limited	
					Gravel content	0.32
					Slope	0.26
FnD2:						
Fredericktown	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Gravel content	0.32
FoB:						
Fredericktown	Not limited		Not limited		Not limited	
FrA:						
Frenchtown	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
GaB:						
Gavers	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

TABLE 17.—RECREATION PART 2--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
GeC:						
Germano	Not limited		Not limited		Somewhat limited	
					Slope	0.26
					Depth to bedrock	0.20
GeD:						
Germano	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Depth to bedrock	0.06
					Droughty	0.01
GnB:						
Gilpin	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.97
					Droughty	0.34
GnC:						
Gilpin	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.84
					Slope	0.26
					Droughty	0.10
GnD:						
Gilpin	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Depth to bedrock	0.46
GoC:						
Gilpin	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.65
					Slope	0.26
					Droughty	0.05
Coshocton	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.26
GoD:						
Gilpin	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Depth to bedrock	0.65
					Droughty	0.01
GpC:						
Gilpin	Not limited		Not limited		Somewhat limited	
					Depth to bedrock	0.46
					Slope	0.26
Coshocton	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.26
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
GrC:						
Glenford	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.96
	Depth to saturated zone	0.92	Depth to saturated zone	0.92	Slope	0.26

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GuC:						
Guernsey	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.88
	Depth to saturated zone	0.73	Depth to saturated zone	0.73	Slope	0.26
GuC2:						
Guernsey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Water erosion	1.00	Water erosion	1.00	Slope	0.26
GuD:						
Guernsey	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Depth to saturated zone	0.98	Depth to saturated zone	0.98	Depth to saturated zone	0.99
	Slope	0.70				
HeB:						
Hazleton	Not limited		Not limited		Not limited	
HeC:						
Hazleton	Not limited		Not limited		Somewhat limited	
					Slope	0.26
HeD:						
Hazleton	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
HeE:						
Hazleton	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.66	Slope	1.00
					Large stones content	0.01
HfF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	0.01
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Gravel content	0.05
HkA:						
Holly	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
HlB:						
Homewood	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to saturated zone	0.35
HmA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HmB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
HoA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
HoB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
JwA:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
JwB:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
KeB:						
Keene	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
KnB:						
Kensington	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
KnC:						
Kensington	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.26
					Depth to saturated zone	0.19
KnD:						
Kensington	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.70			Depth to saturated zone	0.19
LbA:						
Lobdell	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
					Flooding	0.60
LnA:						
Lorain	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
McB:						
Mechanicsburg	Not limited		Not limited		Not limited	
McC:						
Mechanicsburg	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.26
MnB:						
Morristown	Not limited		Not limited		Somewhat limited	
					Droughty	0.14
MnD:						
Morristown	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.24			Droughty	0.31

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MoB:						
Morristown	Not limited		Not limited		Somewhat limited	
					Droughty	0.58
					Gravel content	0.26
					Large stones content	0.03
MoD:						
Morristown	Somewhat limited		Not limited		Very limited	
	Slope	0.24			Slope	1.00
					Droughty	0.61
					Gravel content	0.26
					Large stones content	0.03
OdA:						
Olmsted	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
Valley	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
OmB:						
Omulga	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.32	Depth to saturated zone	0.32	Depth to saturated zone	0.68
OmC:						
Omulga	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.26
OrA:						
Orrville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Flooding	0.60
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
RaC2:						
Rainsboro	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.04
RbC:						
Rainsboro	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.48
	Depth to saturated zone	0.11	Depth to saturated zone	0.11	Slope	0.04
					Large stones content	0.03

TABLE 17.—RECREATION PART 2--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
ReA:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
ReB:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
RhD:						
Richland	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.70			Large stones content	0.03
RhE:						
Richland	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.66	Depth to saturated zone	0.12
RsB:						
Rittman	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.98	Depth to saturated zone	0.98	Depth to saturated zone	0.99
					Droughty	0.01
RsC:						
Rittman	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.96
	Depth to saturated zone	0.92	Depth to saturated zone	0.92	Slope	0.04
RsD2:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.19			Droughty	0.17
TeB:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
TeC:						
Teegarden	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.96
	Depth to saturated zone	0.92	Depth to saturated zone	0.92	Slope	0.26
TeC2:						
Teegarden	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.96
	Depth to saturated zone	0.92	Depth to saturated zone	0.92	Slope	0.26
ToA:						
Tioga	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
Ua:						
Udorthents	Somewhat limited		Not limited		Not rated	
	Slope	0.03				
Ub:						
Udorthents	Somewhat limited		Not limited		Not rated	
	Slope	0.03				

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Uc:						
Udorthents	Very limited		Somewhat limited		Not rated	
	Slope	1.00	Slope	0.80		
Pits	Not rated		Not rated		Not rated	
UkC2:						
Upshur	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.26
Berks	Not limited		Not limited		Very limited	
					Droughty	1.00
					Depth to bedrock	0.90
					Slope	0.26
					Gravel content	0.25
UkD2:						
Upshur	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.70				
Berks	Somewhat limited		Not limited		Very limited	
	Slope	0.70			Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.97
					Gravel content	0.27
UkE2:						
Upshur	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.66		
Berks	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.66	Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.97
					Gravel content	0.25
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Not limited		Not limited		Somewhat limited	
					Depth to saturated zone	0.19
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.56
	Depth to saturated zone	0.18	Depth to saturated zone	0.18	Slope	0.04
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Not limited		Not limited		Not limited	
VaA:						
Valley	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

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
VbA:						
Valley	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
VcA:						
Valley	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
Lorain	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
VnB:						
Vandergrift	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
VnC:						
Vandergrift	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.86	Depth to saturated zone	0.86	Depth to saturated zone	0.94
					Slope	0.26
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
WaB:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
WkE:						
Westmoreland	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	0.66		
Berks	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Slope	0.66	Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.90
					Gravel content	0.22
					Large stones content	0.01
WkF:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Droughty	1.00
					Depth to bedrock	0.97
					Gravel content	0.25

TABLE 17.—RECREATION PART 2--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WmC:						
Westmoreland	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.50
Coshocton	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.50
WmD:						
Westmoreland	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.70				
Coshocton	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	0.70	Depth to saturated zone	0.44	Depth to saturated zone	0.75
	Depth to saturated zone	0.44				
WoA:						
Wick	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
ZeA:						
Zepernick	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Flooding	0.60

TABLE 18.--WILDLIFE HABITAT

(See text on page 231 for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable.)

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
AmF:										
Amanda	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
BkB:										
Berks	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
BkC:										
Berks	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
BkD:										
Berks	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
BkE:										
Berks	Very poor.	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
BmB:										
Berks	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
BmC:										
Berks	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
BmD:										
Berks	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
BpF:										
Bethesda	Very poor.	Very poor.	Poor	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
BsC2:										
Bogart	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
BtA:										
Bogart	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BtB:										
Bogart	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
BtC:										
Bogart	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CaA:										
Calcutta	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CcB:										
Canfield	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CcC:										
Canfield	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CcD:										
Canfield	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
CcE:										
Canfield	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
CeA:										
Carlisle	Fair	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
CfD2:										
Chili	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
ChA:										
Chili	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ChB:										
Chili	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
ChC:										
Chili	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 18.--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
CmB:										
Conotton----------	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
CmC:										
Conotton----------	Fair	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
CoB:										
Coshocton---------	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
CoC:										
Coshocton---------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
CoD:										
Coshocton---------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
DgA:										
Doles----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
ErC:										
Ernest----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
ErD:										
Ernest----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
FbB:										
Fairpoint---------	Very poor.	Very poor.	Poor	Poor	Poor	Poor	Very poor.	Very poor.	Poor	Very poor.
FbD:										
Fairpoint---------	Very poor.	Very poor.	Poor	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
FbF:										
Fairpoint---------	Very poor.	Very poor.	Poor	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
FcB:										
Fairpoint---------	Fair	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
FcD:										
Fairpoint---------	Poor	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
FdA:										
Fitchville--------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
FdB:										
Fitchville--------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FeA:										
Fluvaquents-------	Very poor.	Very poor.	Poor	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
FnC2:										
Fredericktown-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
FnD2:										
Fredericktown-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
FoB:										
Fredericktown-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
FrA:										
Frenchtown--------	Poor	Fair	Good	Fair	Fair	Good	Good	Fair	Fair	Good.
GaB:										
Gavers----------	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
GeC:										
Germano----------	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GeD:										
Germano----------	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
GnB:										
Gilpin----------	Fair	Good	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.

Table 18.--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
GnC:										
Gilpin	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
GnD:										
Gilpin	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
GoC:										
Gilpin	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
Coshocton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GoD:										
Gilpin	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Coshocton	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
GpC:										
Gilpin	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
Coshocton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GrB:										
Glenford	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
GrC:										
Glenford	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GuC:										
Guernsey	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GuC2:										
Guernsey	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
GuD:										
Guernsey	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
HeB:										
Hazleton	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
HeC:										
Hazleton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
HeD:										
Hazleton	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Fair	Very poor.
HeE:										
Hazleton	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Fair	Very poor.
HfF:										
Hazleton	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.
HgF:										
Hazleton	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.
Westmoreland	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
HkA:										
Holly	Fair	Fair	Poor	Fair	Fair	Good	Good	Fair	Fair	Good.
HlB:										
Homewood	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
HmA:										
Homeworth	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
HmB:										
Homeworth	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 18.--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
HoA:										
Homeworth	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
HoB:										
Homeworth	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
JwA:										
Jimtown	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
JwB:										
Jimtown	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
KeB:										
Keene	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
KnB:										
Kensington	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
KnC:										
Kensington	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
KnD:										
Kensington	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
LbA:										
Lobdell	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
LnA:										
Lorain	Fair	Fair	Poor	Poor	Poor	Good	Good	Fair	Poor	Good.
McB:										
Mechanicsburg	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
McC:										
Mechanicsburg	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
MnB:										
Morristown	Fair	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
MnD:										
Morristown	Poor	Poor	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
MoB:										
Morristown	Very poor.	Very poor.	Poor	Poor	Poor	Poor	Very poor.	Very poor.	Poor	Very poor.
MoD:										
Morristown	Very poor.	Very poor.	Poor	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
OdA:										
Olmsted	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Valley	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
OmB:										
Omulga	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
OmC:										
Omulga	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
OrA:										
Orrville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
RaB:										
Rainsboro	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
RaC2:										
Rainsboro	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
RbC:										
Rainsboro	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 18.--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
ReA:										
Ravenna	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
ReB:										
Ravenna	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
RhD:										
Richland	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
RhE:										
Richland	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
RsB:										
Rittman	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
RsC:										
Rittman	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
RsD2:										
Rittman	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
TeB:										
Teegarden	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
TeC:										
Teegarden	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
TeC2:										
Teegarden	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
ToA:										
Tioga	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Ua:										
Udorthents	Very poor.	Very poor.	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
UkC2:										
Upshur	Fair	Good	Fair	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Berks	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
UkD2:										
Upshur	Poor	Fair	Fair	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Berks	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
UkE2:										
Upshur	Very poor.	Fair	Fair	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Berks	Very poor.	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
UtB:										
Canfield	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
UtC:										
Canfield	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
UvB:										
Chili	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
VaA:										
Valley	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
VbA:										
Valley	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.

Table 18.--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
VcA:										
Valley	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
Lorain	Fair	Fair	Poor	Poor	Poor	Good	Good	Fair	Poor	Good.
VnB:										
Vandergrift	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
VnC:										
Vandergrift	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
WaA:										
Wadsworth	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
WaB:										
Wadsworth	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
WkE:										
Westmoreland	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Berks	Very poor.	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
WkF:										
Westmoreland	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Berks	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
WmC:										
Westmoreland	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Coshocton	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
WmD:										
Westmoreland	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Coshocton	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
WoA:										
Wick	Poor	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Good.
ZeA:										
Zepernick	Poor	Poor	Poor	Poor	Poor	Fair	Fair	Fair	Fair	Fair.

TABLE 19.--CONSTRUCTION MATERIALS PART 1

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text on page 234 for further explanation of ratings in this table.)

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
AmF:				
Amanda	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BkB:				
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BkC:				
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BkD:				
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BkE:				
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BmB:				
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Urban Land	Not rated		Not rated	
BmC:				
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Urban Land	Not rated		Not rated	
BmD:				
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Urban Land	Not rated		Not rated	
BpF:				
Bethesda	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BsC2:				
Bogart	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BtA:				
Bogart	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
BtB:				
Bogart	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
BtC:				
Bogart	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CaA:				
Calcutta	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CcB:				
Canfield	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CcC:				
Canfield	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CcD:				
Canfield	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CcE:				
Canfield	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CeA:				
Carlisle	Not rated		Not rated	
	Bottom layer	0.00	Bottom layer	0.00
CfD2:				
Chili	Good		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	1.00	Bottom layer	0.94
ChA:				
Chili	Good		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	1.00	Bottom layer	0.77
ChB:				
Chili	Good		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	1.00	Bottom layer	0.77
ChC:				
Chili	Good		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	1.00	Bottom layer	0.77
CmB:				
Conotton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CmC:				
Conotton	Good		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	1.00	Bottom layer	0.77
CoB:				
Coshocton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CoC:				
Coshocton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
CoD:				
Coshocton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
DAM:				
Dam	Not rated		Not rated	
DgA:				
Doles	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ErC:				
Ernest	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ErD:				
Ernest	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FbB:				
Fairpoint	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FbD:				
Fairpoint	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FbF:				
Fairpoint	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FcB:				
Fairpoint	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FcD:				
Fairpoint	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FdA:				
Fitchville	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FdB:				
Fitchville	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FeA:				
Fluvaquents	Not rated		Not rated	
FnC2:				
Fredericktown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FnD2:				
Fredericktown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FoB:				
Fredericktown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
FrA:				
Frenchtown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
GaB:				
Gavers	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GeC:				
Germano	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GeD:				
Germano	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GnB:				
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GnC:				
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GnD:				
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GoC:				
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Coshocton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GoD:				
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Coshocton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GpC:				
Gilpin	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Coshocton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Urban Land	Not rated		Not rated	
GrB:				
Glenford	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GrC:				
Glenford	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GuC:				
Guernsey	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
GuC2:				
Guernsey	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
GuD:				
Guernsey	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HeB:				
Hazleton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HeC:				
Hazleton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HeD:				
Hazleton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HeE:				
Hazleton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HfF:				
Hazleton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Rock Outcrop	Not rated		Not rated	
HgF:				
Hazleton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Westmoreland	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HkA:				
Holly	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HlB:				
Homewood	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HmA:				
Homeworth	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HmB:				
Homeworth	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HoA:				
Homeworth	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
HoB:				
Homeworth	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
JwA:				
Jimtown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
JwB:				
Jimtown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
KeB:				
Keene	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
KnB:				
Kensington	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
KnC:				
Kensington	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
KnD:				
Kensington	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
LbA:				
Lobdell	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
LnA:				
Lorain	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
McB:				
Mechanicsburg	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
McC:				
Mechanicsburg	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
MnB:				
Morristown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
MnD:				
Morristown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
MoB:				
Morristown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
MoD:				
Morristown	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
OdA:				
Olmsted	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Valley	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
OmB:				
Omulga	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
OmC:				
Omulga	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
OrA:				
Orrville	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Pg:				
Pits	Not rated		Not rated	
RaB:				
Rainsboro	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
RaC2:				
Rainsboro	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
RbC:				
Rainsboro	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ReA:				
Ravenna	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ReB:				
Ravenna	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
RhD:				
Richland	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
RhE:				
Richland	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
RsB:				
Rittman	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
RsC:				
Rittman	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
RsD2:				
Rittman	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
TeB:				
Teegarden	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
TeC:				
Teegarden	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
TeC2:				
Teegarden	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ToA:				
Tioga	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ua:				
Udorthents	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ub:				
Udorthents	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Uc:				
Udorthents	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Pits	Not rated		Not rated	
UkC2:				
Upshur	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UkD2:				
Upshur	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UkE2:				
Upshur	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Ur:				
Urban Land	Not rated		Not rated	

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
UtB:				
Urban Land	Not rated		Not rated	
Canfield	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UtC:				
Urban Land	Not rated		Not rated	
Canfield	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
UvB:				
Urban Land	Not rated		Not rated	
Chili	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
VaA:				
Valley	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
VbA:				
Valley	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
VcA:				
Valley	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Lorain	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
VnB:				
Vandergrift	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
VnC:				
Vandergrift	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
W:				
Water	Not rated		Not rated	
WaA:				
Wadsworth	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
WaB:				
Wadsworth	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
WkE:				
Westmoreland	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 19.--CONSTRUCTION MATERIALS PART 1--Continued

Map symbol and soil name	Potential source of gravel		Potential source of sand	
	Rating class	Value	Rating class	Value
WkF:				
Westmoreland	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Berks	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
WmC:				
Westmoreland	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Coshocton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
WmD:				
Westmoreland	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
Coshocton	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
WoA:				
Wick	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00
ZeA:				
Zepernick	Poor		Poor	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.00

TABLE 20.--CONSTRUCTION MATERIALS PART 2

(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 on page 234 for further explanation of ratings in this table.)

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
AmF:						
Amanda	Fair		Fair		Poor	
	Organic matter content low	0.64	Shrink-swell	0.87	Slope	0.00
	Water erosion	0.99			Rock fragments	0.96
					Too acid	0.99
BkB:						
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.93	Slope	0.00	Too acid	0.92
					Depth to bedrock	0.93
BkC:						
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.05	Slope	0.00	Depth to bedrock	0.05
					Slope	0.74
					Too acid	0.92
BkD:						
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.10	Slope	0.50	Rock fragments	0.00
					Depth to bedrock	0.10
					Too acid	0.92
BkE:						
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.03	Cobble content	0.92	Rock fragments	0.00
					Depth to bedrock	0.03
					Too acid	0.92
BmB:						
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.03	Slope	0.00	Depth to bedrock	0.03
	No organic matter limitation	0.99			Too acid	0.92
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.03	Slope	0.00	Depth to bedrock	0.03
	No organic matter limitation	0.99	Cobble content	0.97	Slope	0.74
					Too acid	0.92
Urban Land	Not rated		Not rated		Not rated	

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
BmD:						
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.05	Slope	0.50	Rock fragments	0.00
	Organic matter content low	0.99	Cobble content	0.87	Depth to bedrock	0.05
					Too acid	0.92
Urban Land	Not rated		Not rated		Not rated	
BpF:						
Bethesda	Fair		Fair		Poor	
	Organic matter content low	0.12	Cobble content	0.17	Slope	0.00
	Too acid	0.68			Hard to reclaim (dense layer)	0.00
	Cobble content	0.93			Rock fragments	0.00
	Droughty	0.99			Hard to reclaim (rock fragments)	0.00
					Too acid	0.59
BsC2:						
Bogart	Good		Poor		Poor	
			Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Rock fragments	0.00
					Slope	0.96
					Hard to reclaim (rock fragments)	0.99
BtA:						
Bogart	Good		Poor		Fair	
			Slope	0.00	Rock fragments	0.01
			Wetness depth	0.09	Wetness depth	0.09
BtB:						
Bogart	Fair		Poor		Poor	
	Organic matter content low	0.81	Slope	0.00	Rock fragments	0.00
			Wetness depth	0.07	Wetness depth	0.07
					Hard to reclaim (rock fragments)	0.55
BtC:						
Bogart	Good		Poor		Poor	
			Slope	0.00	Rock fragments	0.00
			Wetness depth	0.14	Wetness depth	0.14
					Too acid	0.95
					Slope	0.96
CaA:						
Calcutta	Poor		Poor		Poor	
	Too acid	0.00	Wetness depth	0.00	Wetness depth	0.00
	Droughty	0.92	Slope	0.00	Hard to reclaim (rock fragments)	0.00
			Low strength	0.00	Too acid	0.20
			Shrink-swell	0.87		
CcB:						
Canfield	Fair		Poor		Fair	
	Droughty	0.35	Slope	0.00	Hard to reclaim (dense layer)	0.03
	Water erosion	0.99	Wetness depth	0.09	Wetness depth	0.09
					Too acid	0.99
CcC:						
Canfield	Fair		Poor		Fair	
	Droughty	0.65	Slope	0.00	Wetness depth	0.14
	Water erosion	0.99	Wetness depth	0.14	Hard to reclaim (dense layer)	0.16
					Slope	0.96
					Too acid	0.99

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
CcD:						
Canfield	Fair		Fair		Poor	
	Droughty	0.19	Slope	0.02	Slope	0.00
	Water erosion	0.99	Wetness depth	0.09	Hard to reclaim (dense layer)	0.01
					Wetness depth	0.09
					Too acid	0.99
CcE:						
Canfield	Fair		Fair		Poor	
	Droughty	0.67	Wetness depth	0.24	Slope	0.00
	Water erosion	0.99			Hard to reclaim (dense layer)	0.20
					Wetness depth	0.24
					Too acid	0.97
CeA:						
Carlisle	Not rated		Poor		Not rated	
	Wind erosion	0.00	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Organic matter content high	0.00
CfD2:						
Chili	Fair		Fair		Poor	
	No organic matter limitation	0.99	Slope	0.02	Slope	0.00
					Rock fragments	0.08
ChA:						
Chili	Fair		Poor		Poor	
	Organic matter content low	0.99	Slope	0.00	Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.95
ChB:						
Chili	Good		Poor		Poor	
			Slope	0.00	Rock fragments	0.00
ChC:						
Chili	Fair		Poor		Fair	
	Organic matter content low	0.92	Slope	0.00	Rock fragments	0.20
					Hard to reclaim (rock fragments)	0.25
					Slope	0.96
CmB:						
Conotton	Good		Poor		Poor	
			Slope	0.00	Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.68
CmC:						
Conotton	Fair		Poor		Poor	
	Organic matter content low	0.80	Slope	0.00	Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.00
					Slope	0.74
CoB:						
Coshocton	Fair		Poor		Fair	
	Organic matter content low	0.66	Slope	0.00	Wetness depth	0.14
	Too acid	0.68	Low strength	0.00	Hard to reclaim (rock fragments)	0.65
	Water erosion	0.99	Wetness depth	0.14	Too acid	0.79
			Shrink-swell	0.89	Rock fragments	0.94

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
CoC:						
Coshocton	Fair		Poor		Fair	
	Too acid	0.68	Slope	0.00	Wetness depth	0.14
	Organic matter content low	0.91	Wetness depth	0.14	Hard to reclaim (rock fragments)	0.43
	Water erosion	0.99	Low strength	0.22	Slope	0.74
			Depth to bedrock	0.74	Too acid	0.79
			Shrink-swell	0.89	Rock fragments	0.80
CoD:						
Coshocton	Fair		Poor		Poor	
	Organic matter content low	0.43	Low strength	0.00	Slope	0.00
	Too acid	0.68	Wetness depth	0.14	Wetness depth	0.14
	Water erosion	0.99	Slope	0.50	Too acid	0.67
			Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.79
					Rock fragments	0.94
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Fair		Poor		Poor	
	Water erosion	0.90	Wetness depth	0.00	Wetness depth	0.00
	Droughty	0.99	Slope	0.00	Too acid	0.99
			Low strength	0.00		
			Shrink-swell	0.97		
ErC:						
Ernest	Fair		Poor		Fair	
	Droughty	0.09	Slope	0.00	Wetness depth	0.09
	Water erosion	0.90	Low strength	0.00	Rock fragments	0.42
			Wetness depth	0.09	Slope	0.74
			Shrink-swell	0.87	Too acid	0.97
ErD:						
Ernest	Fair		Poor		Poor	
	Too acid	0.50	Low strength	0.00	Slope	0.00
	Droughty	0.83	Wetness depth	0.24	Wetness depth	0.24
	Water erosion	0.90	Slope	0.50	Rock fragments	0.46
			Shrink-swell	0.95	Too acid	0.50
FbB:						
Fairpoint	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Hard to reclaim (rock fragments)	0.00
			Cobble content	0.70	Rock fragments	0.00
			Shrink-swell	0.87		
FbD:						
Fairpoint	Fair		Fair		Poor	
	Organic matter content low	0.12	Slope	0.04	Hard to reclaim (rock fragments)	0.00
	Droughty	0.99	Cobble content	0.66	Rock fragments	0.00
			Shrink-swell	0.87	Slope	0.00
FbF:						
Fairpoint	Fair		Fair		Poor	
	Organic matter content low	0.12	Cobble content	0.66	Slope	0.00
	Droughty	0.99	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.00
					Rock fragments	0.00
FcB:						
Fairpoint	Fair		Poor		Fair	
	Too clayey	0.76	Slope	0.00	Too clayey	0.63
	Water erosion	0.90	Cobble content	0.56	Rock fragments	0.88
	Cobble content	0.99	Shrink-swell	0.87		

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
FcD:						
Fairpoint	Fair		Fair		Poor	
	Too clayey	0.76	Slope	0.04	Slope	0.00
	Water erosion	0.90	Cobble content	0.84	Too clayey	0.63
			Shrink-swell	0.87	Rock fragments	0.88
FdA:						
Fitchville	Fair		Poor		Poor	
	Water erosion	0.99	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00		
			Low strength	0.00		
			Shrink-swell	0.87		
FdB:						
Fitchville	Fair		Poor		Poor	
	Water erosion	0.99	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00		
			Low strength	0.00		
			Shrink-swell	0.95		
FeA:						
Fluvaquents	Not rated		Not rated		Not rated	
FnC2:						
Fredericktown	Good		Poor		Fair	
			Slope	0.00	Rock fragments	0.04
					Hard to reclaim (rock fragments)	0.68
					Slope	0.74
FnD2:						
Fredericktown	Good		Fair		Poor	
			Slope	0.50	Slope	0.00
					Rock fragments	0.04
					Too acid	0.96
					Hard to reclaim (rock fragments)	0.96
FoB:						
Fredericktown	Good		Poor		Fair	
			Slope	0.00	Rock fragments	0.66
FrA:						
Frenchtown	Fair		Poor		Poor	
	Droughty	0.33	Wetness depth	0.00	Wetness depth	0.00
	Too acid	0.92	Slope	0.00	Too acid	0.83
	Water erosion	0.99			Rock fragments	0.99
GaB:						
Gavers	Fair		Poor		Poor	
	Organic matter content low	0.44	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.90	Slope	0.00		
			Shrink-swell	0.87		
GeC:						
Germano	Fair		Poor		Poor	
	Droughty	0.26	Depth to bedrock	0.00	Rock fragments	0.00
	Too acid	0.68	Slope	0.00	Slope	0.74
	Depth to bedrock	0.79			Depth to bedrock	0.79
	Organic matter content low	0.97			Too acid	0.99
GeD:						
Germano	Fair		Poor		Poor	
	Droughty	0.25	Depth to bedrock	0.00	Slope	0.00
	Too acid	0.68	Slope	0.50	Rock fragments	0.00
	Organic matter content low	0.79			Depth to bedrock	0.93
	Depth to bedrock	0.93			Too acid	0.97

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
GnB:						
Gilpin	Fair		Poor		Fair	
	Droughty	0.01	Depth to bedrock	0.00	Rock fragments	0.01
	Depth to bedrock	0.03	Slope	0.00	Depth to bedrock	0.03
	Too acid	0.68			Too acid	0.59
GnC:						
Gilpin	Fair		Poor		Poor	
	Droughty	0.08	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.16	Slope	0.00	Depth to bedrock	0.16
	Too acid	0.68			Too acid	0.59
	Organic matter content low	0.95			Slope	0.74
GnD:						
Gilpin	Fair		Poor		Poor	
	Droughty	0.41	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.54	Slope	0.50	Rock fragments	0.00
	Too acid	0.68			Depth to bedrock	0.54
					Too acid	0.59
GoC:						
Gilpin	Fair		Poor		Poor	
	Droughty	0.12	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.35	Slope	0.00	Depth to bedrock	0.35
	Too acid	0.68			Too acid	0.59
	Organic matter content low	0.99			Slope	0.74
Coshocton	Fair		Poor		Fair	
	Too acid	0.68	Slope	0.00	Wetness depth	0.14
	Organic matter content low	0.83	Wetness depth	0.14	Hard to reclaim (rock fragments)	0.61
	Water erosion	0.99	Low strength	0.22	Too acid	0.73
			Shrink-swell	0.87	Slope	0.74
			Depth to bedrock	0.95	Rock fragments	0.97
GoD:						
Gilpin	Fair		Poor		Poor	
	Droughty	0.24	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.35	Slope	0.50	Rock fragments	0.00
	Too acid	0.68			Depth to bedrock	0.35
					Too acid	0.59
Coshocton	Fair		Fair		Poor	
	Too acid	0.68	Wetness depth	0.14	Slope	0.00
	Organic matter content low	0.83	Low strength	0.22	Wetness depth	0.14
	Water erosion	0.99	Slope	0.50	Hard to reclaim (rock fragments)	0.73
			Shrink-swell	0.87	Too acid	0.73
			Depth to bedrock	0.95	Rock fragments	0.97
GpC:						
Gilpin	Fair		Poor		Poor	
	Droughty	0.38	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.54	Slope	0.00	Depth to bedrock	0.54
	Too acid	0.68			Too acid	0.59
	Organic matter content low	0.99			Slope	0.74

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
Coshocton	Fair		Poor		Fair	
	Organic matter content low	0.58	Slope	0.00	Wetness depth	0.14
	Too acid	0.68	Low strength	0.00	Hard to reclaim (rock fragments)	0.38
	Water erosion	0.99	Wetness depth	0.14	Rock fragments	0.66
			Shrink-swell	0.87	Too acid	0.71
					Slope	0.74
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	Fair		Poor		Poor	
	Water erosion	0.90	Wetness depth	0.00	Wetness depth	0.00
	Organic matter content low	0.99	Slope	0.00		
GrC:						
Glenford	Fair		Poor		Fair	
	Water erosion	0.90	Slope	0.00	Wetness depth	0.02
	Organic matter content low	0.98	Wetness depth	0.02	Slope	0.74
			Low strength	0.22		
GuC:						
Guernsey	Fair		Poor		Fair	
	Too clayey	0.03	Slope	0.00	Too clayey	0.02
	Organic matter content low	0.56	Low strength	0.00	Wetness depth	0.07
	Water erosion	0.90	Wetness depth	0.07	Slope	0.74
			Shrink-swell	0.12	Rock fragments	0.76
					Hard to reclaim (rock fragments)	0.87
GuC2:						
Guernsey	Fair		Poor		Poor	
	Too clayey	0.03	Wetness depth	0.00	Wetness depth	0.00
	Organic matter content low	0.56	Slope	0.00	Too clayey	0.02
	Water erosion	0.90	Low strength	0.00	Slope	0.74
			Shrink-swell	0.12	Rock fragments	0.76
					Hard to reclaim (rock fragments)	0.87
GuD:						
Guernsey	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Slope	0.00
	Organic matter content low	0.49	Wetness depth	0.01	Too clayey	0.00
	Water erosion	0.90	Shrink-swell	0.12	Wetness depth	0.01
			Slope	0.50	Rock fragments	0.76
					Hard to reclaim (rock fragments)	0.99
HeB:						
Hazleton	Fair		Poor		Poor	
	Droughty	0.54	Slope	0.00	Hard to reclaim (rock fragments)	0.00
	Too acid	0.68	Depth to bedrock	0.12	Rock fragments	0.00
	Organic matter content low	0.87			Too acid	0.59

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
HeC:						
Hazleton	Fair		Poor		Poor	
	Droughty	0.60	Slope	0.00	Hard to reclaim (rock fragments)	0.00
	Too acid	0.68	Depth to bedrock	0.16	Rock fragments	0.00
	Organic matter content low	0.80			Too acid	0.59
					Slope	0.74
HeD:						
Hazleton	Fair		Fair		Poor	
	Organic matter content low	0.32	Slope	0.50	Slope	0.00
	Too acid	0.68	Depth to bedrock	0.99	Rock fragments	0.00
	Droughty	0.99			Hard to reclaim (rock fragments)	0.00
					Too acid	0.59
HeE:						
Hazleton	Fair		Fair		Poor	
	Too acid	0.68	Depth to bedrock	0.39	Slope	0.00
	Droughty	0.76			Hard to reclaim (rock fragments)	0.00
	Organic matter content low	0.76			Rock fragments	0.00
					Too acid	0.59
HfF:						
Hazleton	Fair		Fair		Poor	
	Organic matter content low	0.40	Depth to bedrock	0.12	Slope	0.00
	Droughty	0.47			Hard to reclaim (rock fragments)	0.00
	Too acid	0.68			Rock fragments	0.00
					Too acid	0.59
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Fair		Fair		Poor	
	Organic matter content low	0.29	Cobble content	0.76	Slope	0.00
	Too acid	0.68			Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.00
					Too acid	0.59
Westmoreland	Fair		Fair		Poor	
	Organic matter content low	0.42	Depth to bedrock	0.74	Slope	0.00
	Too acid	0.68			Hard to reclaim (rock fragments)	0.00
					Rock fragments	0.00
					Too acid	0.96
HkA:						
Holly	Good		Poor		Poor	
			Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Rock fragments	0.24
					Hard to reclaim (rock fragments)	0.68

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
HlB:						
Homewood	Fair		Poor		Poor	
	Droughty	0.66	Slope	0.00	Hard to reclaim (dense layer)	0.00
	Water erosion	0.99	Wetness depth	0.38	Wetness depth	0.38
			Low strength	0.78		
HmA:						
Homeworth	Fair		Poor		Poor	
	Organic matter content low	0.99	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.99	Slope	0.00	Rock fragments	0.95
			Low strength	0.00		
HmB:						
Homeworth	Fair		Poor		Poor	
	Water erosion	0.99	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Rock fragments	0.97
			Low strength	0.00		
HoA:						
Homeworth	Fair		Poor		Poor	
	Water erosion	0.99	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Rock fragments	0.96
			Low strength	0.00		
HoB:						
Homeworth	Fair		Poor		Poor	
	Water erosion	0.99	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Rock fragments	0.97
			Low strength	0.00		
JwA:						
Jimtown	Good		Poor		Poor	
			Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Rock fragments	0.00
JwB:						
Jimtown	Good		Poor		Poor	
			Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Rock fragments	0.53
KeB:						
Keene	Fair		Poor		Fair	
	Organic matter content low	0.67	Slope	0.00	Wetness depth	0.14
	Water erosion	0.90	Low strength	0.00	Rock fragments	0.99
			Wetness depth	0.14	Too acid	0.99
			Shrink-swell	0.89		
KnB:						
Kensington	Fair		Poor		Fair	
	Water erosion	0.99	Slope	0.00	Wetness depth	0.14
			Depth to bedrock	0.04	Too acid	0.99
			Wetness depth	0.14		
			Shrink-swell	0.87		
KnC:						
Kensington	Fair		Poor		Fair	
	Water erosion	0.99	Slope	0.00	Hard to reclaim (rock fragments)	0.02
			Wetness depth	0.53	Rock fragments	0.49
			Shrink-swell	0.94	Wetness depth	0.53
			Depth to bedrock	0.99	Slope	0.74
					Too acid	0.99

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
KnD:						
Kensington	Fair		Fair		Poor	
	Water erosion	0.99	Slope	0.50	Slope	0.00
			Wetness depth	0.53	Rock fragments	0.04
			Shrink-swell	0.97	Wetness depth	0.53
					Hard to reclaim (rock fragments)	0.78
					Too acid	0.99
LbA:						
Lobdell	Fair		Poor		Fair	
	Organic matter content low	0.87	Slope	0.00	Wetness depth	0.07
	Water erosion	0.99	Wetness depth	0.07		
LnA:						
Lorain	Poor		Poor		Poor	
	Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Too clayey	0.00
			Low strength	0.00		
			Shrink-swell	0.12		
McB:						
Mechanicsburg	Fair		Poor		Poor	
	Organic matter content low	0.83	Slope	0.00	Hard to reclaim (rock fragments)	0.00
	Water erosion	0.99	Depth to bedrock	0.58	Rock fragments	0.00
					Too acid	0.99
McC:						
Mechanicsburg	Fair		Poor		Poor	
	Organic matter content low	0.85	Slope	0.00	Hard to reclaim (rock fragments)	0.00
	Water erosion	0.99	Depth to bedrock	0.58	Rock fragments	0.05
			Low strength	0.78	Slope	0.74
					Too acid	0.99
MnB:						
Morristown	Fair		Poor		Poor	
	Water erosion	0.90	Slope	0.00	Hard to reclaim (dense layer)	0.00
			Cobble content	0.85		
			Shrink-swell	0.87		
MnD:						
Morristown	Fair		Fair		Poor	
	Water erosion	0.90	Slope	0.04	Hard to reclaim (dense layer)	0.00
			Cobble content	0.75	Slope	0.00
			Shrink-swell	0.87		
MoB:						
Morristown	Fair		Poor		Poor	
	Organic matter content low	0.12	Slope	0.00	Hard to reclaim (dense layer)	0.00
	Cobble content	0.95	Cobble content	0.26	Rock fragments	0.00
	Droughty	0.99	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.54
MoD:						
Morristown	Fair		Fair		Poor	
	Organic matter content low	0.12	Slope	0.04	Hard to reclaim (dense layer)	0.00
	Cobble content	0.95	Cobble content	0.23	Rock fragments	0.00
	Droughty	0.99	Shrink-swell	0.87	Slope	0.00
					Hard to reclaim (rock fragments)	0.54

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
OdA:						
Olmsted	Fair		Poor		Poor	
	Too acid	0.92	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Too acid	0.89
Valley	Poor		Poor		Poor	
	Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.68	Slope	0.00	Too clayey	0.00
			Low strength	0.22		
			Shrink-swell	0.96		
OmB:						
Omulga	Fair		Poor		Fair	
	Too acid	0.68	Slope	0.00	Wetness depth	0.18
	Water erosion	0.90	Low strength	0.00	Too acid	0.85
	Organic matter content low	0.93	Wetness depth	0.18		
			Shrink-swell	0.87		
OmC:						
Omulga	Fair		Poor		Fair	
	Droughty	0.66	Slope	0.00	Wetness depth	0.14
	Too acid	0.68	Low strength	0.00	Slope	0.74
	Water erosion	0.90	Wetness depth	0.14	Too acid	0.93
	Organic matter content low	0.98	Shrink-swell	0.87		
OrA:						
Orrville	Fair		Poor		Poor	
	Water erosion	0.99	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Rock fragments	0.88
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Fair		Poor		Fair	
	Water erosion	0.90	Slope	0.00	Hard to reclaim (dense layer)	0.20
	Organic matter content low	0.94	Low strength	0.00	Wetness depth	0.24
	Droughty	0.95	Wetness depth	0.24	Too acid	0.95
			Shrink-swell	0.87		
RaC2:						
Rainsboro	Fair		Poor		Fair	
	Water erosion	0.90	Slope	0.00	Wetness depth	0.14
	Droughty	0.90	Low strength	0.00	Hard to reclaim (dense layer)	0.16
	Organic matter content low	0.93	Wetness depth	0.14	Too acid	0.95
			Shrink-swell	0.87	Slope	0.96
RbC:						
Rainsboro	Fair		Poor		Fair	
	Droughty	0.88	Slope	0.00	Hard to reclaim (dense layer)	0.01
	Water erosion	0.90	Low strength	0.00	Wetness depth	0.29
			Wetness depth	0.29	Too acid	0.88
			Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.95
					Slope	0.96

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ReA:						
Ravenna	Fair		Poor		Poor	
	Droughty	0.47	Wetness depth	0.00	Wetness depth	0.00
	Too acid	0.92	Slope	0.00	Hard to reclaim (dense layer)	0.10
	Water erosion	0.99	Low strength	0.78	Too acid	0.76
					Rock fragments	0.99
ReB:						
Ravenna	Fair		Poor		Poor	
	Droughty	0.65	Wetness depth	0.00	Wetness depth	0.00
	Too acid	0.92	Slope	0.00	Hard to reclaim (dense layer)	0.16
	Water erosion	0.99	Low strength	0.78	Rock fragments	0.97
RhD:						
Richland	Fair		Fair		Poor	
	Water erosion	0.99	Slope	0.50	Slope	0.00
			Shrink-swell	0.87	Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.95
RhE:						
Richland	Fair		Fair		Poor	
	Water erosion	0.99	Wetness depth	0.62	Slope	0.00
			Shrink-swell	0.87	Rock fragments	0.00
					Wetness depth	0.62
					Too acid	0.99
RsB:						
Rittman	Fair		Poor		Fair	
	Droughty	0.18	Slope	0.00	Wetness depth	0.01
	Water erosion	0.90	Low strength	0.00	Hard to reclaim (dense layer)	0.01
	Too acid	0.92	Wetness depth	0.01	Too acid	0.93
			Shrink-swell	0.87		
RsC:						
Rittman	Fair		Poor		Fair	
	Droughty	0.38	Slope	0.00	Wetness depth	0.02
	Water erosion	0.90	Low strength	0.00	Hard to reclaim (dense layer)	0.10
	Too acid	0.92	Wetness depth	0.02	Too acid	0.89
			Shrink-swell	0.87	Slope	0.96
RsD2:						
Rittman	Fair		Poor		Poor	
	Droughty	0.05	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.90	Low strength	0.00	Slope	0.00
	Too acid	0.92	Slope	0.02	Hard to reclaim (dense layer)	0.00
			Shrink-swell	0.87	Too acid	0.84
TeB:						
Teegarden	Fair		Poor		Poor	
	Droughty	0.29	Wetness depth	0.00	Wetness depth	0.00
	Too acid	0.68	Slope	0.00	Hard to reclaim (dense layer)	0.03
	Water erosion	0.99	Shrink-swell	0.92	Rock fragments	0.97
TeC:						
Teegarden	Fair		Poor		Fair	
	Droughty	0.53	Slope	0.00	Wetness depth	0.02
	Too acid	0.68	Wetness depth	0.02	Hard to reclaim (dense layer)	0.16
	Water erosion	0.99	Shrink-swell	0.87	Slope	0.74
					Rock fragments	0.95

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
TeC2:						
Teegarden	Fair		Poor		Fair	
	Droughty	0.53	Slope	0.00	Wetness depth	0.02
	Too acid	0.68	Wetness depth	0.02	Hard to reclaim (dense layer)	0.16
	Water erosion	0.99	Shrink-swell	0.87	Slope	0.74
					Rock fragments	0.95
ToA:						
Tioga	Fair		Poor		Good	
	Water erosion	0.99	Slope	0.00		
Ua:						
Udorthents	Not rated		Poor		Not rated	
			Slope	0.00	Hard to reclaim (dense layer)	0.00
					Slope	0.09
					Rock fragments	0.97
Ub:						
Udorthents	Not rated		Poor		Not rated	
	Droughty	0.00	Slope	0.00	Slope	0.09
					Rock fragments	0.28
Uc:						
Udorthents	Not rated		Good		Not rated	
					Hard to reclaim (dense layer)	0.00
					Slope	0.00
					Rock fragments	0.12
Pits	Not rated		Not rated		Not rated	
UkC2:						
Upshur	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Too clayey	0.00
	Organic matter content low	0.12	Low strength	0.00	Slope	0.74
	Droughty	0.93	Depth to bedrock	0.12	Rock fragments	0.77
	Water erosion	0.99	Shrink-swell	0.12		
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
	Depth to bedrock	0.10	Slope	0.00	Depth to bedrock	0.10
					Slope	0.74
					Too acid	0.92
UkD2:						
Upshur	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Slope	0.00
	Organic matter content low	0.14	Shrink-swell	0.35	Too clayey	0.00
	Water erosion	0.99	Slope	0.50	Rock fragments	0.82
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.03	Slope	0.50	Rock fragments	0.00
	Organic matter content low	0.98			Depth to bedrock	0.03
					Too acid	0.92

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
UkE2:						
Upshur	Poor		Poor		Poor	
	Too clayey	0.00	Low strength	0.00	Slope	0.00
	Organic matter content low	0.08	Shrink-swell	0.18	Too clayey	0.00
	Water erosion	0.99	Depth to bedrock	0.58	Rock fragments	0.76
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.03			Rock fragments	0.00
	Organic matter content low	0.87			Depth to bedrock	0.03
					Too acid	0.92
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Fair		Poor		Fair	
	Droughty	0.81	Slope	0.00	Hard to reclaim (dense layer)	0.35
	Water erosion	0.99	Wetness depth	0.53	Wetness depth	0.53
					Too acid	0.95
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Fair		Poor		Fair	
	Droughty	0.43	Slope	0.00	Hard to reclaim (dense layer)	0.10
	Water erosion	0.99	Wetness depth	0.24	Wetness depth	0.24
					Slope	0.96
					Too acid	0.96
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Fair		Poor		Fair	
	Organic matter content low	0.99	Slope	0.00	Rock fragments	0.03
					Hard to reclaim (rock fragments)	0.95
VaA:						
Valley	Poor		Poor		Poor	
	Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.68	Slope	0.00	Too clayey	0.00
			Low strength	0.22		
			Shrink-swell	0.96		
VbA:						
Valley	Poor		Poor		Poor	
	Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.68	Slope	0.00	Too clayey	0.00
			Low strength	0.22		
			Shrink-swell	0.96		

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
VcA:						
Valley	Poor		Poor		Poor	
	Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.68	Slope	0.00	Too clayey	0.00
			Low strength	0.22		
			Shrink-swell	0.96		
Lorain	Poor		Poor		Poor	
	Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00	Too clayey	0.00
			Low strength	0.00		
			Shrink-swell	0.12		
VnB:						
Vandergrift	Fair		Poor		Fair	
	Too clayey	0.02	Slope	0.00	Too clayey	0.02
	Organic matter content low	0.99	Low strength	0.00	Wetness depth	0.04
			Wetness depth	0.04	Hard to reclaim (rock fragments)	0.09
			Shrink-swell	0.12	Rock fragments	0.95
			Depth to bedrock	0.95	Too acid	0.99
VnC:						
Vandergrift	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Too clayey	0.00
	Organic matter content low	0.85	Low strength	0.00	Hard to reclaim (rock fragments)	0.00
			Wetness depth	0.04	Wetness depth	0.04
			Shrink-swell	0.12	Slope	0.74
					Rock fragments	0.94
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Fair		Poor		Poor	
	Droughty	0.38	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.90	Slope	0.00	Hard to reclaim (dense layer)	0.10
	Too acid	0.92	Low strength	0.00	Too acid	0.91
			Shrink-swell	0.87		
WaB:						
Wadsworth	Fair		Poor		Poor	
	Droughty	0.65	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.90	Slope	0.00	Hard to reclaim (dense layer)	0.29
	Too acid	0.92	Low strength	0.00	Too acid	0.88
			Shrink-swell	0.87		
WkE:						
Westmoreland	Fair		Fair		Poor	
	Organic matter content low	0.31	Depth to bedrock	0.58	Slope	0.00
	Water erosion	0.99			Hard to reclaim (rock fragments)	0.00
					Rock fragments	0.00
					Too acid	0.99
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.10			Rock fragments	0.00
	Organic matter content low	0.82			Depth to bedrock	0.10
					Too acid	0.92

TABLE 20.--CONSTRUCTION MATERIALS PART 2--Continued

Map symbol and soil name	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
WkF:						
Westmoreland	Fair		Good		Poor	
	Organic matter content low	0.23			Slope	0.00
	Too clayey	0.98			Hard to reclaim (rock fragments)	0.00
					Rock fragments	0.00
					Too clayey	0.61
					Too acid	0.98
Berks	Poor		Poor		Poor	
	Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
	Depth to bedrock	0.03			Rock fragments	0.00
	Organic matter content low	0.74			Depth to bedrock	0.03
					Too acid	0.92
WmC:						
Westmoreland	Fair		Poor		Poor	
	Organic matter content low	0.45	Slope	0.00	Hard to reclaim (rock fragments)	0.00
	Water erosion	0.99			Rock fragments	0.08
					Slope	0.50
					Too acid	0.99
Coshocton	Fair		Poor		Fair	
	Organic matter content low	0.67	Slope	0.00	Wetness depth	0.14
	Too acid	0.68	Wetness depth	0.14	Hard to reclaim (rock fragments)	0.43
	Water erosion	0.99	Low strength	0.22	Slope	0.50
			Shrink-swell	0.87	Too acid	0.74
					Rock fragments	0.78
WmD:						
Westmoreland	Fair		Fair		Poor	
	Organic matter content low	0.37	Slope	0.50	Slope	0.00
	Water erosion	0.99			Hard to reclaim (rock fragments)	0.00
	Too clayey	0.99			Rock fragments	0.40
					Too clayey	0.66
					Too acid	0.98
Coshocton	Fair		Poor		Poor	
	Organic matter content low	0.29	Low strength	0.00	Slope	0.00
	Too acid	0.68	Wetness depth	0.14	Rock fragments	0.10
	Water erosion	0.99	Slope	0.50	Wetness depth	0.14
			Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.32
					Too acid	0.67
WoA:						
Wick	Fair		Poor		Poor	
	Water erosion	0.90	Wetness depth	0.00	Wetness depth	0.00
			Slope	0.00		
			Low strength	0.00		
ZeA:						
Zepernick	Fair		Poor		Poor	
	Too acid	0.18	Wetness depth	0.00	Wetness depth	0.00
	Water erosion	0.99	Slope	0.00	Too acid	0.68
			Low strength	0.00		
			Shrink-swell	0.87		

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1

(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 potential limitation. See text on page 234 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
AmF:						
Amanda	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
	Slippage	0.50	Slippage	0.50	Slippage	0.50
BkB:						
Berks	Somewhat limited		Very limited		Somewhat limited	
	Depth to hard bedrock	0.06	Depth to hard bedrock	1.00	Slope	0.10
					Depth to hard bedrock	0.06
BkC:						
Berks	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.95	Depth to hard bedrock	1.00	Slope	1.00
	Slope	0.26	Slope	0.26	Depth to hard bedrock	0.95
BkD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
BkE:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97
BmB:						
Berks	Somewhat limited		Very limited		Somewhat limited	
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97
					Slope	0.10
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Slope	1.00
	Slope	0.26	Slope	0.26	Depth to hard bedrock	0.97
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.95	Depth to hard bedrock	1.00	Depth to hard bedrock	0.95
Urban Land	Not rated		Not rated		Not rated	
BpF:						
Bethesda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slippage	1.00	Slippage	1.00	Slippage	1.00
	Large stones content	0.06	Large stones content	0.06	Large stones content	0.06

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
BsC2:						
Bogart	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	0.04	Slope	0.04	Slope	1.00
BtA:						
Bogart	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
BtB:						
Bogart	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.10
BtC:						
Bogart	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.99
CaA:						
Calcutta	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
CcB:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.10
CcC:						
Canfield	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.99
CcD:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
CcE:						
Canfield	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.93	Depth to saturated zone	1.00	Depth to saturated zone	0.93
CeA:						
Carlisle	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
CfD2:						
Chili	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
ChA:						
Chili	Not limited		Not limited		Not limited	

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
ChB:						
Chili	Not limited		Not limited		Somewhat limited	
					Slope	0.10
ChC:						
Chili	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.04	Slope	0.04	Slope	1.00
CmB:						
Conotton	Not limited		Not limited		Somewhat limited	
					Slope	0.10
CmC:						
Conotton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Slope	0.26	Slope	1.00
CoB:						
Coshocton	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
CoC:						
Coshocton	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.99
	Slope	0.26	Depth to hard bedrock	0.26	Shrink-swell	0.50
			Slope	0.26		
CoD:						
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
ErC:						
Ernest	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.26	Slope	0.26	Shrink-swell	0.50
ErD:						
Ernest	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.93	Depth to saturated zone	1.00	Depth to saturated zone	0.93
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
FbB:						
Fairpoint	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
FbD:						
Fairpoint	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
	Slippage	0.50	Slippage	0.50	Slippage	0.50
FbF:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slippage	1.00	Slippage	1.00	Slippage	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
FcB:						
Fairpoint	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
FcD:						
Fairpoint	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
	Slippage	0.50	Slippage	0.50	Slippage	0.50
FdA:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
FdB:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
FeA:						
Fluvaquents	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
FnC2:						
Fredericktown	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Slope	0.26	Slope	1.00
FnD2:						
Fredericktown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
FoB:						
Fredericktown	Not limited		Not limited		Somewhat limited	
					Slope	0.10
FrA:						
Frenchtown	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
GaB:						
Gavers	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
GeC:						
Germano	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Slope	0.26	Slope	1.00
			Depth to soft bedrock	0.20		

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
GeD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.06		
GnB:						
Gilpin	Somewhat limited		Very limited		Somewhat limited	
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97
					Slope	0.10
GnC:						
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Depth to soft bedrock	0.84	Slope	1.00
			Slope	0.26		
GnD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.46		
GoC:						
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Depth to soft bedrock	0.64	Slope	1.00
			Slope	0.26		
Coshocton	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.99
	Slope	0.26	Slope	0.26	Shrink-swell	0.50
			Depth to hard bedrock	0.05		
GoD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.64		
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
GpC:						
Gilpin	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Depth to soft bedrock	0.46	Slope	1.00
			Slope	0.26		
Coshocton	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.99
	Slope	0.26	Slope	0.26	Shrink-swell	0.50
Urban Land	Not rated		Not rated		Not rated	

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
GrB:						
Glenford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50			Shrink-swell	0.50
					Slope	0.10
GrC:						
Glenford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Slope	0.26	Slope	1.00
	Slope	0.26			Shrink-swell	0.50
GuC:						
Guernsey	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
	Slippage	0.50	Slippage	0.50	Slope	1.00
	Slope	0.26	Slope	0.26	Slippage	0.50
GuC2:						
Guernsey	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
	Slippage	0.50	Slippage	0.50	Slope	1.00
	Slope	0.26	Slope	0.26	Slippage	0.50
GuD:						
Guernsey	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slippage	1.00	Shrink-swell	1.00	Slippage	1.00
	Shrink-swell	1.00	Slippage	1.00	Shrink-swell	1.00
HeB:						
Hazleton	Not limited		Somewhat limited		Somewhat limited	
			Depth to hard bedrock	0.88	Slope	0.10
HeC:						
Hazleton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Depth to hard bedrock	0.84	Slope	1.00
			Slope	0.26		
HeD:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.01		
HeE:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.61		
HfF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to hard bedrock	0.88		
Rock Outcrop	Not rated		Not rated		Not rated	

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
HgF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slippage	0.50	Slippage	0.50	Slippage	0.50
			Depth to hard bedrock	0.26		
HkA:						
Holly	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
HlB:						
Homewood	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.75	Depth to saturated zone	1.00	Depth to saturated zone	0.75
					Slope	0.10
HmA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
HmB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Shrink-swell	0.50	Slope	0.10
HoA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Shrink-swell	0.50		
HoB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
			Shrink-swell	0.50	Slope	0.10
JwA:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
JwB:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.10
KeB:						
Keene	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
KnB:						
Kensington	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
KnC:						
Kensington	Somewhat limited		Very limited		Very limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.47	Shrink-swell	0.50	Shrink-swell	0.50
	Slope	0.26	Slope	0.26	Depth to saturated zone	0.47
KnD:						
Kensington	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Depth to saturated zone	0.47	Shrink-swell	0.50	Depth to saturated zone	0.47
LbA:						
Lobdell	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
LnA:						
Lorain	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
McB:						
Mechanicsburg	Not limited		Not limited		Somewhat limited	
					Slope	0.10
McC:						
Mechanicsburg	Somewhat limited		Somewhat limited		Very limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.26	Slope	0.26	Shrink-swell	0.50
MnB:						
Morristown	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
MnD:						
Morristown	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
	Slippage	0.50	Slippage	0.50	Slippage	0.50
MoB:						
Morristown	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
	Large stones content	0.03	Large stones content	0.03	Slope	0.10
					Large stones content	0.03
MoD:						
Morristown	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
	Slippage	0.50	Slippage	0.50	Slippage	0.50
	Large stones content	0.03	Large stones content	0.03	Large stones content	0.03
OdA:						
Olmsted	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

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
Valley	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
OmB:						
Omulga	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
OmC:						
Omulga	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.99
	Slope	0.26	Slope	0.26	Shrink-swell	0.50
OrA:						
Orrville	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
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.93	Depth to saturated zone	1.00	Depth to saturated zone	0.93
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
RaC2:						
Rainsboro	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.99
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
RbC:						
Rainsboro	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.87	Depth to saturated zone	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.87
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
ReA:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
ReB:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
					Slope	0.10
RhD:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.95	Shrink-swell	0.50
			Shrink-swell	0.50		

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
RhE:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
	Slippage	0.50	Shrink-swell	0.50	Slippage	0.50
	Depth to saturated zone	0.30	Slippage	0.50	Depth to saturated zone	0.30
RsB:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
RsC:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.04	Slope	0.04	Shrink-swell	0.50
RsD2:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
TeB:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
TeC:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.26	Slope	0.26	Shrink-swell	0.50
TeC2:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	1.00
	Slope	0.26	Slope	0.26	Shrink-swell	0.50
ToA:						
Tioga	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
Ua:						
Udorthents	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.91	Slope	0.91	Slope	1.00
Ub:						
Udorthents	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.91	Slope	0.91	Slope	1.00
Uc:						
Udorthents	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Pits	Not rated		Not rated		Not rated	

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
UkC2:						
Upshur	Very limited		Very limited		Very limited	
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Slippage	0.50	Slippage	0.50	Slope	1.00
	Slope	0.26	Slope	0.26	Slippage	0.50
Berks	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Depth to soft bedrock	0.90	Slope	1.00
			Slope	0.26		
UkD2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
	Slippage	0.50	Slippage	0.50	Slippage	0.50
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97
UkE2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slippage	1.00	Shrink-swell	1.00	Slippage	1.00
	Shrink-swell	1.00	Slippage	1.00	Shrink-swell	1.00
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.47	Depth to saturated zone	1.00	Depth to saturated zone	0.47
					Slope	0.10
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.93	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Slope	0.04	Depth to saturated zone	0.93
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Not limited		Not limited		Somewhat limited	
					Slope	0.10
VaA:						
Valley	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

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
VbA:						
Valley	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
VcA:						
Valley	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
Lorain	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
VnB:						
Vandergrift	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	0.10
VnC:						
Vandergrift	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
	Slippage	0.50	Slippage	0.50	Slope	1.00
	Slope	0.26	Slope	0.26	Slippage	0.50
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
WaB:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
					Slope	0.10
WkE:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.90	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90
WkF:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slippage	0.50	Slippage	0.50	Slippage	0.50
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Depth to soft bedrock	0.97		

TABLE 21.--BUILDING SITE DEVELOPMENT PART 1--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
WmC:						
Westmoreland	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.50	Slope	0.50	Slope	1.00
Coshocton	Somewhat limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.50	Slope	0.50	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
WmD:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
WoA:						
Wick	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		
ZeA:						
Zepernick	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

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2

(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 potential limitation. See text on page 234 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
AmF:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.50	Slippage	0.50		
	Shrink-swell	0.50				
	Slippage	0.50				
	Frost action	0.50				
BkB:						
Berks	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Depth to hard bedrock	1.00	Droughty	0.68
	Depth to hard bedrock	0.06			Gravel content	0.25
					Depth to bedrock	0.06
BkC:						
Berks	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.95	Depth to hard bedrock	1.00	Droughty	1.00
	Frost action	0.50	Slope	0.26	Depth to bedrock	0.95
	Slope	0.26			Gravel content	0.27
					Slope	0.26
BkD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.90	Slope	1.00	Droughty	1.00
	Frost action	0.50			Depth to bedrock	0.90
					Gravel content	0.25
BkE:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.97	Slope	1.00	Droughty	0.99
	Frost action	0.50			Depth to bedrock	0.97
					Gravel content	0.22
					Large stones content	0.01
BmB:						
Berks	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Droughty	1.00
	Frost action	0.50			Depth to bedrock	0.97
					Gravel content	0.25
Urban Land	Not rated		Not rated		Not rated	

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
BmC:						
Berks	Somewhat limited		Very limited		Very limited	
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Droughty	1.00
	Frost action	0.50	Slope	0.26	Depth to bedrock	0.97
	Slope	0.26			Slope	0.26
					Gravel content	0.25
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.95	Slope	1.00	Droughty	1.00
	Frost action	0.50			Depth to bedrock	0.95
					Gravel content	0.25
Urban Land	Not rated		Not rated		Not rated	
BpF:						
Bethesda	Very limited		Very limited		Very limited	
	Slippage	1.00	Slippage	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Gravel content	1.00
	Frost action	0.50	Large stones content	0.06	Droughty	0.62
	Large stones content	0.06			Large stones content	0.32
BsC2:						
Bogart	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	0.50	Slope	0.04	Slope	0.04
	Slope	0.04				
BtA:						
Bogart	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.83	Depth to saturated zone	1.00	Depth to saturated zone	0.83
	Frost action	0.50				
BtB:						
Bogart	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.88	Cutbanks cave	1.00	Depth to saturated zone	0.88
	Frost action	0.50	Depth to saturated zone	1.00		
BtC:						
Bogart	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.75	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Frost action	0.50	Slope	0.04	Slope	0.04
	Slope	0.04				
CaA:						
Calcutta	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				
	Low strength	1.00				
	Shrink-swell	0.50				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
CcB:						
Canfield	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.83
	Depth to saturated zone	0.83				
CcC:						
Canfield	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	Slope	0.04	Slope	0.04
	Slope	0.04				
CcD:						
Canfield	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	0.83
	Depth to saturated zone	0.83			Droughty	0.01
CcE:						
Canfield	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Depth to saturated zone	0.56				
CeA:						
Carlisle	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	Organic matter content	1.00
	Subsidence	1.00	Organic matter content	1.00	Depth to saturated zone	1.00
	Frost action	1.00				
CfD2:						
Chili	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				
ChA:						
Chili	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
ChB:						
Chili	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
ChC:						
Chili	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Slope	0.04	Slope	0.04
	Slope	0.04				
CmB:						
Conotton	Somewhat limited		Not limited		Somewhat limited	
	Frost action	0.50			Gravel content	0.27
					Droughty	0.06
CmC:						
Conotton	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Slope	0.26	Gravel content	0.27
	Slope	0.26			Slope	0.26
					Droughty	0.10

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
CoB:						
Coshocton	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				
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
CoC:						
Coshocton	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	Depth to hard bedrock	0.26	Slope	0.26
	Low strength	0.50	Slope	0.26		
	Shrink-swell	0.50				
	Slope	0.26				
CoD:						
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00				
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	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				
	Low strength	1.00				
	Shrink-swell	0.50				
ErC:						
Ernest	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.83	Depth to saturated zone	1.00	Depth to saturated zone	0.83
	Frost action	0.50	Slope	0.26	Slope	0.26
	Slope	0.26			Droughty	0.08
ErD:						
Ernest	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	0.90	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Depth to saturated zone	0.56				
	Shrink-swell	0.50				
	Frost action	0.50				
FbB:						
Fairpoint	Somewhat limited		Not limited		Very limited	
	Shrink-swell	0.50			Gravel content	1.00
	Frost action	0.50			Droughty	0.44
					Large stones content	0.03

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
FbD:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Gravel content	1.00
	Shrink-swell	0.50	Slippage	0.50	Slope	1.00
	Slippage	0.50			Droughty	0.51
	Frost action	0.50			Large stones content	0.03
FbF:						
Fairpoint	Very limited		Very limited		Very limited	
	Slippage	1.00	Slippage	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Gravel content	1.00
	Shrink-swell	0.50			Droughty	0.51
	Frost action	0.50			Large stones content	0.03
FcB:						
Fairpoint	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Droughty	0.19
	Frost action	0.50				
FcD:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Slippage	0.50	Droughty	0.19
	Slippage	0.50				
	Frost action	0.50				
FdA:						
Fitchville	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				
	Low strength	1.00				
	Shrink-swell	0.50				
FdB:						
Fitchville	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				
	Low strength	1.00				
	Shrink-swell	0.50				
FeA:						
Fluvaquents	Very limited		Very limited		Not rated	
	Flooding	1.00	Ponding	1.00		
	Ponding	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	1.00	Flooding	0.80		
FnC2:						
Fredericktown	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Slope	0.26	Gravel content	0.32
	Slope	0.26			Slope	0.26
FnD2:						
Fredericktown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50			Gravel content	0.32
FoB:						
Fredericktown	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
FrA:						
Frenchtown	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				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
GaB:						
Gavers	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				
	Shrink-swell	0.50				
GeC:						
Germano	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Slope	0.26	Slope	0.26
	Slope	0.26	Depth to soft bedrock	0.20	Depth to bedrock	0.20
GeD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Frost action	0.50	Slope	1.00	Depth to bedrock	0.06
			Depth to soft bedrock	0.06	Droughty	0.01
GnB:						
Gilpin	Somewhat limited		Very limited		Somewhat limited	
	Depth to hard bedrock	0.97	Depth to hard bedrock	1.00	Depth to bedrock	0.97
	Frost action	0.50			Droughty	0.34
GnC:						
Gilpin	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Depth to soft bedrock	0.84	Depth to bedrock	0.84
	Slope	0.26	Slope	0.26	Slope	0.26
					Droughty	0.10
GnD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Depth to soft bedrock	0.46	Depth to bedrock	0.46
GoC:						
Gilpin	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Depth to soft bedrock	0.64	Depth to bedrock	0.65
	Slope	0.26	Slope	0.26	Slope	0.26
					Droughty	0.05
Coshocton	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	Slope	0.26	Slope	0.26
	Low strength	0.50	Depth to hard bedrock	0.05		
	Shrink-swell	0.50				
	Slope	0.26				
GoD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Depth to soft bedrock	0.64	Depth to bedrock	0.65
					Droughty	0.01

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Depth to saturated zone	0.75				
	Low strength	0.50				
	Shrink-swell	0.50				
GpC:						
Gilpin	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Depth to soft bedrock	0.46	Depth to bedrock	0.46
	Slope	0.26	Slope	0.26	Slope	0.26
Coshocton	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	Slope	0.26	Slope	0.26
	Low strength	0.50				
	Shrink-swell	0.50				
	Slope	0.26				
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	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				
	Low strength	1.00				
	Shrink-swell	0.50				
GrC:						
Glenford	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.96
	Low strength	1.00	Slope	0.26	Slope	0.26
	Depth to saturated zone	0.96				
	Shrink-swell	0.50				
	Slope	0.26				
GuC:						
Guernsey	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.88
	Shrink-swell	1.00	Slippage	0.50	Slope	0.26
	Low strength	1.00	Too clayey	0.50		
	Depth to saturated zone	0.88	Slope	0.26		
	Slippage	0.50				
GuC2:						
Guernsey	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	Slippage	0.50	Slope	0.26
	Shrink-swell	1.00	Too clayey	0.50		
	Low strength	1.00	Slope	0.26		
	Slippage	0.50				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
GuD:						
Guernsey	Very limited		Very limited		Very limited	
	Slippage	1.00	Slippage	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	0.99
	Frost action	1.00	Depth to saturated zone	1.00		
	Shrink-swell	1.00	Too clayey	0.50		
	Low strength	1.00				
HeB:						
Hazleton	Somewhat limited		Somewhat limited		Not limited	
	Frost action	0.50	Depth to hard bedrock	0.88		
HeC:						
Hazleton	Somewhat limited		Somewhat limited		Somewhat limited	
	Frost action	0.50	Depth to hard bedrock	0.84	Slope	0.26
	Slope	0.26	Slope	0.26		
HeD:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Frost action	0.50	Slope	1.00		
			Depth to hard bedrock	0.01		
HeE:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Depth to hard bedrock	0.61	Large stones content	0.01
HfF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Depth to hard bedrock	0.88	Droughty	0.01
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Frost action	0.50	Slope	1.00		
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slippage	0.50	Slippage	0.50	Gravel content	0.05
	Frost action	0.50	Depth to hard bedrock	0.26		
HkA:						
Holly	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Frost action	1.00				
HlB:						
Homewood	Somewhat limited		Very limited		Somewhat limited	
	Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.35
	Depth to saturated zone	0.35				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
HmA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Too clayey	0.50		
HmB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Too clayey	0.50		
HoA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Too clayey	0.50		
HoB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Too clayey	0.50		
JwA:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Depth to saturated zone	1.00		
JwB:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Depth to saturated zone	1.00		
KeB:						
Keene	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	0.90				
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
KnB:						
Kensington	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.75	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Shrink-swell	0.50				
	Frost action	0.50				
KnC:						
Kensington	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.26
	Frost action	0.50	Slope	0.26	Depth to saturated zone	0.19
	Slope	0.26				
	Depth to saturated zone	0.19				
KnD:						
Kensington	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Frost action	0.50				
	Depth to saturated zone	0.19				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
LbA:						
Lobdell	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.88
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Depth to saturated zone	0.88				
LnA:						
Lorain	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
	Low strength	1.00	Too clayey	0.50		
	Frost action	1.00				
	Shrink-swell	1.00				
McB:						
Mechanicsburg	Somewhat limited		Not limited		Not limited	
	Frost action	0.50				
McC:						
Mechanicsburg	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Slope	0.26	Slope	0.26
	Frost action	0.50				
	Low strength	0.28				
	Slope	0.26				
MnB:						
Morristown	Somewhat limited		Not limited		Somewhat limited	
	Shrink-swell	0.50			Droughty	0.14
	Frost action	0.50				
MnD:						
Morristown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Slippage	0.50	Droughty	0.31
	Slippage	0.50				
	Frost action	0.50				
MoB:						
Morristown	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Large stones content	0.03	Droughty	0.58
	Frost action	0.50			Gravel content	0.26
	Large stones content	0.03			Large stones content	0.03
MoD:						
Morristown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Slippage	0.50	Droughty	0.61
	Slippage	0.50	Large stones content	0.03	Gravel content	0.26
	Frost action	0.50			Large stones content	0.03
	Large stones content	0.03				
OdA:						
Olmsted	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				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
Valley	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	Too clayey	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
OmB:						
Omulga	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.68
	Low strength	1.00				
	Depth to saturated zone	0.68				
	Shrink-swell	0.50				
OmC:						
Omulga	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	Slope	0.26	Slope	0.26
	Shrink-swell	0.50				
	Slope	0.26				
	Low strength	0.05				
OrA:						
Orrville	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	0.60	Flooding	0.60
	Frost action	1.00				
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Low strength	1.00				
	Depth to saturated zone	0.56				
	Shrink-swell	0.50				
RaC2:						
Rainsboro	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	Slope	0.04	Slope	0.04
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
	Slope	0.04				
RbC:						
Rainsboro	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.48
	Shrink-swell	0.50	Slope	0.04	Slope	0.04
	Depth to saturated zone	0.48			Large stones content	0.03
	Slope	0.04				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
ReA:						
Ravenna	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				
ReB:						
Ravenna	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				
RhD:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	0.95	Large stones content	0.03
	Frost action	0.50				
RhE:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.12
	Slippage	0.50	Slippage	0.50		
	Frost action	0.50				
	Depth to saturated zone	0.12				
RsB:						
Rittman	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Depth to saturated zone	0.99			Droughty	0.01
	Low strength	0.28				
RsC:						
Rittman	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.96
	Low strength	1.00	Slope	0.04	Slope	0.04
	Depth to saturated zone	0.96				
	Shrink-swell	0.50				
	Slope	0.04				
RsD2:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Slope	1.00	Slope	1.00
	Slope	1.00			Droughty	0.17
	Low strength	0.50				
TeB:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Shrink-swell	0.50				
	Frost action	0.50				
	Low strength	0.05				
TeC:						
Teegarden	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.96	Depth to saturated zone	1.00	Depth to saturated zone	0.96
	Shrink-swell	0.50	Slope	0.26	Slope	0.26
	Frost action	0.50				
	Slope	0.26				
	Low strength	0.05				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
TeC2:						
Teegarden	Somewhat limited		Very limited		Somewhat limited	
	Depth to saturated zone	0.96	Depth to saturated zone	1.00	Depth to saturated zone	0.96
	Shrink-swell	0.50	Slope	0.26	Slope	0.26
	Frost action	0.50				
	Slope	0.26				
	Low strength	0.05				
ToA:						
Tioga	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
	Frost action	0.50	Flooding	0.60		
Ua:						
Udorthents	Somewhat limited		Somewhat limited		Not rated	
	Slope	0.91	Slope	0.91		
	Frost action	0.50				
Ub:						
Udorthents	Very limited		Somewhat limited		Not rated	
	Frost action	1.00	Slope	0.91		
	Slope	0.91				
Uc:						
Udorthents	Very limited		Very limited		Not rated	
	Slope	1.00	Slope	1.00		
	Frost action	0.50				
Pits	Not rated		Not rated		Not rated	
UkC2:						
Upshur	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slippage	0.50	Slope	0.26
	Shrink-swell	1.00	Too clayey	0.50		
	Low strength	1.00	Slope	0.26		
	Slippage	0.50				
	Slope	0.26				
Berks	Somewhat limited		Somewhat limited		Very limited	
	Frost action	0.50	Depth to soft bedrock	0.90	Droughty	1.00
	Slope	0.26			Depth to bedrock	0.90
			Slope	0.26	Slope	0.26
					Gravel content	0.25
UkD2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Slippage	0.50		
	Shrink-swell	1.00	Too clayey	0.50		
	Low strength	1.00				
	Slippage	0.50				
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.97			Droughty	1.00
			Slope	1.00		
	Frost action	0.50			Depth to bedrock	0.97
					Gravel content	0.27
UkE2:						
Upshur	Very limited		Very limited		Very limited	
	Slippage	1.00	Slippage	1.00	Slope	1.00
	Slope	1.00	Slope	1.00		
	Frost action	1.00	Too clayey	0.50		
	Shrink-swell	1.00				
	Low strength	1.00				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.97	Slope	1.00	Droughty	1.00
	Frost action	0.50			Depth to bedrock	0.97
					Gravel content	0.25
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
	Depth to saturated zone	0.19				
	Low strength	0.05				
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
	Depth to saturated zone	0.56	Slope	0.04	Slope	0.04
	Slope	0.04				
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Somewhat limited		Very limited		Not limited	
	Frost action	0.50	Cutbanks cave	1.00		
VaA:						
Valley	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	Too clayey	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
VbA:						
Valley	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	Too clayey	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				
VcA:						
Valley	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	Too clayey	0.50		
	Low strength	1.00				
	Shrink-swell	0.50				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
Lorain	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
	Low strength	1.00	Too clayey	0.50		
	Frost action	1.00				
	Shrink-swell	1.00				
VnB:						
Vandergrift	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Shrink-swell	1.00	Too clayey	0.50		
	Low strength	1.00				
	Depth to saturated zone	0.94				
VnC:						
Vandergrift	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.94
	Shrink-swell	1.00	Slippage	0.50	Slope	0.26
	Low strength	1.00	Too clayey	0.50		
	Depth to saturated zone	0.94	Slope	0.26		
	Slippage	0.50				
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	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				
	Low strength	0.50				
WaB:						
Wadsworth	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				
	Low strength	1.00				
	Shrink-swell	0.50				
WkE:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
	Depth to hard bedrock	0.90	Slope	1.00	Droughty	1.00
	Frost action	0.50			Depth to bedrock	0.90
					Gravel content	0.22
					Large stones content	0.01
WkF:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Slippage	0.50	Slippage	0.50		
	Frost action	0.50				

TABLE 22.--BUILDING SITE DEVELOPMENT PART 2--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
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50	Depth to soft bedrock	0.97	Droughty	1.00
					Depth to bedrock	0.97
					Gravel content	0.25
WmC:						
Westmoreland	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.50	Slope	0.50	Slope	0.50
	Frost action	0.50				
	Low strength	0.05				
Coshocton	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	Slope	0.50	Slope	0.50
	Slope	0.50				
	Low strength	0.50				
	Shrink-swell	0.50				
WmD:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	0.50				
	Low strength	0.28				
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
	Low strength	1.00				
	Depth to saturated zone	0.75				
	Shrink-swell	0.50				
WoA:						
Wick	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Depth to saturated zone	1.00	Flooding	0.80	Depth to saturated zone	1.00
	Frost action	1.00	Too clayey	0.50		
	Low strength	0.90				
ZeA:						
Zepernick	Very limited		Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	0.60	Flooding	0.60
	Frost action	1.00				
	Low strength	0.90				
	Shrink-swell	0.50				

TABLE 23.--SANITARY FACILITIES PART 1

(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 potential limitation. See text on page 236 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
AmF:				
Amanda	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
	Slippage	0.50		
BkB:				
Berks	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Seepage	1.00
			Slope	0.32
BkC:				
Berks	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.26	Slope	1.00
			Seepage	1.00
BkD:				
Berks	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	1.00
BkE:				
Berks	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	1.00
BmB:				
Berks	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Seepage	1.00
			Slope	0.32
Urban Land	Not rated		Not rated	
BmC:				
Berks	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
	Slope	0.26	Slope	1.00
			Seepage	1.00
Urban Land	Not rated		Not rated	

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
BmD:				
Berks	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	1.00
			Large stones content	0.01
Urban Land	Not rated		Not rated	
BpF:				
Bethesda	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slippage	1.00	Large stones content	0.62
	Restricted permeability	1.00		
	Large stones content	0.06		
BsC2:				
Bogart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	1.00
	Slope	0.04		
BtA:				
Bogart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
BtB:				
Bogart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	0.32
BtC:				
Bogart	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46	Slope	1.00
	Slope	0.04		
CaA:				
Calcutta	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	1.00

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
CcB:				
Canfield	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32
CcC:				
Canfield	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Seepage	0.53
CcD:				
Canfield	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
CcE:				
Canfield	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Depth to saturated zone	1.00	Seepage	0.53
CeA:				
Carlisle	Very limited		Very limited	
	Ponding	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Subsidence	1.00	Organic matter content	1.00
			Seepage	1.00
CfD2:				
Chili	Very limited		Very limited	
	Slope	1.00	Slope	1.00
			Seepage	1.00
ChA:				
Chili	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
ChB:				
Chili	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.32
ChC:				
Chili	Somewhat limited		Very limited	
	Slope	0.04	Seepage	1.00
			Slope	1.00
CmB:				
Conotton	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.32

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
CmC:				
Conotton	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Slope	0.26	Slope	1.00
CoB:				
Coshocton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
	Depth to bedrock	0.01		
CoC:				
Coshocton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Depth to bedrock	0.69	Depth to hard bedrock	0.26
	Slope	0.26		
CoD:				
Coshocton	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
DAM:				
Dam	Not rated		Not rated	
DgA:				
Doles	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
ErC:				
Ernest	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.26	Seepage	0.53
ErD:				
Ernest	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
FbB:				
Fairpoint	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32
			Large stones content	0.01
FbD:				
Fairpoint	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00	Large stones content	0.02
	Slippage	0.50		

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
FbF:				
Fairpoint	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slippage	1.00	Large stones content	0.02
	Restricted permeability	1.00		
FcB:				
Fairpoint	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32
FcD:				
Fairpoint	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00		
	Slippage	0.50		
FdA:				
Fitchville	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00		
FdB:				
Fitchville	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
			Seepage	0.28
FeA:				
Fluvaquents	Very limited		Very limited	
	Flooding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.50	Seepage	0.50
FnC2:				
Fredericktown	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Slope	0.26	Slope	1.00
FnD2:				
Fredericktown	Very limited		Very limited	
	Slope	1.00	Slope	1.00
			Seepage	1.00
FoB:				
Fredericktown	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.32
FrA:				
Frenchtown	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 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
GaB:				
Gavers	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
GeC:				
Germano	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	0.26	Seepage	1.00
			Slope	1.00
GeD:				
Germano	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	1.00
GnB:				
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to hard bedrock	1.00
			Seepage	0.53
			Slope	0.32
GnC:				
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Restricted permeability	0.46	Slope	1.00
	Slope	0.26	Seepage	0.53
GnD:				
Gilpin	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
GoC:				
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Restricted permeability	0.46	Slope	1.00
	Slope	0.26	Seepage	0.53
Coshocton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Depth to bedrock	0.47	Depth to hard bedrock	0.05
	Slope	0.26		
GoD:				
Gilpin	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
Coshocton	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Depth to soft bedrock	0.05
	Depth to bedrock	0.47		
GpC:				
Gilpin	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Restricted permeability	0.46	Slope	1.00
	Slope	0.26	Seepage	0.53
Coshocton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.26		
	Depth to bedrock	0.11		
Urban Land	Not rated		Not rated	
GrB:				
Glenford	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
			Seepage	0.28
GrC:				
Glenford	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.26	Seepage	0.28
GuC:				
Guernsey	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slippage	0.50		
	Slope	0.26		
	Depth to bedrock	0.09		
GuC2:				
Guernsey	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slippage	0.50		
	Slope	0.26		
	Depth to bedrock	0.09		

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
GuD:				
Guernsey	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slippage	1.00		
	Restricted permeability	1.00		
	Depth to bedrock	0.02		
HeB:				
Hazleton	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Depth to bedrock	0.96	Depth to hard bedrock	0.88
			Slope	0.32
HeC:				
Hazleton	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
	Depth to bedrock	0.94	Slope	1.00
	Slope	0.26	Depth to hard bedrock	0.84
HeD:				
Hazleton	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Filtering capacity	1.00	Seepage	1.00
	Depth to bedrock	0.36	Depth to hard bedrock	0.01
HeE:				
Hazleton	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Filtering capacity	1.00	Seepage	1.00
	Depth to bedrock	0.86	Depth to hard bedrock	0.61
HfF:				
Hazleton	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Filtering capacity	1.00	Seepage	1.00
	Depth to bedrock	0.96	Depth to hard bedrock	0.88
Rock Outcrop	Not rated		Not rated	
HgF:				
Hazleton	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Filtering capacity	1.00	Seepage	1.00
	Depth to bedrock	0.04		
Westmoreland	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Depth to bedrock	0.69	Seepage	0.53
	Slippage	0.50	Depth to hard bedrock	0.26
	Restricted permeability	0.46		

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
HkA:				
Holly	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
			Seepage	1.00
HlB:				
Homewood	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
	Depth to bedrock	0.06	Slope	0.32
HmA:				
Homeworth	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
HmB:				
Homeworth	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32
HoA:				
Homeworth	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
HoB:				
Homeworth	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32
JwA:				
Jimtown	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	1.00
JwB:				
Jimtown	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	1.00
			Slope	0.32
KeB:				
Keene	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	0.32
	Depth to bedrock	0.06	Seepage	0.28

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
KnB:				
Kensington	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	0.99	Depth to soft bedrock	0.96
	Restricted permeability	0.46	Seepage	0.53
			Slope	0.32
KnC:				
Kensington	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.46	Seepage	1.00
	Depth to bedrock	0.36	Slope	1.00
	Slope	0.26	Depth to soft bedrock	0.01
KnD:				
Kensington	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	1.00
	Depth to bedrock	0.27		
LbA:				
Lobdell	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.46	Seepage	1.00
LnA:				
Lorain	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		
McB:				
Mechanicsburg	Somewhat limited		Very limited	
	Depth to bedrock	0.78	Seepage	1.00
			Depth to soft bedrock	0.42
			Slope	0.32
McC:				
Mechanicsburg	Somewhat limited		Very limited	
	Depth to bedrock	0.78	Seepage	1.00
	Restricted permeability	0.46	Slope	1.00
	Slope	0.26	Depth to soft bedrock	0.42
MnB:				
Morristown	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
MnD:				
Morristown	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00		
	Slippage	0.50		
MoB:				
Morristown	Very limited		Somewhat limited	
	Restricted permeability	1.00	Slope	0.32
	Large stones content	0.03	Large stones content	0.28
MoD:				
Morristown	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	1.00	Large stones content	0.37
	Slippage	0.50		
	Large stones content	0.03		
OdA:				
Olmsted	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	1.00
Valley	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		
OmB:				
Omulga	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32
OmC:				
Omulga	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.26	Seepage	0.53
OrA:				
Orrville	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Filtering capacity	1.00	Seepage	1.00
	Restricted permeability	0.46		
Pg:				
Pits	Not rated		Not rated	

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
RaB:				
Rainsboro	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	1.00
			Slope	0.32
RaC2:				
Rainsboro	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Seepage	1.00
RbC:				
Rainsboro	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Seepage	1.00
ReA:				
Ravenna	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
ReB:				
Ravenna	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32
RhD:				
Richland	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
RhE:				
Richland	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slippage	0.50	Seepage	0.53
	Restricted permeability	0.46		
RsB:				
Rittman	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
RsC:				
Rittman	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Seepage	0.53
RsD2:				
Rittman	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Seepage	0.53
TeB:				
Teegarden	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32
TeC:				
Teegarden	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.26	Seepage	0.53
	Depth to bedrock	0.09		
TeC2:				
Teegarden	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.26	Seepage	0.53
	Depth to bedrock	0.09		
ToA:				
Tioga	Very limited		Very limited	
	Flooding	1.00	Flooding	1.00
	Filtering capacity	1.00	Seepage	1.00
Ua:				
Udorthents	Somewhat limited		Very limited	
	Slope	0.91	Slope	1.00
			Seepage	1.00
Ub:				
Udorthents	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Slope	0.91	Seepage	1.00
Uc:				
Udorthents	Very limited		Very limited	
	Slope	1.00	Slope	1.00
			Seepage	1.00
Pits	Not rated		Not rated	

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
UkC2:				
Upshur	Very limited		Very limited	
	Restricted permeability	1.00	Slope	1.00
	Depth to bedrock	0.96	Depth to soft bedrock	0.88
	Slippage	0.50		
	Slope	0.26		
Berks	Very limited		Very limited	
	Depth to bedrock	1.00	Depth to soft bedrock	1.00
	Slope	0.26	Seepage	1.00
			Slope	1.00
UkD2:				
Upshur	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00		
	Slippage	0.50		
Berks	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	1.00
UkE2:				
Upshur	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	1.00	Depth to soft bedrock	0.42
	Slippage	1.00		
	Depth to bedrock	0.78		
Berks	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	1.00
Ur:				
Urban Land	Not rated		Not rated	
UtB:				
Urban Land	Not rated		Not rated	
Canfield	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.53
			Slope	0.32
UtC:				
Urban Land	Not rated		Not rated	
Canfield	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slope	0.04	Seepage	0.53

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
UvB:				
Urban Land	Not rated		Not rated	
Chili	Very limited		Very limited	
	Filtering capacity	1.00	Seepage	1.00
			Slope	0.32
VaA:				
Valley	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		
VbA:				
Valley	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		
VcA:				
Valley	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		
Lorain	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		
VnB:				
Vandergrift	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.32
	Depth to bedrock	0.47	Depth to soft bedrock	0.05
VnC:				
Vandergrift	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Slippage	0.50		
	Slope	0.26		
W:				
Water	Not rated		Not rated	

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
WaA:				
Wadsworth	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Seepage	0.28
WaB:				
Wadsworth	Very limited		Very limited	
	Restricted permeability	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	0.32
			Seepage	0.28
WkE:				
Westmoreland	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Depth to bedrock	0.78	Seepage	0.53
	Restricted permeability	0.46	Depth to soft bedrock	0.42
Berks	Very limited		Very limited	
	Slope	1.00	Depth to hard bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	1.00
WkF:				
Westmoreland	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Slippage	0.50	Seepage	0.53
	Restricted permeability	0.46		
Berks	Very limited		Very limited	
	Slope	1.00	Depth to soft bedrock	1.00
	Depth to bedrock	1.00	Slope	1.00
			Seepage	1.00
WmC:				
Westmoreland	Somewhat limited		Very limited	
	Slope	0.50	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to bedrock	0.27		
Coshocton	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Restricted permeability	1.00	Slope	1.00
	Slope	0.50	Seepage	0.53
	Depth to bedrock	0.06		
WmD:				
Westmoreland	Very limited		Very limited	
	Slope	1.00	Slope	1.00
	Restricted permeability	0.46	Seepage	0.53
	Depth to bedrock	0.09		

TABLE 23.--SANITARY FACILITIES PART 1--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
Coshocton	Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00
	Restricted permeability	1.00	Seepage	0.53
WoA:				
Wick	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.72	Seepage	0.28
ZeA:				
Zepernick	Very limited		Very limited	
	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Flooding	1.00
	Restricted permeability	0.72	Seepage	0.28

TABLE 24.--SANITARY FACILITIES PART 2

(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 potential limitation. See text on page 236 for further explanation of ratings in this table.)

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
AmF:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Slippage	0.50		
BkB:						
Berks	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.96
BkC:						
Berks	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.94
	Slope	0.26	Slope	0.26	Slope	0.26
BkD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.95
BkE:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.47
BmB:						
Berks	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.96
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.80
	Slope	0.26	Slope	0.26	Slope	0.26
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.70
Urban Land	Not rated		Not rated		Not rated	

TABLE 24.--SANITARY FACILITIES PART 2--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
BpF:						
Bethesda	Very limited		Very limited		Very limited	
	Slope	1.00	Slippage	1.00	Slope	1.00
	Too clayey	0.50	Slope	1.00	Gravel content	0.99
	Large stones content	0.07			Too clayey	0.50
					Large stones content	0.07
BsC2:						
Bogart	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, bottom layer	1.00	Slope	0.04	Gravel content	0.16
	Slope	0.04			Slope	0.04
BtA:						
Bogart	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, bottom layer	1.00	Seepage	1.00	Gravel content	0.10
BtB:						
Bogart	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, bottom layer	1.00	Seepage	1.00	Gravel content	0.16
BtC:						
Bogart	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
	Seepage, bottom layer	1.00	Slope	0.04	Gravel content	0.13
	Slope	0.04			Slope	0.04
CaA:						
Calcutta	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, bottom layer	1.00			Too clayey	0.50
	Too clayey	0.50				
CcB:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
CcC:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Slope	0.04	Slope	0.04	Slope	0.04
CcD:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
CcE:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98

TABLE 24.--SANITARY FACILITIES PART 2--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
CeA:						
Carlisle	Not rated		Very limited		Not rated	
			Ponding	1.00		
			Depth to saturated zone	1.00		
			Seepage	1.00		
CfD2:						
Chili	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Gravel content	0.07
ChA:						
Chili	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.54
ChB:						
Chili	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.55
ChC:						
Chili	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.13
	Slope	0.04	Slope	0.04	Slope	0.04
CmB:						
Conotton	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
CmC:						
Conotton	Very limited		Very limited		Very limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
	Slope	0.26	Slope	0.26	Slope	0.26
CoB:						
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00			Too clayey	0.50
	Too clayey	0.50				
CoC:						
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00	Depth to bedrock	0.26	Too clayey	0.50
	Too clayey	0.50	Slope	0.26	Depth to bedrock	0.26
	Slope	0.26			Slope	0.26
CoD:						
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00			Too clayey	0.50
	Too clayey	0.50				
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

TABLE 24.--SANITARY FACILITIES PART 2--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
ErC:						
Ernest	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	0.26	Slope	0.26	Slope	0.26
ErD:						
Ernest	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
FbB:						
Fairpoint	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Gravel content	0.99
					Too clayey	0.50
FbD:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50	Slippage	0.50	Gravel content	0.99
					Too clayey	0.50
FbF:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slippage	1.00	Slope	1.00
	Too clayey	0.50	Slope	1.00	Gravel content	0.99
					Too clayey	0.50
FcB:						
Fairpoint	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Gravel content	0.80
	Large stones content	0.01			Too clayey	0.50
					Large stones content	0.01
FcD:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
			Slippage	0.50	Gravel content	0.92
FdA:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
FdB:						
Fitchville	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
FeA:						
Fluvaquents	Not rated		Very limited		Not rated	
			Flooding	1.00		
			Ponding	1.00		
			Depth to saturated zone	1.00		
FnC2:						
Fredericktown	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Slope	0.26
	Slope	0.26	Slope	0.26	Gravel content	0.25
FnD2:						
Fredericktown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Too clayey	0.50
	Too clayey	0.50			Gravel content	0.03

TABLE 24.--SANITARY FACILITIES PART 2--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
FoB:						
Fredericktown	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Too sandy	0.50
	Too sandy	0.50			Gravel content	0.25
FrA:						
Frenchtown	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
GaB:						
Gavers	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
GeC:						
Germano	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	1.00	Slope	0.26
	Slope	0.26	Slope	0.26	Gravel content	0.08
GeD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	1.00	Gravel content	0.61
GnB:						
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
					Gravel content	0.01
GnC:						
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.26	Slope	0.26	Slope	0.26
					Gravel content	0.25
GnD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
					Gravel content	0.22
GoC:						
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.26	Slope	0.26	Slope	0.26
					Gravel content	0.01
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00	Slope	0.26	Too clayey	0.50
	Too clayey	0.50	Depth to bedrock	0.05	Slope	0.26
	Slope	0.26			Depth to bedrock	0.05
GoD:						
Gilpin	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
					Gravel content	0.10

TABLE 24.--SANITARY FACILITIES PART 2--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
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00	Depth to bedrock	0.05	Too clayey	0.50
	Too clayey	0.50			Depth to bedrock	0.05
GpC:						
Gilpin	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.26	Slope	0.26	Slope	0.26
					Gravel content	0.16
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00	Slope	0.26	Too clayey	0.50
	Too clayey	0.50			Slope	0.26
	Slope	0.26				
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
GrC:						
Glenford	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	Slope	0.26	Too clayey	0.50
	Slope	0.26			Slope	0.26
GuC:						
Guernsey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Slippage	0.50	Too clayey	1.00
	Too clayey	1.00	Slope	0.26	Hard to compact	1.00
	Slope	0.26			Slope	0.26
GuC2:						
Guernsey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Slippage	0.50	Too clayey	1.00
	Too clayey	1.00	Slope	0.26	Hard to compact	1.00
	Slope	0.26			Slope	0.26
GuD:						
Guernsey	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slippage	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Depth to saturated zone	1.00	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
HeB:						
Hazleton	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Seepage	1.00	Gravel content	0.99
	Seepage, bottom layer	1.00	Depth to bedrock	0.88	Depth to bedrock	0.88

TABLE 24.--SANITARY FACILITIES PART 2--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
HeC:						
Hazleton	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Gravel content	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	0.84	Depth to bedrock	0.84
	Slope	0.26	Slope	0.26	Slope	0.26
HeD:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	1.00	Gravel content	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	0.01	Depth to bedrock	0.01
HeE:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	1.00	Gravel content	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	0.61	Depth to bedrock	0.61
HfF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	1.00	Gravel content	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	0.88	Depth to bedrock	0.88
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	1.00	Gravel content	1.00
	Seepage, bottom layer	1.00				
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Slippage	0.50	Depth to bedrock	0.26
			Depth to bedrock	0.26	Gravel content	0.25
HkA:						
Holly	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	Gravel content	0.03
	Depth to bedrock	1.00	Seepage	1.00		
	Seepage, bottom layer	1.00				
HlB:						
Homewood	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	0.93
	Depth to bedrock	1.00				
HmA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
HmB:						
Homeworth	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			Hard to compact	1.00

TABLE 24.--SANITARY FACILITIES PART 2--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
HoA:						
Homeworth	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			Hard to compact	1.00
HoB:						
Homeworth	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			Hard to compact	1.00
JwA:						
Jimtown	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, bottom layer	1.00	Seepage	1.00	Gravel content	0.54
	Too sandy	0.50			Too sandy	0.50
JwB:						
Jimtown	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, bottom layer	1.00				
KeB:						
Keene	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00			Too clayey	0.50
	Too clayey	0.50				
KnB:						
Kensington	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00	Depth to bedrock	0.96	Depth to bedrock	0.96
KnC:						
Kensington	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Seepage, bottom layer	1.00	Slope	0.26	Slope	0.26
	Depth to saturated zone	0.99	Depth to bedrock	0.01	Depth to bedrock	0.01
	Slope	0.26			Gravel content	0.01
KnD:						
Kensington	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.86
	Seepage, bottom layer	1.00			Gravel content	0.03
	Depth to saturated zone	0.99				
LbA:						
Lobdell	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
	Seepage, bottom layer	1.00				

TABLE 24.--SANITARY FACILITIES PART 2--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
LnA:						
Lorain	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
McB:						
Mechanicsburg	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	0.42
	Seepage, bottom layer	1.00	Depth to bedrock	0.42	Gravel content	0.38
McC:						
Mechanicsburg	Very limited		Very limited		Somewhat limited	
	Depth to bedrock	1.00	Seepage	1.00	Too clayey	0.50
	Seepage, bottom layer	1.00	Depth to bedrock	0.42	Depth to bedrock	0.42
	Too clayey	0.50	Slope	0.26	Slope	0.26
	Slope	0.26			Gravel content	0.13
MnB:						
Morristown	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Gravel content	0.88
					Too clayey	0.50
MnD:						
Morristown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50	Slippage	0.50	Gravel content	0.94
					Too clayey	0.50
MoB:						
Morristown	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Gravel content	0.92
	Large stones content	0.05			Too clayey	0.50
					Large stones content	0.05
MoD:						
Morristown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50	Slippage	0.50	Gravel content	0.92
	Large stones content	0.05			Too clayey	0.50
					Large stones content	0.05
OdA:						
Olmsted	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
	Seepage, bottom layer	1.00	Seepage	1.00		
Valley	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00

TABLE 24.--SANITARY FACILITIES PART 2--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
OmB:						
Omulga	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Too clayey	0.50			Too clayey	0.50
OmC:						
Omulga	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Slope	0.26	Slope	0.26	Slope	0.26
OrA:						
Orrville	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	Gravel content	0.03
	Seepage, bottom layer	1.00	Seepage	1.00		
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
	Seepage, bottom layer	1.00				
RaC2:						
Rainsboro	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Seepage, bottom layer	1.00	Slope	0.04	Slope	0.04
	Slope	0.04				
RbC:						
Rainsboro	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	0.96
	Seepage, bottom layer	1.00	Slope	0.04	Slope	0.04
	Slope	0.04				
ReA:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
ReB:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
RhD:						
Richland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	1.00	Too clayey	0.50
	Too clayey	0.50			Gravel content	0.49
					Depth to saturated zone	0.11

TABLE 24.--SANITARY FACILITIES PART 2--Continued

Map symbol and soil name	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
RhE:						
Richland	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	1.00	Gravel content	0.80
			Slippage	0.50	Depth to saturated zone	0.80
					Too clayey	0.50
RsB:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
RsC:						
Rittman	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	Slope	0.04	Too clayey	0.50
	Slope	0.04			Slope	0.04
RsD2:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50			Too clayey	0.50
TeB:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
TeC:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Slope	0.26	Slope	0.26
	Slope	0.26				
TeC2:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Slope	0.26	Slope	0.26
	Slope	0.26				
ToA:						
Tioga	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Seepage, bottom layer	1.00	Seepage	1.00		
Ua:						
Udorthents	Not rated		Very limited		Somewhat limited	
			Seepage	1.00	Slope	0.91
			Slope	0.91	Gravel content	0.16
Ub:						
Udorthents	Not rated		Very limited		Very limited	
			Seepage	1.00	Gravel content	1.00
			Slope	0.91	Slope	0.91
Uc:						
Udorthents	Not rated		Very limited		Very limited	
			Slope	1.00	Slope	1.00
			Seepage	1.00	Gravel content	0.19
Pits	Not rated		Not rated		Not rated	

TABLE 24.--SANITARY FACILITIES PART 2--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
UkC2:						
Upshur	Very limited		Somewhat limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	0.88	Too clayey	1.00
	Too clayey	1.00	Slippage	0.50	Hard to compact	1.00
	Slope	0.26	Slope	0.26	Depth to bedrock	0.88
					Slope	0.26
Berks	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	1.00	Gravel content	0.98
	Slope	0.26	Slope	0.26	Slope	0.26
UkD2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Slippage	0.50	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.97
UkE2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Slippage	1.00	Slope	1.00
	Depth to bedrock	1.00	Slope	1.00	Too clayey	1.00
	Too clayey	1.00	Depth to bedrock	0.42	Hard to compact	1.00
					Depth to bedrock	0.42
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	1.00
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.75	Depth to saturated zone	0.86
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.96	Depth to saturated zone	0.98
	Slope	0.04	Slope	0.04	Slope	0.04
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Very limited		Very limited		Somewhat limited	
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.38

TABLE 24.--SANITARY FACILITIES PART 2--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
VaA:						
Valley	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
VbA:						
Valley	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
VcA:						
Valley	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
Lorain	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
	Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	1.00			Too clayey	1.00
					Hard to compact	1.00
VnB:						
Vandergrift	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Depth to bedrock	0.05	Too clayey	1.00
	Too clayey	1.00			Hard to compact	1.00
					Depth to bedrock	0.05
VnC:						
Vandergrift	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Slippage	0.50	Too clayey	1.00
	Too clayey	1.00	Slope	0.26	Hard to compact	1.00
	Slope	0.26			Slope	0.26
					Gravel content	0.01
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50
WaB:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too clayey	0.50			Too clayey	0.50

TABLE 24.--SANITARY FACILITIES PART 2--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
WkE:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Depth to bedrock	0.42	Gravel content	0.72
					Depth to bedrock	0.42
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Seepage	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Depth to bedrock	1.00	Gravel content	0.99
WkF:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Too clayey	0.50	Slippage	0.50	Gravel content	0.70
					Too clayey	0.50
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to bedrock	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00	Gravel content	0.99
WmC:						
Westmoreland	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Slope	0.50	Slope	0.50
	Slope	0.50			Gravel content	0.34
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00	Slope	0.50	Slope	0.50
	Slope	0.50				
	Too clayey	0.50				
WmD:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00			Too clayey	0.50
	Too clayey	0.50			Gravel content	0.17
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
	Slope	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Depth to bedrock	1.00			Too clayey	0.50
	Too clayey	0.50			Gravel content	0.08
WoA:						
Wick	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	1.00
	Too clayey	1.00			Hard to compact	1.00
ZeA:						
Zepernick	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		

TABLE 25.--AGRICULTURAL WASTE 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 on page 238 for further explanation of ratings in this table.)

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmF:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Slow water movement	0.41	Too acid	0.31	Too steep for sprinkler application	1.00
	Too acid	0.08	Slow water movement	0.31	Too acid	0.31
					Slow water movement	0.31
BkB:						
Berks	Very limited		Very limited		Very limited	
	Droughty	1.00	Low adsorption	1.00	Droughty	1.00
	Too acid	0.43	Droughty	1.00	Too acid	0.99
	Depth to bedrock	0.06	Too acid	0.99	Too steep for surface application	0.08
			Depth to bedrock	0.06	Depth to bedrock	0.06
BkC:						
Berks	Very limited		Very limited		Very limited	
	Droughty	1.00	Droughty	1.00	Droughty	1.00
	Depth to bedrock	0.95	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
	Slope	0.26	Depth to bedrock	0.95	Depth to bedrock	0.95
			Slope	0.26	Too steep for sprinkler application	0.50
BkD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.90	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
			Depth to bedrock	0.90	Depth to bedrock	0.90
BkE:						
Berks	Not rated		Not rated		Not rated	
BmB:						
Berks	Very limited		Very limited		Very limited	
	Droughty	1.00	Droughty	1.00	Droughty	1.00
	Depth to bedrock	0.97	Low adsorption	1.00	Too acid	0.99
	Too acid	0.43	Too acid	0.99	Depth to bedrock	0.97
			Depth to bedrock	0.97	Too steep for surface application	0.08
Urban Land	Not rated		Not rated		Not rated	

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BmC:						
Berks	Very limited		Very limited		Very limited	
	Droughty	1.00	Droughty	1.00	Droughty	1.00
	Depth to bedrock	0.97	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
	Slope	0.26	Depth to bedrock	0.97	Depth to bedrock	0.97
			Slope	0.26	Too steep for sprinkler application	0.50
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.95	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
			Depth to bedrock	0.95	Depth to bedrock	0.95
Urban Land	Not rated		Not rated		Not rated	
BpF:						
Bethesda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Dense layer	1.00	Too acid	1.00	Too steep for sprinkler application	1.00
	Too acid	0.73	Droughty	0.58	Too acid	1.00
	Droughty	0.58	Slow water movement	0.31	Droughty	0.58
	Slow water movement	0.41			Slow water movement	0.31
BsC2:						
Bogart	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	0.04	Slope	0.04	Too steep for surface application	1.00
	Too acid	0.01	Too acid	0.01	Too steep for sprinkler application	0.22
					Too acid	0.01
BtA:						
Bogart	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too acid	0.27	Too acid	0.85	Too acid	0.85

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
BtB:						
Bogart	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too acid	0.01	Too acid	0.03	Too steep for surface application	0.08
					Too acid	0.03
BtC:						
Bogart	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Too acid	0.43	Too acid	0.99	Too steep for surface application	1.00
	Slope	0.04	Slope	0.04	Too acid	0.99
					Too steep for sprinkler application	0.22
CaA:						
Calcutta	Not rated		Not rated		Not rated	
CcB:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Dense layer	1.00	Droughty	0.65	Droughty	0.65
	Droughty	0.65	Too acid	0.31	Too acid	0.31
	Too acid	0.08			Too steep for surface application	0.08
CcC:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.35	Droughty	0.35	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Droughty	0.35
	Slope	0.04	Slope	0.04	Too acid	0.31
					Too steep for sprinkler application	0.22
CcD:						
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Dense layer	1.00	Droughty	0.81	Too steep for sprinkler application	1.00
	Droughty	0.81	Too acid	0.31	Droughty	0.81
	Too acid	0.08			Too acid	0.31

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
CcE:						
Canfield	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00	Too steep for surface application	1.00
	Droughty	0.33	Droughty	0.33	Too steep for sprinkler application	1.00
	Too acid	0.08	Too acid	0.31	Droughty	0.33
					Too acid	0.31
CeA:						
Carlisle	Not rated		Not rated		Not rated	
CfD2:						
Chili	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Too acid	0.31
					Filtering capacity	0.01
ChA:						
Chili	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Too acid	0.08	Too acid	0.31	Too acid	0.31
ChB:						
Chili	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Too acid	0.08	Too acid	0.31	Too acid	0.31
					Too steep for surface application	0.08
ChC:						
Chili	Somewhat limited		Somewhat limited		Very limited	
	Too acid	0.08	Too acid	0.31	Too steep for surface application	1.00
	Slope	0.04	Slope	0.04	Too acid	0.31
	Filtering capacity	0.01	Filtering capacity	0.01	Too steep for sprinkler application	0.22
					Filtering capacity	0.01
CmB:						
Conotton	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Leaching	0.45	Too acid	0.42	Too acid	0.42
	Too acid	0.11	Droughty	0.09	Droughty	0.09
	Droughty	0.09			Too steep for surface application	0.08

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
CmC:						
Conotton	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Leaching	0.45	Too acid	0.42	Too steep for surface application	1.00
	Slope	0.26	Slope	0.26	Too steep for sprinkler application	0.50
	Droughty	0.12	Droughty	0.12	Too acid	0.42
	Too acid	0.11			Droughty	0.12
CoB:						
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Low adsorption	1.00	Too acid	0.77
	Too acid	0.22	Too acid	0.77	Slow water movement	0.31
			Slow water movement	0.31	Too steep for surface application	0.08
CoC:						
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Slow water movement	0.31	Too steep for sprinkler application	0.50
			Slope	0.26	Slow water movement	0.31
CoD:						
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Slow water movement	0.41	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.22	Too acid	0.77	Too acid	0.77
			Slow water movement	0.31	Slow water movement	0.31
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Slow water movement	0.31	Slow water movement	0.31
	Droughty	0.01	Droughty	0.01	Droughty	0.01

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
ErC:						
Ernest	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.91	Droughty	0.91	Too steep for surface application	1.00
	Slope	0.26	Too acid	0.67	Droughty	0.91
	Too acid	0.18	Slope	0.26	Too acid	0.67
					Too steep for sprinkler application	0.50
ErD:						
Ernest	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.78	Too acid	1.00	Too steep for sprinkler application	1.00
	Droughty	0.17	Droughty	0.17	Too acid	1.00
					Droughty	0.17
FbB:						
Fairpoint	Very limited		Somewhat limited		Somewhat limited	
	Dense layer	1.00	Droughty	0.46	Droughty	0.46
	Droughty	0.46	Slow water movement	0.31	Slow water movement	0.31
	Slow water movement	0.41			Too steep for surface application	0.08
FbD:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Dense layer	1.00	Droughty	0.50	Too steep for sprinkler application	1.00
	Droughty	0.50	Slow water movement	0.31	Droughty	0.50
	Slow water movement	0.41			Slow water movement	0.31
FbF:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Dense layer	1.00	Droughty	0.50	Too steep for sprinkler application	1.00
	Droughty	0.50	Slow water movement	0.31	Droughty	0.50
	Slow water movement	0.41			Slow water movement	0.31

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
FcB:						
Fairpoint----------	Very limited		Somewhat limited		Somewhat limited	
	Dense layer	1.00	Slow water movement	0.31	Slow water movement	0.31
	Slow water movement	0.41	Droughty	0.27	Droughty	0.27
	Droughty	0.27			Too steep for surface application	0.08
FcD:						
Fairpoint----------	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Dense layer	1.00	Slow water movement	0.31	Too steep for sprinkler application	1.00
	Slow water movement	0.41	Droughty	0.27	Slow water movement	0.31
	Droughty	0.27			Droughty	0.27
FdA:						
Fitchville----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Slow water movement	0.31	Slow water movement	0.31
FdB:						
Fitchville----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Slow water movement	0.31	Slow water movement	0.31
					Too steep for surface application	0.08
FeA:						
Fluvaquents---------	Not rated		Not rated		Not rated	
FnC2:						
Fredericktown-------	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.26	Too acid	0.31	Too steep for surface application	1.00
	Too acid	0.08	Slope	0.26	Too steep for sprinkler application	0.50
	Filtering capacity	0.01	Filtering capacity	0.01	Too acid	0.31
					Filtering capacity	0.01

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FnD2:						
Fredericktown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	1.00
	Filtering capacity	0.01	Filtering capacity	0.01	Too acid	0.31
					Filtering capacity	0.01
FoB:						
Fredericktown	Somewhat limited		Somewhat limited		Somewhat limited	
	Too acid	0.08	Too acid	0.31	Too acid	0.31
	Filtering capacity	0.01	Filtering capacity	0.01	Too steep for surface application	0.08
					Filtering capacity	0.01
FrA:						
Frenchtown	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
	Droughty	0.67	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Droughty	0.67	Droughty	0.67
GaB:						
Gavers	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.74	Slow water movement	0.60	Slow water movement	0.60
	Too acid	0.08	Too acid	0.31	Too acid	0.31
					Too steep for surface application	0.08
GeC:						
Germano	Somewhat limited		Very limited		Very limited	
	Droughty	0.74	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Droughty	0.74	Droughty	0.74
	Depth to bedrock	0.20	Too acid	0.31	Too steep for sprinkler application	0.50
	Too acid	0.08	Slope	0.26	Too acid	0.31
	Filtering capacity	0.01	Depth to bedrock	0.20	Depth to bedrock	0.20
GeD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Droughty	0.75	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.08	Droughty	0.75	Droughty	0.75
	Depth to bedrock	0.06	Too acid	0.31	Too acid	0.31
	Filtering capacity	0.01	Depth to bedrock	0.06	Depth to bedrock	0.06

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
GnB:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Droughty	0.99	Low adsorption	1.00	Too acid	1.00
	Depth to bedrock	0.97	Too acid	1.00	Droughty	0.99
	Too acid	0.73	Droughty	0.99	Depth to bedrock	0.97
			Depth to bedrock	0.97	Too steep for surface application	0.08
GnC:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Droughty	0.92	Low adsorption	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.84	Too acid	1.00	Too acid	1.00
	Too acid	0.73	Droughty	0.92	Droughty	0.92
	Slope	0.26	Depth to bedrock	0.84	Depth to bedrock	0.84
			Slope	0.26	Too steep for sprinkler application	0.50
GnD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.73	Slope	1.00	Too steep for sprinkler application	1.00
	Droughty	0.59	Too acid	1.00	Too acid	1.00
	Depth to bedrock	0.46	Droughty	0.59	Droughty	0.59
			Depth to bedrock	0.46	Depth to bedrock	0.46
GoC:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Droughty	0.88	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.73	Too acid	1.00	Too acid	1.00
	Depth to bedrock	0.65	Droughty	0.88	Droughty	0.88
	Slope	0.26	Depth to bedrock	0.65	Depth to bedrock	0.65
			Slope	0.26	Too steep for sprinkler application	0.50
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Slow water movement	0.31	Too steep for sprinkler application	0.50
			Slope	0.26	Slow water movement	0.31

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
GoD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Droughty	0.76	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.73	Too acid	1.00	Too acid	1.00
	Depth to bedrock	0.65	Droughty	0.76	Droughty	0.76
			Depth to bedrock	0.65	Depth to bedrock	0.65
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Slow water movement	0.41	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.22	Too acid	0.77	Too acid	0.77
			Slow water movement	0.31	Slow water movement	0.31
GpC:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Too acid	0.73	Low adsorption	1.00	Too steep for surface application	1.00
	Droughty	0.62	Too acid	1.00	Too acid	1.00
	Depth to bedrock	0.46	Droughty	0.62	Droughty	0.62
	Slope	0.26	Depth to bedrock	0.46	Too steep for sprinkler application	0.50
			Slope	0.26	Depth to bedrock	0.46
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Slow water movement	0.31	Too steep for sprinkler application	0.50
			Slope	0.26	Slow water movement	0.31
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Slow water movement	0.31	Slow water movement	0.31
					Too steep for surface	0.08

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
					application	
GrC:						
Glenford----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.41	Too acid	0.31	Too steep for surface application	1.00
	Slope	0.26	Slow water movement	0.31	Too steep for sprinkler application	0.50
	Too acid	0.08	Slope	0.26	Too acid	0.31
					Slow water movement	0.31
GuC:						
Guernsey----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.75	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Slow water movement	0.61	Slow water movement	0.61
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	0.50
			Slope	0.26	Too acid	0.31
GuC2:						
Guernsey----------	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.75	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Slow water movement	0.61	Slow water movement	0.61
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	0.50
			Slope	0.26	Too acid	0.31
GuD:						
Guernsey----------	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Slow water movement	0.75	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.08	Slow water movement	0.61	Slow water movement	0.61
			Too acid	0.31	Too acid	0.31
HeB:						
Hazleton----------	Somewhat limited		Very limited		Very limited	
	Too acid	0.73	Low adsorption	1.00	Too acid	1.00
	Droughty	0.46	Too acid	1.00	Droughty	0.46
	Filtering capacity	0.01	Droughty	0.46	Too steep for surface application	0.08
			Filtering capacity	0.01	Filtering capacity	0.01

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HeC:						
Hazleton	Somewhat limited		Very limited		Very limited	
	Too acid	0.73	Low adsorption	1.00	Too steep for surface application	1.00
	Droughty	0.40	Too acid	1.00	Too acid	1.00
	Slope	0.26	Droughty	0.40	Too steep for sprinkler application	0.50
	Filtering capacity	0.01	Slope	0.26	Droughty	0.40
			Filtering capacity	0.01	Filtering capacity	0.01
HeD:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.73	Slope	1.00	Too steep for sprinkler application	1.00
	Droughty	0.01	Too acid	1.00	Too acid	1.00
	Filtering capacity	0.01	Droughty	0.01	Droughty	0.01
			Filtering capacity	0.01	Filtering capacity	0.01
HeE:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.73	Slope	1.00	Too steep for sprinkler application	1.00
	Droughty	0.24	Too acid	1.00	Too acid	1.00
	Filtering capacity	0.01	Droughty	0.24	Droughty	0.24
			Filtering capacity	0.01	Filtering capacity	0.01
HfF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.73	Slope	1.00	Too steep for sprinkler application	1.00
	Droughty	0.53	Too acid	1.00	Too acid	1.00
	Filtering capacity	0.01	Droughty	0.53	Droughty	0.53
			Filtering capacity	0.01	Filtering capacity	0.01
Rock Outcrop	Not rated		Not rated		Not rated	

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
HgF:						
Hazleton	Not rated		Not rated		Not rated	
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.73	Slope	1.00	Too steep for sprinkler application	1.00
	Filtering capacity	0.01	Too acid	1.00	Too acid	1.00
			Filtering capacity	0.01	Filtering capacity	0.01
HkA:						
Holly	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	1.00	Flooding	1.00
	Leaching	0.70	Low adsorption	1.00	Too acid	0.07
	Too acid	0.02	Too acid	0.07		
HlB:						
Homewood	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Dense layer	1.00	Low adsorption	1.00	Droughty	0.34
	Droughty	0.34	Droughty	0.34	Too steep for surface application	0.08
	Too acid	0.02	Too acid	0.07	Too acid	0.07
HmA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Too acid	0.02	Too acid	0.07	Too acid	0.07
HmB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Too acid	0.02	Too acid	0.07	Too steep for surface application	0.08
	Strongly contrasting textural stratification	0.01	Strongly contrasting textural stratification	0.01	Too acid	0.07
HoA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Too acid	0.02	Too acid	0.07	Too acid	0.07

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
HoB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Too acid	0.02	Too acid	0.07	Too steep for surface application	0.08
	Strongly contrasting textural stratification	0.01	Strongly contrasting textural stratification	0.01	Too acid	0.07
JwA:						
Jimtown	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 acid	0.02	Too acid	0.07	Too acid	0.07
	Filtering capacity	0.01	Filtering capacity	0.01	Filtering capacity	0.01
JwB:						
Jimtown	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 acid	0.11	Too acid	0.42	Too acid	0.42
	Filtering capacity	0.01	Filtering capacity	0.01	Too steep for surface application	0.08
					Filtering capacity	0.01
KeB:						
Keene	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.74	Low adsorption	1.00	Slow water movement	0.60
	Too acid	0.08	Slow water movement	0.60	Too acid	0.31
			Too acid	0.31	Too steep for surface application	0.08
KnB:						
Kensington	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 acid	0.08	Low adsorption	1.00	Too acid	0.31
			Too acid	0.31	Too steep for surface application	0.08
KnC:						
Kensington	Very limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	0.50
	Filtering capacity	0.01	Slope	0.26	Too acid	0.31
			Filtering capacity	0.01	Filtering capacity	0.01
KnD:						

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
Kensington----------	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Depth to saturated zone	0.99	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.08	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Filtering capacity	0.01	Too acid	0.31	Too acid	0.31
			Filtering capacity	0.01	Filtering capacity	0.01
LbA:						
Lobdell----------	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	1.00	Flooding	0.60
	Too acid	0.02	Too acid	0.07	Too acid	0.07
LnA:						
Lorain----------	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
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Leaching	0.50	Too acid	0.01	Too acid	0.01
	Too acid	0.01				
McB:						
Mechanicsburg-------	Somewhat limited		Very limited		Somewhat limited	
	Too acid	0.08	Low adsorption	1.00	Too acid	0.31
	Filtering capacity	0.01	Too acid	0.31	Too steep for surface application	0.08
			Filtering capacity	0.01	Filtering capacity	0.01
McC:						
Mechanicsburg-------	Somewhat limited		Very limited		Very limited	
	Slope	0.26	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Too steep for sprinkler application	0.50
	Filtering capacity	0.01	Slope	0.26	Too acid	0.31
			Filtering capacity	0.01	Filtering capacity	0.01
MnB:						
Morristown----------	Very limited		Somewhat limited		Somewhat limited	
	Dense layer	1.00	Slow water movement	0.31	Slow water movement	0.31
	Slow water movement	0.41	Droughty	0.23	Droughty	0.23
	Droughty	0.23			Too steep for surface application	0.08

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
MnD:						
Morristown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Dense layer	1.00	Droughty	0.36	Too steep for sprinkler application	1.00
	Slow water movement	0.41	Slow water movement	0.31	Droughty	0.36
	Droughty	0.36			Slow water movement	0.31
MoB:						
Morristown	Very limited		Somewhat limited		Somewhat limited	
	Dense layer	1.00	Droughty	0.55	Droughty	0.55
	Droughty	0.55	Slow water movement	0.31	Slow water movement	0.31
	Slow water movement	0.41			Too steep for surface application	0.08
MoD:						
Morristown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Dense layer	1.00	Droughty	0.57	Too steep for sprinkler application	1.00
	Droughty	0.57	Slow water movement	0.31	Droughty	0.57
	Slow water movement	0.41			Slow water movement	0.31
OdA:						
Olmsted	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
	Leaching	0.70	Too acid	1.00	Too acid	1.00
	Too acid	0.62	Filtering capacity	0.01	Filtering capacity	0.01
	Filtering capacity	0.01				
Valley	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
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Leaching	0.50	Too acid	0.14	Too acid	0.14
	Too acid	0.03				
OmB:						
Omulga	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 acid	0.08	Too acid	0.31	Too acid	0.31
					Too steep for surface application	0.08

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
OmC:						
Omulga	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Dense layer	1.00	Droughty	0.34	Too steep for surface application	1.00
	Droughty	0.34	Too acid	0.31	Too steep for sprinkler application	0.50
	Slope	0.26	Slope	0.26	Droughty	0.34
	Too acid	0.08			Too acid	0.31
OrA:						
Orrville	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	1.00	Flooding	0.60
	Too acid	0.02	Too acid	0.07	Too acid	0.07
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	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 acid	0.37	Too acid	0.96	Too acid	0.96
	Droughty	0.05	Droughty	0.05	Too steep for surface application	0.08
					Droughty	0.05
RaC2:						
Rainsboro	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 acid	0.37	Too acid	0.96	Too steep for surface application	1.00
	Droughty	0.10	Droughty	0.10	Too acid	0.96
	Slope	0.04	Slope	0.04	Too steep for sprinkler application	0.22
					Droughty	0.10
RbC:						
Rainsboro	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Dense layer	1.00	Too acid	0.99	Too steep for surface application	1.00
	Too acid	0.50	Droughty	0.12	Too acid	0.99
	Droughty	0.12	Slope	0.04	Too steep for sprinkler application	0.22
	Slope	0.04			Droughty	0.12
ReA:						
Ravenna	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 acid	0.62	Too acid	1.00	Too acid	1.00
	Droughty	0.53	Droughty	0.53	Droughty	0.53

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
ReB:						
Ravenna	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.35	Droughty	0.35	Droughty	0.35
	Too acid	0.01	Too acid	0.01	Too steep for surface application	0.08
					Too acid	0.01
RhD:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to saturated zone	0.46	Depth to saturated zone	0.46	Too steep for sprinkler application	1.00
	Too acid	0.02	Too acid	0.07	Depth to saturated zone	0.46
					Too acid	0.07
RhE:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	0.99	Too steep for sprinkler application	1.00
	Too acid	0.43	Too acid	0.99	Depth to saturated zone	0.99
					Too acid	0.99
RsB:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Dense layer	1.00	Droughty	0.82	Droughty	0.82
	Droughty	0.82	Too acid	0.77	Too acid	0.77
	Too acid	0.22			Too steep for surface application	0.08
RsC:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.62	Too acid	0.77	Too steep for surface application	1.00
	Too acid	0.22	Droughty	0.62	Too acid	0.77
	Slope	0.04	Slope	0.04	Droughty	0.62
					Too steep for sprinkler application	0.22

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
RsD2:						
Rittman	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Too steep for surface application	1.00
	Dense layer	1.00	Droughty	0.95	Too steep for sprinkler application	1.00
	Droughty	0.95	Too acid	0.77	Droughty	0.95
	Too acid	0.22			Too acid	0.77
TeB:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Dense layer	1.00	Droughty	0.71	Droughty	0.71
	Droughty	0.71	Too acid	0.31	Too acid	0.31
	Too acid	0.08			Too steep for surface application	0.08
TeC:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.47	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Droughty	0.47	Too steep for sprinkler application	0.50
	Too acid	0.08	Too acid	0.31	Droughty	0.47
			Slope	0.26	Too acid	0.31
TeC2:						
Teegarden	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.47	Low adsorption	1.00	Too steep for surface application	1.00
	Slope	0.26	Droughty	0.47	Too steep for sprinkler application	0.50
	Too acid	0.08	Too acid	0.31	Droughty	0.47
			Slope	0.26	Too acid	0.31
ToA:						
Tioga	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Flooding	0.60
	Too acid	0.02	Too acid	0.07	Too acid	0.07
Ua:						
Udorthents	Not rated		Not rated		Not rated	
Ub:						
Udorthents	Not rated		Not rated		Not rated	
Uc:						
Udorthents	Not rated		Not rated		Not rated	
Pits	Not rated		Not rated		Not rated	

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste		Application of sewage sludge		Disposal of wastewater by irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UkC2:						
Upshur	Very limited		Very limited		Very limited	
	Slow water movement	1.00	Low adsorption	1.00	Slow water movement	1.00
	Runoff	0.40	Slow water movement	1.00	Too steep for surface application	1.00
	Slope	0.26	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Slope	0.26	Too steep for sprinkler application	0.50
	Droughty	0.07	Droughty	0.07	Droughty	0.07
Berks	Very limited		Very limited		Very limited	
	Droughty	1.00	Droughty	1.00	Droughty	1.00
	Depth to bedrock	0.90	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
	Slope	0.26	Depth to bedrock	0.90	Depth to bedrock	0.90
	Filtering capacity	0.01	Slope	0.26	Too steep for sprinkler application	0.50
UkD2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Slope	1.00	Too steep for sprinkler application	1.00
	Runoff	0.40	Slow water movement	1.00	Slow water movement	1.00
	Too acid	0.22	Too acid	0.77	Too acid	0.77
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.97	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
			Depth to bedrock	0.97	Depth to bedrock	0.97
UkE2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Slow water movement	1.00	Slope	1.00	Too steep for sprinkler application	1.00
	Runoff	0.40	Slow water movement	1.00	Slow water movement	1.00
	Too acid	0.22	Too acid	0.77	Too acid	0.77

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.97	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
			Depth to bedrock	0.97	Depth to bedrock	0.97
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
	Droughty	0.19	Too acid	0.31	Too acid	0.31
	Too acid	0.08	Droughty	0.19	Droughty	0.19
					Too steep for surface application	0.08
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.57	Droughty	0.57	Too steep for surface application	1.00
	Too acid	0.08	Too acid	0.31	Droughty	0.57
	Slope	0.04	Slope	0.04	Too acid	0.31
					Too steep for sprinkler application	0.22
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Very limited		Very limited		Very limited	
	Filtering capacity	1.00	Filtering capacity	1.00	Filtering capacity	1.00
	Too acid	0.08	Too acid	0.31	Too acid	0.31
					Too steep for surface application	0.08
VaA:						
Valley	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
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Leaching	0.50	Too acid	0.14	Too acid	0.14
	Too acid	0.03				

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
VbA:						
Valley	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
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Leaching	0.50	Too acid	0.14	Too acid	0.14
	Too acid	0.03				
VcA:						
Valley	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
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Leaching	0.50	Too acid	0.14	Too acid	0.14
	Too acid	0.03				
Lorain	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
	Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
	Leaching	0.50	Too acid	0.01	Too acid	0.01
	Too acid	0.01				
VnB:						
Vandergrift	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Low adsorption	1.00	Slow water movement	1.00
	Too acid	0.32	Slow water movement	1.00	Too acid	0.91
			Too acid	0.91	Too steep for surface application	0.08
VnC:						
Vandergrift	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	1.00	Low adsorption	1.00	Slow water movement	1.00
	Too acid	0.32	Slow water movement	1.00	Too steep for surface application	1.00
	Slope	0.26	Too acid	0.91	Too acid	0.91
			Slope	0.26	Too steep for sprinkler application	0.50
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.62	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Droughty	0.62	Droughty	0.62

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
WaB:						
Wadsworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Droughty	0.35	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Droughty	0.35	Droughty	0.35
					Too steep for surface application	0.08
WkE:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.32	Slope	1.00	Too steep for sprinkler application	1.00
			Too acid	0.91	Too acid	0.91
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.90	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
	Filtering capacity	0.01	Depth to bedrock	0.90	Depth to bedrock	0.90
WkF:						
Westmoreland	Not rated		Not rated		Not rated	
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Droughty	1.00	Droughty	1.00
	Droughty	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Depth to bedrock	0.97	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.43	Too acid	0.99	Too acid	0.99
			Depth to bedrock	0.97	Depth to bedrock	0.97
WmC:						
Westmoreland	Somewhat limited		Very limited		Very limited	
	Slope	0.50	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.32	Too acid	0.91	Too acid	0.91
			Slope	0.50	Too steep for sprinkler application	0.70

TABLE 25.--AGRICULTURAL WASTE MANAGEMENT--Continued

Map symbol and soil name	Application of manure and food-processing waste: Rating class and limiting features	Value	Application of sewage sludge: Rating class and limiting features	Value	Disposal of wastewater by irrigation: Rating class and limiting features	Value
Coshocton	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slope	0.50	Low adsorption	1.00	Too steep for surface application	1.00
	Slow water movement	0.41	Too acid	0.77	Too acid	0.77
	Too acid	0.22	Slope	0.50	Too steep for sprinkler application	0.70
			Slow water movement	0.31	Slow water movement	0.31
WmD:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Too acid	0.32	Slope	1.00	Too steep for sprinkler application	1.00
			Too acid	0.91	Too acid	0.91
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to saturated zone	1.00	Low adsorption	1.00	Too steep for surface application	1.00
	Slow water movement	0.41	Slope	1.00	Too steep for sprinkler application	1.00
	Too acid	0.22	Too acid	0.77	Too acid	0.77
			Slow water movement	0.31	Slow water movement	0.31
WoA:						
Wick	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	1.00	Flooding	1.00
	Runoff	0.40	Too acid	0.85	Too acid	0.85
	Too acid	0.27				
ZeA:						
Zepernick	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	1.00	Flooding	0.60
	Too acid	0.08	Too acid	0.31	Too acid	0.31

TABLE 26.--WATER MANAGEMENT PART 1

(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 on page 238 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
AmF:						
Amanda	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.50	Depth to water	1.00
	Slippage	0.50				
	Seepage	0.50				
BkB:						
Berks	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.80	Depth to water	1.00
	Depth to bedrock	0.66				
BkC:						
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.99				
	Slope	0.01				
BkD:						
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.98				
	Slope	0.12				
BkE:						
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.99				
	Slope	0.62				
BmB:						
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.99				
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.99				
	Slope	0.01				
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.99				
	Slope	0.12				
Urban Land	Not rated		Not rated		Not rated	
BpF:						
Bethesda	Very limited		Somewhat limited		Very limited	
	Slippage	1.00	Large stones content	0.06	Depth to water	1.00
	Slope	0.99				

TABLE 26.--WATER MANAGEMENT PART 1--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
BsC2:						
Bogart	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.50
			Piping	0.50		
BtA:						
Bogart	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.50
			Piping	0.50		
BtB:						
Bogart	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.50
			Piping	0.50		
BtC:						
Bogart	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.50
			Piping	0.50		
CaA:						
Calcutta	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Depth to water	1.00
CcB:						
Canfield	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.90	Depth to water	1.00
			Piping	0.50		
CcC:						
Canfield	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.85	Depth to water	1.00
			Piping	0.50		
CcD:						
Canfield	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.90	Depth to water	1.00
	Slope	0.04	Piping	0.50		
CcE:						
Canfield	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.75	Depth to water	1.00
	Slope	0.38	Piping	0.50		
CeA:						
Carlisle	Very limited		Not rated		Not rated	
	Seepage	1.00				
CfD2:						
Chili	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.04				
ChA:						
Chili	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
ChB:						
Chili	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
ChC:						
Chili	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00

TABLE 26.--WATER MANAGEMENT PART 1--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
CmB:						
Conotton	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.50	Depth to water	1.00
CmC:						
Conotton	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Seepage	0.50	Depth to water	1.00
	Slope	0.01				
CoB:						
Coshocton	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.25	Depth to saturated zone	0.85	Depth to water	1.00
CoC:						
Coshocton	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.06	Depth to saturated zone	0.85	Depth to water	1.00
	Slope	0.01	Piping	0.50		
			Thin layer	0.26		
CoD:						
Coshocton	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.85	Depth to water	1.00
	Slope	0.12				
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Not limited		Very limited		Very limited	
			Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
ErC:						
Ernest	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.90	Depth to water	1.00
	Slope	0.01	Piping	0.50		
ErD:						
Ernest	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.75	Depth to water	1.00
	Slope	0.12	Piping	0.50		
FbB:						
Fairpoint	Not limited		Not limited		Very limited	
					Depth to water	1.00
FbD:						
Fairpoint	Somewhat limited		Not limited		Very limited	
	Slippage	0.50			Depth to water	1.00
	Slope	0.05				
FbF:						
Fairpoint	Very limited		Not limited		Very limited	
	Slippage	1.00			Depth to water	1.00
	Slope	0.99				
FcB:						
Fairpoint	Not limited		Not limited		Very limited	
					Depth to water	1.00
FcD:						
Fairpoint	Somewhat limited		Not limited		Very limited	
	Slippage	0.50			Depth to water	1.00
	Slope	0.05				

TABLE 26.--WATER MANAGEMENT PART 1--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
FdA:						
Fitchville	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Slow refill	0.46
			Piping	0.50	Cutbanks cave	0.10
FdB:						
Fitchville	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Slow refill	0.46
			Piping	0.50	Cutbanks cave	0.10
FeA:						
Fluvaquents	Somewhat limited		Not rated		Not rated	
	Seepage	0.47				
FnC2:						
Fredericktown	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	0.01				
FnD2:						
Fredericktown	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.12				
FoB:						
Fredericktown	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
FrA:						
Frenchtown	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Ponding	1.00	Depth to water	1.00
			Depth to saturated zone	1.00		
			Piping	0.50		
GaB:						
Gavers	Not limited		Very limited		Somewhat limited	
			Depth to saturated zone	1.00	Slow refill	0.96
			Piping	0.50	Cutbanks cave	0.10
GeC:						
Germano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.89	Depth to water	1.00
	Depth to bedrock	0.06				
	Slope	0.01				
GeD:						
Germano	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.80	Depth to water	1.00
	Slope	0.12				
	Depth to bedrock	0.03				
GnB:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Depth to bedrock	0.99	Thin layer	1.00	Depth to water	1.00
	Seepage	0.50	Piping	0.50		
GnC:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.26	Piping	0.50		
	Slope	0.01				
GnD:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Thin layer	1.00	Depth to water	1.00
	Slope	0.12				
	Depth to bedrock	0.11				

TABLE 26.--WATER MANAGEMENT PART 1--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
GoC:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.17	Piping	0.50		
	Slope	0.01				
Coshocton	Somewhat limited		Somewhat limited		Very limited	
	Depth to bedrock	0.01	Depth to saturated zone	0.85	Depth to water	1.00
	Slope	0.01	Piping	0.50		
			Thin layer	0.13		
GoD:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.17	Piping	0.50		
	Slope	0.12				
Coshocton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.12	Depth to saturated zone	0.85	Depth to water	1.00
	Depth to bedrock	0.01	Piping	0.50		
			Thin layer	0.13		
GpC:						
Gilpin	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.11	Piping	0.50		
	Slope	0.01				
Coshocton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.01	Depth to saturated zone	0.85	Depth to water	1.00
			Piping	0.50		
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Slow refill	0.46
			Piping	0.50	Cutbanks cave	0.10
GrC:						
Glenford	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Slow refill	0.46
	Slope	0.01	Piping	0.50	Cutbanks cave	0.10
GuC:						
Guernsey	Somewhat limited		Very limited		Somewhat limited	
	Slippage	0.50	Depth to saturated zone	1.00	Slow refill	0.98
	Slope	0.01	Hard to compact	1.00	Cutbanks cave	0.10
GuC2:						
Guernsey	Somewhat limited		Very limited		Somewhat limited	
	Slippage	0.50	Depth to saturated zone	1.00	Slow refill	0.98
	Slope	0.01	Hard to compact	1.00	Cutbanks cave	0.10
GuD:						
Guernsey	Very limited		Very limited		Somewhat limited	
	Slippage	1.00	Depth to saturated zone	1.00	Slow refill	0.98
	Slope	0.12	Hard to compact	1.00	Cutbanks cave	0.10

TABLE 26.--WATER MANAGEMENT PART 1--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
HeB:						
Hazleton	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.53	Depth to water	1.00
	Depth to bedrock	0.29	Seepage	0.50		
HeC:						
Hazleton	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.50	Depth to water	1.00
	Depth to bedrock	0.26				
	Slope	0.01				
HeD:						
Hazleton	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.07	Depth to water	1.00
	Slope	0.12				
	Depth to bedrock	0.01				
HeE:						
Hazleton	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.39	Depth to water	1.00
	Slope	0.62				
	Depth to bedrock	0.16				
HfF:						
Hazleton	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.53	Depth to water	1.00
	Slope	1.00	Seepage	0.50		
	Depth to bedrock	0.29				
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	1.00				
Westmoreland	Very limited		Somewhat limited		Very limited	
	Slope	1.00	Piping	0.50	Depth to water	1.00
	Slippage	0.50	Thin layer	0.26		
	Seepage	0.50				
	Depth to bedrock	0.06				
HkA:						
Holly	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
HlB:						
Homewood	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.62	Depth to water	1.00
			Piping	0.50		
HmA:						
Homeworth	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Depth to saturated zone	1.00	Depth to water	1.00
			Hard to compact	1.00		
HmB:						
Homeworth	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Hard to compact	1.00	Depth to water	1.00
			Depth to saturated zone	0.99		
HoA:						
Homeworth	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Depth to saturated zone	1.00	Depth to water	1.00
			Hard to compact	1.00		

TABLE 26.--WATER MANAGEMENT PART 1--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
HoB:						
Homeworth	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Hard to compact	1.00	Depth to water	1.00
			Depth to saturated zone	0.99		
JwA:						
Jimtown	Very limited		Very limited		Very limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
JwB:						
Jimtown	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.50
			Piping	0.50		
KeB:						
Keene	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.25	Depth to saturated zone	0.85	Depth to water	1.00
KnB:						
Kensington	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.85	Depth to water	1.00
	Depth to bedrock	0.01	Thin layer	0.59		
			Piping	0.50		
KnC:						
Kensington	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.01	Depth to saturated zone	0.47		
	Depth to bedrock	0.01	Thin layer	0.07		
KnD:						
Kensington	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.12	Depth to saturated zone	0.47		
LbA:						
Lobdell	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
LnA:						
Lorain	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to compact	1.00		
McB:						
Mechanicsburg	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Thin layer	0.33	Depth to water	1.00
	Depth to bedrock	0.01				
McC:						
Mechanicsburg	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.01	Thin layer	0.33		
	Depth to bedrock	0.01				
MnB:						
Morristown	Not limited		Not limited		Very limited	
					Depth to water	1.00
MnD:						
Morristown	Somewhat limited		Not limited		Very limited	
	Slippage	0.50			Depth to water	1.00
	Slope	0.05				

TABLE 26.--WATER MANAGEMENT PART 1--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
MoB:						
Morristown	Not limited		Somewhat limited		Very limited	
			Large stones content	0.03	Depth to water	1.00
MoD:						
Morristown	Somewhat limited		Somewhat limited		Very limited	
	Slippage	0.50	Large stones content	0.03	Depth to water	1.00
	Slope	0.05				
OdA:						
Olmsted	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Ponding	1.00	Cutbanks cave	0.50
			Depth to saturated zone	1.00		
Valley	Not limited		Very limited		Very limited	
			Ponding	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
OmB:						
Omulga	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.81	Depth to water	1.00
OmC:						
Omulga	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.85	Depth to water	1.00
	Slope	0.01	Piping	0.50		
OrA:						
Orrville	Very limited		Very limited		Somewhat limited	
	Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
			Piping	0.50		
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Depth to saturated zone	0.75	Depth to water	1.00
			Piping	0.50		
RaC2:						
Rainsboro	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Depth to saturated zone	0.85	Depth to water	1.00
			Piping	0.50		
RbC:						
Rainsboro	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Depth to saturated zone	0.70	Depth to water	1.00
			Piping	0.50		
ReA:						
Ravenna	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
ReB:						
Ravenna	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		

TABLE 26.--WATER MANAGEMENT PART 1--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
RhD:						
Richland	Somewhat limited		Somewhat limited		Somewhat limited	
	Seepage	0.50	Piping	0.50	Slow refill	0.28
	Slope	0.12	Depth to saturated zone	0.14	Depth to saturated zone	0.24
					Cutbanks cave	0.10
RhE:						
Richland	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.62	Depth to saturated zone	0.98	Slow refill	0.28
	Slippage	0.50			Cutbanks cave	0.10
	Seepage	0.50			Depth to saturated zone	0.01
RsB:						
Rittman	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.99	Depth to water	1.00
			Piping	0.50		
RsC:						
Rittman	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.97	Depth to water	1.00
			Piping	0.50		
RsD2:						
Rittman	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.99	Depth to water	1.00
	Slope	0.04	Piping	0.50		
TeB:						
Teegarden	Somewhat limited		Very limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.99	Depth to water	1.00
			Piping	0.50		
TeC:						
Teegarden	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.97	Depth to water	1.00
	Slope	0.01	Piping	0.50		
TeC2:						
Teegarden	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.97	Depth to water	1.00
	Slope	0.01	Piping	0.50		
ToA:						
Tioga	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
Ua:						
Udorthents	Very limited		Somewhat limited		Very limited	
	Seepage	1.00	Piping	0.50	Depth to water	1.00
	Slope	0.02				
Ub:						
Udorthents	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Slope	0.02	Piping	0.50		
Uc:						
Udorthents	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
	Slope	0.72				
Pits	Not rated		Not rated		Not rated	

TABLE 26.--WATER MANAGEMENT PART 1--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
UkC2:						
Upshur	Somewhat limited		Very limited		Very limited	
	Slippage	0.50	Hard to compact	1.00	Depth to water	1.00
	Depth to bedrock	0.01	Thin layer	0.53		
	Slope	0.01				
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.30				
	Slope	0.01				
UkD2:						
Upshur	Somewhat limited		Very limited		Very limited	
	Slippage	0.50	Hard to compact	1.00	Depth to water	1.00
	Slope	0.12				
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.99				
	Slope	0.12				
UkE2:						
Upshur	Very limited		Very limited		Very limited	
	Slippage	1.00	Hard to compact	1.00	Depth to water	1.00
	Slope	0.62	Thin layer	0.33		
	Depth to bedrock	0.01				
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.99				
	Slope	0.62				
Ur:						
Urban Land	Not rated		Not rated		Not rated	
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
			Depth to saturated zone	0.47		
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.75	Depth to water	1.00
			Piping	0.50		
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Very limited		Not limited		Very limited	
	Seepage	1.00			Depth to water	1.00
VaA:						
Valley	Not limited		Very limited		Very limited	
			Ponding	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
VbA:						
Valley	Not limited		Very limited		Very limited	
			Ponding	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10

TABLE 26.--WATER MANAGEMENT PART 1--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
VcA:						
Valley	Not limited		Very limited		Very limited	
			Ponding	1.00	Slow refill	1.00
			Depth to saturated zone	1.00	Cutbanks cave	0.10
Lorain	Not limited		Very limited		Somewhat limited	
			Ponding	1.00	Slow refill	0.96
			Depth to saturated zone	1.00	Cutbanks cave	0.10
			Hard to compact	1.00		
VnB:						
Vandergrift	Somewhat limited		Very limited		Very limited	
	Depth to bedrock	0.01	Hard to compact	1.00	Depth to water	1.00
			Depth to saturated zone	0.96		
			Thin layer	0.13		
VnC:						
Vandergrift	Somewhat limited		Very limited		Very limited	
	Slippage	0.50	Hard to compact	1.00	Depth to water	1.00
	Slope	0.01	Depth to saturated zone	0.96		
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Somewhat limited		Very limited		Very limited	
	Seepage	0.25	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
WaB:						
Wadsworth	Somewhat limited		Very limited		Very limited	
	Seepage	0.25	Depth to saturated zone	1.00	Depth to water	1.00
			Piping	0.50		
WkE:						
Westmoreland	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.62	Piping	0.50	Depth to water	1.00
	Seepage	0.50	Thin layer	0.33		
	Depth to bedrock	0.01				
Berks	Very limited		Very limited		Very limited	
	Seepage	1.00	Thin layer	1.00	Depth to water	1.00
	Depth to bedrock	0.98				
	Slope	0.62				
WkF:						
Westmoreland	Very limited		Not limited		Very limited	
	Slope	1.00			Depth to water	1.00
	Slippage	0.50				
	Seepage	0.50				
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Thin layer	1.00	Depth to water	1.00
	Seepage	1.00				
	Depth to bedrock	0.37				

TABLE 26.--WATER MANAGEMENT PART 1--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
WmC:						
Westmoreland	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Piping	0.50	Depth to water	1.00
	Slope	0.01				
Coshocton	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.50	Depth to saturated zone	0.85	Depth to water	1.00
	Slope	0.01	Piping	0.50		
WmD:						
Westmoreland	Somewhat limited		Not limited		Very limited	
	Seepage	0.50			Depth to water	1.00
	Slope	0.12				
Coshocton	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.12	Depth to saturated zone	0.85	Depth to water	1.00
WoA:						
Wick	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Slow refill	0.28
			Hard to compact	1.00	Cutbanks cave	0.10
ZeA:						
Zepernick	Somewhat limited		Very limited		Somewhat limited	
	Seepage	0.25	Depth to saturated zone	1.00	Cutbanks cave	0.50
			Piping	0.50	Slow refill	0.46

TABLE 27.--WATER MANAGEMENT PART 2

(The information in this table indicates the dominant soil condition but does not eliminate the need for on-site investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text on page 238 for further explanation of ratings in this table.)

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
AmF:						
Amanda	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
BkB:						
Berks	Very limited		Somewhat limited		Very limited	
	Depth to hard bedrock	1.00	Content of large stones	0.77	Depth to saturated zone	1.00
	Droughty	1.00	Depth to hard bedrock	0.06	Slope	0.04
	Content of large stones	0.77			Depth to bedrock	0.02
BkC:						
Berks	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Slope	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Depth to hard bedrock	0.95	Slope	1.00
	Slope	1.00	Content of large stones	0.66	Depth to bedrock	0.35
	Content of large stones	0.66				
BkD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Depth to hard bedrock	0.90	Depth to saturated zone	1.00
	Droughty	1.00	Content of large stones	0.74	Depth to bedrock	0.30
	Content of large stones	0.74				
BkE:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Depth to hard bedrock	0.97	Content of large stones	1.00
	Content of large stones	1.00			Depth to bedrock	0.39

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BmB:						
Berks	Very limited		Somewhat limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97	Depth to saturated zone	1.00
	Droughty	1.00	Content of large stones	0.78	Depth to bedrock	0.39
	Content of large stones	0.78			Slope	0.04
Urban Land	Not rated		Not rated		Not rated	
BmC:						
Berks	Very limited		Very limited		Very limited	
	Depth to hard bedrock	1.00	Slope	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Content of large stones	1.00	Slope	1.00
	Slope	1.00	Depth to hard bedrock	0.97	Content of large stones	0.99
	Content of large stones	1.00			Depth to bedrock	0.39
Urban Land	Not rated		Not rated		Not rated	
BmD:						
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Depth to hard bedrock	0.95	Content of large stones	1.00
	Content of large stones	1.00			Depth to bedrock	0.35
Urban Land	Not rated		Not rated		Not rated	
BpF:						
Bethesda	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Restricted permeability	0.22	Content of large stones	1.00
	Restricted permeability	0.22			Restricted permeability	0.22
BsC2:						
Bogart	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	1.00	Slope	1.00		
BtA:						
Bogart	Very limited		Very limited		Not limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
BtB:						
Bogart	Very limited		Very limited		Somewhat limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.04

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
BtC:						
Bogart	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to saturated zone	1.00	Slope	0.96
	Depth to saturated zone	0.99	Slope	1.00		
CaA:						
Calcutta	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.22	Restricted permeability	0.22	Restricted permeability	0.22
CcB:						
Canfield	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.04
	Depth to saturated zone	1.00	Rooting depth	1.00		
CcC:						
Canfield	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	1.00	Rooting depth	1.00		
	Depth to saturated zone	0.99	Slope	1.00		
CcD:						
Canfield	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	1.00	Rooting depth	1.00		
	Droughty	1.00				
CcE:						
Canfield	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	0.98	Rooting depth	1.00		
CeA:						
Carlisle	Not rated		Not rated		Very limited	
					Ponding	1.00
					Frost action	1.00
					Subsidence	1.00
CfD2:						
Chili	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to saturated zone	1.00
ChA:						
Chili	Not limited		Not limited		Very limited	
					Depth to saturated zone	1.00

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ChB:						
Chili	Not limited		Not limited		Very limited	
					Depth to saturated zone	1.00
					Slope	0.04
ChC:						
Chili	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
					Slope	0.96
CmB:						
Conotton	Very limited		Not limited		Very limited	
	Droughty	1.00			Depth to saturated zone	1.00
					Slope	0.04
CmC:						
Conotton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Content of large stones	0.04	Slope	1.00
	Content of large stones	0.04				
CoB:						
Coshocton	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22	Slope	0.04
CoC:						
Coshocton	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.99	Slope	1.00	Restricted permeability	0.22
	Depth to hard bedrock	0.26	Restricted permeability	0.22		
	Restricted permeability	0.22				
CoD:						
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
DAM:						
Dam	Not rated		Not rated		Not rated	
DgA:						
Doles	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
ErC:						
Ernest	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	1.00	Rooting depth	1.00		
	Slope	1.00	Slope	1.00		
	Droughty	1.00				
ErD:						
Ernest	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
	Rooting depth	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	0.98	Rooting depth	1.00		
FbB:						
Fairpoint	Very limited		Very limited		Very limited	
	Content of large stones	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Restricted permeability	0.22	Content of large stones	0.99
	Restricted permeability	0.22			Restricted permeability	0.22
					Slope	0.04
FbD:						
Fairpoint	Very limited		Very limited		Very limited	
	Content of large stones	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Droughty	1.00	Restricted permeability	0.22	Content of large stones	0.99
	Restricted permeability	0.22			Restricted permeability	0.22
FbF:						
Fairpoint	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Restricted permeability	0.22	Content of large stones	0.99
	Restricted permeability	0.22			Restricted permeability	0.22
FcB:						
Fairpoint	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
	Droughty	1.00	Restricted permeability	0.22	Restricted permeability	0.22
	Restricted permeability	0.22			Slope	0.04

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
FcD:						
Fairpoint	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Content of large stones	1.00	Content of large stones	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Content of large stones	0.99
	Droughty	1.00	Restricted permeability	0.22	Restricted permeability	0.22
	Restricted permeability	0.22				
FdA:						
Fitchville	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
FdB:						
Fitchville	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22	Slope	0.04
FeA:						
Fluvaquents	Not rated		Not rated		Not rated	
FnC2:						
Fredericktown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
					Slope	1.00
FnD2:						
Fredericktown	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
					Depth to saturated zone	1.00
FoB:						
Fredericktown	Not limited		Very limited		Very limited	
			Too sandy	1.00	Cutbanks cave	1.00
					Depth to saturated zone	1.00
					Slope	0.04
FrA:						
Frenchtown	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
			Ponding	1.00		
GaB:						
Gavers	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40	Slope	0.04

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GeC:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Depth to soft bedrock	0.20	Depth to soft bedrock	0.20	Slope	1.00
					Depth to bedrock	0.05
GeD:						
Germano	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to soft bedrock	0.06	Depth to soft bedrock	0.06	Depth to saturated zone	1.00
					Depth to bedrock	0.02
GnB:						
Gilpin	Very limited		Somewhat limited		Very limited	
	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97	Depth to saturated zone	1.00
	Droughty	1.00			Depth to bedrock	0.39
					Slope	0.04
GnC:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Depth to soft bedrock	0.84	Slope	1.00
	Depth to soft bedrock	0.84	Content of large stones	0.08	Depth to bedrock	0.26
	Content of large stones	0.08				
GnD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.91	Content of large stones	0.91	Depth to saturated zone	1.00
	Depth to soft bedrock	0.46	Depth to soft bedrock	0.46	Content of large stones	0.99
					Depth to bedrock	0.12
GoC:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Depth to soft bedrock	0.64	Slope	1.00
	Depth to soft bedrock	0.64	Content of large stones	0.01	Depth to bedrock	0.17
	Content of large stones	0.01				
Coshocton	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.99	Slope	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
	Depth to hard bedrock	0.05				

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GoD:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to soft bedrock	0.64	Depth to soft bedrock	0.64	Depth to saturated zone	1.00
	Content of large stones	0.02	Content of large stones	0.02	Depth to bedrock	0.17
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
GpC:						
Gilpin	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Depth to soft bedrock	0.46	Depth to soft bedrock	0.46	Slope	1.00
	Content of large stones	0.04	Content of large stones	0.04	Depth to bedrock	0.12
Coshocton	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.99	Slope	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
Urban Land	Not rated		Not rated		Not rated	
GrB:						
Glenford	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22	Slope	0.04
GrC:						
Glenford	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
GuC:						
Guernsey	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Restricted permeability	0.41
	Restricted permeability	0.41	Restricted permeability	0.41		

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
GuC2:						
Guernsey	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Restricted permeability	0.41
	Restricted permeability	0.41	Restricted permeability	0.41		
GuD:						
Guernsey	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Restricted permeability	0.41
	Restricted permeability	0.41	Restricted permeability	0.41		
HeB:						
Hazleton	Somewhat limited		Somewhat limited		Very limited	
	Content of large stones	0.94	Content of large stones	0.94	Depth to saturated zone	1.00
	Depth to hard bedrock	0.88			Slope	0.04
HeC:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Content of large stones	0.90	Content of large stones	0.90	Slope	1.00
	Depth to hard bedrock	0.84				
HeD:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.98	Content of large stones	0.98	Depth to saturated zone	1.00
	Depth to hard bedrock	0.01				
HeE:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.93	Content of large stones	0.93	Depth to saturated zone	1.00
	Depth to hard bedrock	0.61				
HfF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.99	Content of large stones	0.99	Depth to saturated zone	1.00
	Depth to hard bedrock	0.88				
Rock Outcrop	Not rated		Not rated		Not rated	
HgF:						
Hazleton	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
					Content of large stones	0.99

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	0.26			Depth to saturated zone	1.00
HkA:						
Holly	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
					Flooding	1.00
HlB:						
Homewood	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Restricted permeability	0.91
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.04
	Depth to saturated zone	0.93	Rooting depth	1.00		
	Restricted permeability	0.91	Restricted permeability	0.91		
HmA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
HmB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
					Slope	0.04
HoA:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
HoB:						
Homeworth	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.99	Restricted permeability	0.99	Restricted permeability	0.99
					Slope	0.04
JwA:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
			Too sandy	1.00	Cutbanks cave	1.00
JwB:						
Jimtown	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
					Slope	0.04
KeB:						
Keene	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.40
	Restricted permeability	0.40	Restricted permeability	0.40	Slope	0.04

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
KnB:						
Kensington	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
	Depth to saturated zone	0.99	Depth to saturated zone	1.00		
KnC:						
Kensington	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Slope	1.00	Slope	1.00		
	Depth to saturated zone	0.86	Depth to saturated zone	1.00		
KnD:						
Kensington	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
	Depth to saturated zone	0.86	Depth to saturated zone	1.00		
LbA:						
Lobdell	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
LnA:						
Lorain	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.99	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.99	Restricted permeability	0.99
McB:						
Mechanicsburg	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Content of large stones	0.05	Content of large stones	0.05	Slope	0.04
McC:						
Mechanicsburg	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
MnB:						
Morristown	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Content of large stones	1.00	Content of large stones	1.00	Content of large stones	0.99
	Droughty	1.00	Restricted permeability	0.22	Restricted permeability	0.22
	Restricted permeability	0.22			Slope	0.04
MnD:						
Morristown	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Content of large stones	1.00	Content of large stones	1.00	Slope	1.00
	Slope	1.00	Slope	1.00	Content of large stones	0.99
	Droughty	1.00	Restricted permeability	0.22	Restricted permeability	0.22
	Restricted permeability	0.22				

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
MoB:						
Morristown	Very limited		Very limited		Very limited	
	Content of large stones	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Restricted permeability	0.22	Content of large stones	1.00
	Restricted permeability	0.22			Restricted permeability	0.22
					Slope	0.04
MoD:						
Morristown	Very limited		Very limited		Very limited	
	Content of large stones	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Droughty	1.00	Restricted permeability	0.22	Content of large stones	1.00
	Restricted permeability	0.22			Restricted permeability	0.22
OdA:						
Olmsted	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
			Ponding	1.00	Frost action	1.00
Valley	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.94	Ponding	1.00	Restricted permeability	0.94
			Restricted permeability	0.94		
OmB:						
Omulga	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.04
	Depth to saturated zone	0.99	Rooting depth	1.00		
OmC:						
Omulga	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	1.00
	Slope	1.00	Rooting depth	1.00		
	Depth to saturated zone	0.99	Slope	1.00		
OrA:						
Orrville	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
Pg:						
Pits	Not rated		Not rated		Not rated	
RaB:						
Rainsboro	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.04
	Depth to saturated zone	0.98	Rooting depth	1.00		

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RaC2:						
Rainsboro	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	1.00	Rooting depth	1.00		
	Depth to saturated zone	0.99	Slope	1.00		
RbC:						
Rainsboro	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	1.00	Rooting depth	1.00	Restricted permeability	0.91
	Depth to saturated zone	0.96	Slope	1.00		
	Restricted permeability	0.91	Restricted permeability	0.91		
ReA:						
Ravenna	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
ReB:						
Ravenna	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.04
RhD:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Content of large stones	0.18	Content of large stones	0.18		
	Depth to saturated zone	0.11				
RhE:						
Richland	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00		
	Depth to saturated zone	0.80	Depth to saturated zone	1.00		
	Content of large stones	0.32	Content of large stones	0.32		
RsB:						
Rittman	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.04
	Depth to saturated zone	1.00	Rooting depth	1.00		
	Droughty	1.00				
RsC:						
Rittman	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.96
	Depth to saturated zone	1.00	Rooting depth	1.00		
	Slope	1.00	Slope	1.00		

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
RsD2:						
Rittman	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	1.00	Rooting depth	1.00		
	Droughty	1.00				
TeB:						
Teegarden	Very limited		Very limited		Somewhat limited	
	Water erosion	1.00	Water erosion	1.00	Slope	0.04
	Rooting depth	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	1.00	Rooting depth	1.00		
TeC:						
Teegarden	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	1.00	Rooting depth	1.00		
	Slope	1.00	Slope	1.00		
TeC2:						
Teegarden	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Slope	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00		
	Depth to saturated zone	1.00	Rooting depth	1.00		
	Slope	1.00	Slope	1.00		
ToA:						
Tioga	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Flooding	1.00
					Depth to saturated zone	1.00
Ua:						
Udorthents	Very limited		Very limited		Not rated	
	Slope	1.00	Slope	1.00		
	Droughty	1.00	Restricted permeability	0.91		
	Restricted permeability	0.91				
Ub:						
Udorthents	Very limited		Very limited		Not rated	
	Droughty	1.00	Slope	1.00		
	Slope	1.00	Restricted permeability	0.22		
	Restricted permeability	0.22				
Uc:						
Udorthents	Very limited		Very limited		Not rated	
	Slope	1.00	Slope	1.00		
	Droughty	1.00	Restricted permeability	0.91		
	Restricted permeability	0.91				
Pits	Not rated		Not rated		Not rated	

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UkC2:						
Upshur	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Depth to saturated zone	1.00
	Restricted permeability	0.91	Restricted permeability	0.91	Slope	1.00
					Restricted permeability	0.91
Berks	Very limited		Very limited		Very limited	
	Droughty	1.00	Slope	1.00	Depth to saturated zone	1.00
	Slope	1.00	Depth to soft bedrock	0.90	Slope	1.00
	Depth to soft bedrock	0.90	Content of large stones	0.36	Depth to bedrock	0.30
	Content of large stones	0.36				
UkD2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.91	Restricted permeability	0.91	Depth to saturated zone	1.00
					Restricted permeability	0.91
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97	Depth to saturated zone	1.00
	Droughty	1.00	Content of large stones	0.81	Depth to bedrock	0.39
	Content of large stones	0.81				
UkE2:						
Upshur	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.91	Restricted permeability	0.91	Depth to saturated zone	1.00
					Restricted permeability	0.91
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Depth to hard bedrock	0.97	Depth to saturated zone	1.00
	Droughty	1.00	Content of large stones	0.09	Depth to bedrock	0.39
	Content of large stones	0.09				
Ur:						
Urban Land	Not rated		Not rated		Not rated	

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
UtB:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.04
	Depth to saturated zone	0.86	Rooting depth	1.00		
UtC:						
Urban Land	Not rated		Not rated		Not rated	
Canfield	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Rooting depth	1.00	Depth to saturated zone	1.00	Slope	0.96
	Slope	1.00	Rooting depth	1.00		
	Depth to saturated zone	0.98	Slope	1.00		
UvB:						
Urban Land	Not rated		Not rated		Not rated	
Chili	Not limited		Not limited		Very limited	
					Depth to saturated zone	1.00
					Slope	0.04
VaA:						
Valley	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.94	Ponding	1.00	Restricted permeability	0.94
			Restricted permeability	0.94		
VbA:						
Valley	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.94	Ponding	1.00	Restricted permeability	0.94
			Restricted permeability	0.94		
VcA:						
Valley	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Ponding	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.94	Ponding	1.00	Restricted permeability	0.94
			Restricted permeability	0.94		
Lorain	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Restricted permeability	0.99	Ponding	1.00	Frost action	1.00
			Restricted permeability	0.99	Restricted permeability	0.99

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
VnB:						
Vandergrift	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Restricted permeability	0.91	Restricted permeability	0.91	Restricted permeability	0.91
					Slope	0.04
VnC:						
Vandergrift	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Frost action	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
	Restricted permeability	0.91	Restricted permeability	0.91	Restricted permeability	0.91
W:						
Water	Not rated		Not rated		Not rated	
WaA:						
Wadsworth	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00		
WaB:						
Wadsworth	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.04
WkE:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
	Content of large stones	0.12	Content of large stones	0.12		
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Depth to hard bedrock	1.00	Content of large stones	1.00	Depth to saturated zone	1.00
	Droughty	1.00	Depth to hard bedrock	0.90	Depth to bedrock	0.30
	Content of large stones	1.00				
WkF:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Content of large stones	0.14	Content of large stones	0.14	Depth to saturated zone	1.00
Berks	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Droughty	1.00	Depth to soft bedrock	0.97	Depth to saturated zone	1.00
	Depth to soft bedrock	0.97	Content of large stones	0.94	Depth to bedrock	0.39
	Content of large stones	0.94				

TABLE 27.--WATER MANAGEMENT PART 2--Continued

Map symbol and soil name	Constructing Grassed Waterways		Constructing Terraces and Diversions		Drainage	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
WmC:						
Westmoreland	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	1.00
	Slope	1.00	Slope	1.00	Slope	1.00
Coshocton	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
	Depth to saturated zone	0.99	Slope	1.00	Restricted permeability	0.01
	Restricted permeability	0.01	Restricted permeability	0.01		
WmD:						
Westmoreland	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Slope	1.00
	Water erosion	1.00	Slope	1.00	Depth to saturated zone	1.00
Coshocton	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Frost action	1.00
	Water erosion	1.00	Slope	1.00	Slope	1.00
	Depth to saturated zone	0.99	Depth to saturated zone	1.00	Restricted permeability	0.22
	Restricted permeability	0.22	Restricted permeability	0.22		
WoA:						
Wick	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
ZeA:						
Zepernick	Very limited		Very limited		Very limited	
	Water erosion	1.00	Water erosion	1.00	Frost action	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00

TABLE 28.--ENGINEERING INDEX PROPERTIES

(Absence of an entry indicates that the data were not estimated. See text on page 242 for additional information.)

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	
AmF:												
Amanda----------	0-5	Loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	85-95	70-90	50-70	20-35	3-15
	5-32	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-4, A-6, A-7-6	0	0-5	90-100	85-95	65-95	45-90	25-45	5-20
	32-70	Gravelly silt loam, gravelly silty clay loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	65-95	55-95	40-90	25-40	3-20
	70-80	Gravelly loam, loam, silt loam	CL, CL-ML	A-6, A-4	0	0-5	85-100	75-90	65-90	45-80	20-35	3-15
BkB:												
Berks----------	0-10	Channery silt loam	CL-ML, CL	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	10-36	Very channery silt loam, channery silt loam, extremely channery loam	SM, SC, CL, CL-ML, GC, GM	A-1, A-2, A-4	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	36-38	Weathered bedrock			---	---	---	---	---	---	---	---
BkC:												
Berks----------	0-7	Channery silt loam	CL-ML, CL	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	7-23	Very channery silt loam, extremely channery silt loam, channery loam	CL, GC, GM, CL-ML, SM, SC	A-2, A-4, A-1	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	23-25	Weathered bedrock			---	---	---	---	---	---	---	---
BkD:												
Berks----------	0-7	Channery silt loam	CL-ML, CL	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	7-24	Very channery silt loam, extremely channery silt loam, channery loam	SM, SC, GM, GC, CL-ML, CL	A-2, A-1, A-4	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	24-26	Weathered bedrock			---	---	---	---	---	---	---	---
BkE:												
Berks----------	0-1	Slightly decomposed plant material	PT	A-8	---	---	---	---	---	---	---	---
	1-8	Channery silt loam	CL-ML, CL	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	8-22	Extremely channery silt loam, very channery loam, channery silt loam	CL, CL-ML, GC, GM, SC, SM	A-4, A-2, A-1	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	22-24	Unweathered bedrock			---	---	---	---	---	---	---	---

TABLE 28.--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	
BmB:												
Berks----------	0-6	Channery silt loam	CL-ML, CL	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	6-22	Very channery silt loam, extremely channery silt loam, channery loam	SM, SC, GM, GC, CL-ML, CL	A-1, A-4, A-2	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	22-24	Unweathered bedrock			---	---	---	---	---	---	---	---
Urban Land------	---	---	---	---	---	---	---	---	---	---	---	---
BmC:												
Berks----------	0-6	Channery silt loam	CL-ML, CL	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	6-22	Very channery silt loam, extremely channery silt loam, channery loam	SM, SC, CL-ML, CL, GM, GC	A-4, A-2, A-1	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	22-24	Unweathered bedrock			---	---	---	---	---	---	---	---
Urban Land------	---	---	---	---	---	---	---	---	---	---	---	---
BmD:												
Berks----------	0-6	Channery silt loam	CL-ML, CL	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	6-23	Very channery silt loam, extremely channery silt loam, channery loam	SM, GM, SC, GC, CL-ML, CL	A-2, A-4, A-1	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	23-25	Unweathered bedrock			---	---	---	---	---	---	---	---
Urban Land------	---	---	---	---	---	---	---	---	---	---	---	---
BpF:												
Bethesda--------	0-2	Very channery silt loam	GM, GC-GM, CL-ML	A-1, A-4, A-6, A-2	0	8-25	65-90	30-50	30-50	20-50	25-40	4-14
	2-80	Extremely channery silty clay loam, very channery silty clay loam, channery silt loam, very channery clay loam	GC, GC-GM, GM, CL	A-7-6, A-6, A-4, A-2, A-1	0	15-45	45-80	10-50	10-50	10-50	24-50	3-23
BsC2:												
Bogart----------	0-8	Loam, silt loam, gravelly loam	SM, ML	A-4	0	0-5	70-100	65-100	55-100	40-90	20-35	NP-10
	8-34	Loam, silt loam, sandy loam, gravelly loam	CL-ML, CL, GM, ML	A-6, A-4	0	0-5	80-100	35-100	20-100	10-80	20-35	3-15
	34-44	Loam, silt loam, sandy loam, gravelly loam	CL, CL-ML, ML, GM	A-6, A-4	0	0-5	80-100	35-100	20-100	10-80	20-35	3-15
	44-52	Gravelly loam, sandy loam, sandy clay loam, very gravelly sandy loam	GM, CL-ML, ML, CL, SM	A-2, A-4, A-1	0	0-5	60-100	35-100	20-95	10-75	20-40	3-15
	52-80	Gravelly sandy loam, very gravelly loam, stratified sandy loam to loamy sand to gravelly sand	GM, SM, SC, CL-ML	A-2, A-4, A-1	0	0-5	60-100	25-100	15-95	5-75	15-30	NP-8

TABLE 28.--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	
BtA:												
Bogart----------	0-11	Silt loam, loam, gravelly loam	SM, ML	A-4	0	0-5	70-100	65-100	55-100	40-90	20-35	NP-10
	11-33	Loam, silt loam, sandy loam, gravelly loam	CL, CL-ML, GM, ML	A-6, A-4	0	0-5	80-100	35-100	20-100	10-80	20-35	3-15
	33-49	Gravelly sandy loam, loam, sandy clay loam, very gravelly sandy loam	ML, SC, GM, SM	A-2, A-1, A-4	0	0-5	60-100	35-100	20-95	10-75	20-40	3-15
	49-80	Very gravelly sandy loam, gravelly loam, stratified sandy loam to loamy sand to gravelly sand	SC, SM, GM, CL-ML	A-1, A-2, A-4	0	0-5	60-100	25-100	15-95	5-75	15-30	NP-8
BtB:												
Bogart----------	0-7	Silt loam, loam, gravelly loam	SM, ML	A-4	0	0-5	70-100	65-100	55-100	40-90	20-35	NP-10
	7-28	Silt loam, gravelly clay loam, sandy loam, loam	CL, CL-ML, GM, ML	A-6, A-4	0	0-5	80-100	35-100	20-100	10-80	20-35	3-15
	28-42	Very gravelly sandy loam, sandy loam, sandy clay loam, gravelly loam	ML, SC, GM, SM	A-2, A-1, A-4	0	0-5	60-100	35-100	20-95	10-75	20-40	3-15
	42-60	Extremely gravelly sand, gravelly sandy loam, very gravelly loam, stratified sandy loam to loamy sand to gravelly sand	SC, SC-SM, SM, GM, CL-ML	A-4, A-1, A-2	0	0-5	60-100	25-100	15-95	5-75	15-30	NP-8
BtC:												
Bogart----------	0-9	Silt loam, loam, gravelly loam	ML, SM	A-4	0	0-5	70-100	65-100	55-100	40-90	20-35	NP-10
	9-43	Loam, silt loam, sandy loam, gravelly loam	CL, CL-ML, GM, ML	A-6, A-4	0	0-5	80-100	35-100	20-100	10-80	20-35	3-15
	43-51	Gravelly sandy loam, loam, sandy clay loam, very gravelly sandy loam	SM, GM, SC, ML	A-1, A-4, A-2	0	0-5	60-100	35-100	20-95	10-75	15-30	3-15
	51-80	Gravelly sandy loam, very gravelly loam, stratified sandy loam to loamy sand to gravelly sand	CL-ML, SM, SC, GM	A-2, A-4, A-1	0	0-5	60-100	25-100	15-95	5-75	15-30	NP-8
CaA:												
Calcutta--------	0-1	Slightly decomposed plant material	PT	A-8	---	---	---	---	---	---	---	---
	1-9	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	65-90	25-35	5-15
	9-27	Silty clay loam, silt loam	CL, CL-ML	A-6, A-4, A-7-6	0	0	95-100	95-100	85-100	65-95	25-45	5-20
	27-46	Loam, silty clay loam, silt loam, clay loam, gravelly sandy loam	SC-SM, CL, CL-ML	A-4, A-6, A-7-6	0	0-5	85-100	45-95	30-95	15-90	20-45	5-20

TABLE 28.--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	
	46-80	Gravelly sandy loam, loam, sandy loam, very gravelly sandy loam, silt loam, clay loam, silty clay loam	CL, SC-SM, CL-ML	A-4, A-6, A-7-6	0	0-5	85-100	45-95	30-95	15-90	20-45	5-20
CcB:												
Canfield--------	0-11	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0-3	90-100	85-95	75-95	60-85	16-35	2-15
	11-22	Silt loam, silty clay loam, loam	CL, ML, CL-ML	A-4, A-6	0	0-5	85-100	85-95	70-95	50-90	20-40	3-16
	22-45	Loam, gravelly loam, silt loam, gravelly silt loam	CL-ML, CL	A-4, A-6	0	0-5	80-95	70-95	60-95	40-85	20-35	3-14
	45-80	Loam, gravelly silt loam, sandy loam	CL, CL-ML, ML, SC-SM	A-6, A-4	0	0-5	80-95	55-95	30-95	15-85	20-35	2-12
CcC:												
Canfield--------	0-10	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0-3	90-100	85-95	75-95	60-85	16-35	2-15
	10-25	Silt loam, loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	85-95	70-95	50-90	20-40	3-16
	25-40	Silt loam, gravelly silt loam, loam, gravelly loam	CL, CL-ML	A-4, A-6	0	0-5	80-95	70-95	60-95	40-85	20-35	3-14
	40-80	Loam, gravelly loam, silt loam, sandy loam	ML, SC-SM, CL, CL-ML	A-4, A-6	0	0-5	80-95	55-95	30-95	15-85	20-35	2-12
CcD:												
Canfield--------	0-8	Silt loam	ML, CL, CL-ML	A-4, A-6	0	0-3	90-100	85-95	75-95	60-85	16-35	2-15
	8-21	Silt loam, silty clay loam, loam	ML, CL-ML, CL	A-4, A-6	0	0-5	85-100	85-95	70-95	50-90	20-40	3-16
	21-40	Gravelly loam, loam, silt loam, gravelly silt loam	CL-ML, CL	A-4, A-6	0	0-5	80-95	70-95	60-95	40-85	20-35	3-14
	40-80	Gravelly loam, silt loam, sandy loam	SC-SM, ML, CL-ML, CL	A-4, A-6	0	0-5	80-95	55-95	30-95	15-85	20-35	2-12
CcE:												
Canfield--------	0-7	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0-3	90-100	85-95	75-95	60-85	16-35	2-15
	7-26	Silt loam, silty clay loam, loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	85-95	70-95	50-90	20-40	3-16
	26-50	Silt loam, gravelly silt loam, loam, gravelly loam	CL, CL-ML	A-4, A-6	0	0-5	80-95	70-95	60-95	40-85	20-35	3-14
	50-80	Gravelly silt loam, silt loam, loam, sandy loam	ML, CL, SC-SM, CL-ML	A-4, A-6	0	0-5	80-95	55-95	30-95	15-85	20-35	2-12
CeA:												
Carlisle--------	0-80	Muck	PT	A-8	---	---	---	---	---	---	---	---
CfD2:												
Chili----------	0-4	Loam	CL-ML, ML	A-4	0	0-2	85-100	75-100	65-100	50-90	25-35	4-10
	4-62	Gravelly loam, loam, silt loam, very gravelly sandy loam, clay loam, sandy	GC, CL	A-2, A-1-b, A-4, A-6	0	0-5	65-100	55-95	35-95	15-75	0-30	NP-12

TABLE 28.--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	
	62-80	clay loam Gravelly loamy sand, very gravelly sand, stratified gravelly loamy sand to very gravelly sand	GM, GW, SP, GP-GM, SM	A-1	0	2-15	30-70	30-65	15-50	2-20	0-14	NP
ChA:												
Chili	0-8	Silt loam	CL-ML, ML	A-4	0	0-2	85-100	75-100	65-100	45-90	25-35	4-10
	8-16	Silt loam, gravelly clay loam, gravelly loam, sandy clay loam	CL, GC	A-1-b, A-2, A-4, A-6	0	0-5	65-100	55-95	35-95	15-75	0-30	NP-12
	16-55	Gravelly loam, gravelly clay loam, very gravelly loam, very gravelly sandy loam, silt loam, sandy clay loam	GC-GM, GM, SM, SC-SM	A-1-b, A-2, A-4, A-6	0	0-5	45-80	30-75	20-75	10-60	0-30	NP-18
	55-80	Gravelly loamy sand, very gravelly sand, stratified gravelly loamy sand to very gravelly sand	GP-GM, SP, SM, GW, GM	A-1	0	2-15	30-70	30-65	15-50	2-20	0-14	NP
ChB:												
Chili	0-13	Silt loam	CL-ML, ML	A-4	0	0-2	85-100	75-100	65-100	45-90	25-35	4-10
	13-18	Silt loam, gravelly loam, clay loam, sandy clay loam	CL, GC	A-6, A-1-b, A-2, A-4	0	0-5	65-100	55-95	35-95	15-75	0-30	NP-12
	18-50	Gravelly loam, very gravelly sandy clay loam, gravelly sandy loam, very gravelly sandy loam, silt loam, clay loam	GC-GM, GM, SC-SM, SM	A-1-b, A-2, A-4, A-6	0	0-5	45-80	30-75	20-75	10-60	0-30	NP-18
	50-80	Very gravelly loamy sand, gravelly loamy sand, very gravelly sand, stratified gravelly loamy sand to very gravelly sand	GP-GM, GM, SP, SM, GW	A-1	0	2-15	30-70	30-65	15-50	2-20	0-14	NP
ChC:												
Chili	0-10	Silt loam	ML, CL-ML	A-4	0	0-2	85-100	75-100	65-100	45-90	25-35	4-10
	10-45	Gravelly loam, gravelly clay loam, silt loam, very gravelly sandy loam, sandy clay loam	CL, GC	A-1-b, A-2, A-4, A-6	0	0-5	65-100	55-95	35-95	15-75	0-30	NP-12
	45-70	Very gravelly sandy loam, very gravelly loam, silt loam, clay loam, gravelly sandy clay loam	GM, GC-GM, SM, SC-SM	A-1-b, A-2, A-4, A-6	0	0-5	45-80	30-75	20-75	10-60	0-30	NP-18

TABLE 28.--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	
	70-80	Very gravelly loamy sand, gravelly sand, stratified gravelly loamy sand to very gravelly sand	SM, GW, GM, GP-GM, SP	A-1	0	2-15	30-70	30-65	15-50	2-20	0-14	NP
CmB:												
Conotton--------	0-10	Gravelly loam	SM, ML, GM, CL-ML	A-4, A-2	0	0-5	65-90	50-80	40-80	30-65	0-30	NP-6
	10-15	Very gravelly loam, gravelly loam	SM, ML, GM, GC-GM	A-2, A-1-b, A-4	0	0-10	35-90	30-75	15-75	15-70	0-25	NP-6
	15-80	Very gravelly sandy loam, very gravelly loam, extremely gravelly sandy loam	GM, SM, SC-SM, GC-GM	A-2, A-1	0	0-10	35-70	30-50	20-45	10-35	0-25	NP-6
CmC:												
Conotton--------	0-10	Gravelly loam	GM, ML, SM, CL-ML	A-4, A-2	0	0-5	65-90	50-80	40-80	30-65	0-30	NP-6
	10-70	Very gravelly loam, very gravelly sandy loam, extremely gravelly sandy loam	GC-GM, GM, SC-SM, SM	A-1, A-2	0	0-10	35-70	30-50	20-45	10-35	0-25	NP-6
	70-80	Very gravelly loamy sand, extremely gravelly loamy sand, very gravelly sand	GM, GP-GM, SM, SW-SM	A-1	0	0-10	25-65	25-50	15-40	5-15	0-14	NP
CoB:												
Coshocton-------	0-11	Silt loam	CL, CL-ML	A-6, A-4	0	0-5	85-100	75-95	70-95	55-85	25-40	4-15
	11-23	Silty clay loam, silt loam, clay loam	CL	A-4, A-6	0	0-5	85-100	75-95	70-95	55-90	25-40	6-18
	23-45	Silty clay loam, channery loam, channery silt loam, silty clay	CL, CH	A-6, A-7-6	0	0-10	70-100	50-85	40-85	30-80	35-55	20-35
	45-70	Channery silty clay loam, very channery silty clay loam, silty clay loam, clay loam, silty clay	GC, CL, CH	A-7-6, A-2, A-6	0	0-20	40-100	35-85	30-85	20-80	30-55	16-35
	70-72	Unweathered bedrock			---	---	---	---	---	---	---	---
CoC:												
Coshocton-------	0-11	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	85-100	75-95	70-95	55-85	25-40	4-15
	11-32	Silty clay loam, silt loam, clay loam	CL	A-6, A-4	0	0-5	85-100	75-95	70-95	55-90	25-40	6-18
	32-42	Channery silty clay loam, silty clay loam, channery loam, silt loam, silty clay	CH, CL	A-7-6, A-6	0	0-10	70-100	50-85	40-85	30-80	35-55	20-35
	42-52	Channery silty clay loam, very channery loam, channery clay loam, silty clay	CH, CL, GC	A-7-6, A-6, A-2	0	0-20	40-100	35-85	30-85	20-80	30-55	16-35

TABLE 28.--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	
	52-56	Unweathered bedrock			---	---	---	---	---	---	---	---
CoD:												
Coshocton-------	0-4	Silt loam	CL, CL-ML	A-6, A-4	0	0-5	85-100	75-95	70-95	55-85	25-40	4-15
	4-24	Silt loam, silty clay loam, clay loam	CL	A-6, A-4	0	0-5	85-100	75-95	70-95	55-90	25-40	6-18
	24-48	Silty clay loam, channery silty clay loam, silt loam, channery loam, silty clay	CH, CL	A-6, A-7-6	0	0-10	70-100	50-85	40-85	30-80	35-55	20-35
	48-75	Channery silty clay loam, very channery loam, channery clay loam, silty clay	CH, CL, GC	A-6, A-2, A-7-6	0	0-20	40-100	35-85	30-85	20-80	30-55	16-35
	75-77	Unweathered bedrock			---	---	---	---	---	---	---	---
DAM:												
Dam----------	---	---	---	---	---	---	---	---	---	---	---	---
DgA:												
Doles----------	0-15	Silt loam	CL-ML, CL	A-6, A-4	0	0	100	90-100	85-100	65-90	20-35	3-15
	15-30	Silty clay loam, silt loam	CL	A-7-6, A-6, A-4	0	0	100	90-100	85-100	65-95	25-45	5-20
	30-60	Silt loam, silty clay loam	CL	A-6, A-4, A-7-6	0	0	100	85-100	75-100	60-95	30-45	10-20
	60-80	Silt loam, silty clay loam	CL	A-6, A-7-6, A-4	0	0	100	80-100	70-100	55-95	30-45	10-25
ErC:												
Ernest----------	0-8	Silt loam, channery silt loam	CL, CL-ML	A-4, A-6	0	0-10	85-100	65-100	65-100	50-90	20-40	4-15
	8-24	Silt loam, silty clay loam, channery silt loam	CL	A-4, A-6, A-7-6	0	0-15	75-100	55-100	50-100	40-95	25-50	6-22
	24-44	Silt loam, channery loam, very channery clay loam, silty clay loam	GC, CL	A-6, A-7-6, A-4	0	0-20	70-95	45-95	40-95	30-90	20-45	4-18
	44-60	Silt loam, silty clay loam, channery loam, loam, very channery clay loam	GC, CL	A-4, A-6, A-7-6	0	0-20	55-95	35-95	30-95	20-90	25-50	6-22
ErD:												
Ernest----------	0-14	Silt loam, channery silt loam	CL-ML, CL	A-6, A-4	0	0-10	85-100	65-100	65-100	50-90	20-40	4-15
	14-33	Silt loam, silty clay loam, channery silt loam	CL	A-7-6, A-6, A-4	0	0-15	75-100	55-100	50-100	40-95	25-50	6-22
	33-50	Loam, channery silt loam, very channery clay loam, silty clay loam	GC, CL	A-7-6, A-6, A-4	0	0-20	70-95	45-95	40-95	30-90	20-45	4-18
	50-80	Silt loam, silty clay loam, channery loam, loam, very channery clay loam	CL, GC	A-6, A-4, A-7-6	0	0-20	55-95	35-95	30-95	20-90	25-50	6-22

TABLE 28.--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	
FbB:												
Fairpoint-------	0-5	Very channery silt loam, very channery silty clay loam	GC, GC-GM	A-2, A-4, A-6	0	8-15	65-90	30-50	25-50	20-50	25-40	4-14
	5-80	Very channery silty clay loam, extremely channery silt loam, channery clay loam	CL, GC, SC, GC-GM	A-6, A-4, A-2, A-1	0	8-45	55-75	20-50	20-50	15-50	25-50	4-24
FbD:												
Fairpoint-------	0-4	Very channery silt loam, very channery silty clay loam	GC-GM, GC	A-4, A-6, A-2	0	8-15	65-90	30-50	25-50	20-50	25-40	4-14
	4-80	Very channery silty clay loam, very channery clay loam, channery silt loam	GC, SC, GC-GM, CL	A-6, A-4, A-2, A-1	0	8-45	55-75	20-50	20-50	15-50	25-50	4-24
FbF:												
Fairpoint-------	0-4	Very channery silt loam, very channery silty clay loam	GC-GM, GC	A-4, A-2, A-6	0	8-15	65-90	30-50	25-50	20-50	25-40	4-14
	4-80	Extremely channery silty clay loam, very channery silt loam, channery clay loam	CL, GC, SC, GC-GM	A-4, A-1, A-2, A-6	0	8-45	55-75	20-50	20-50	15-50	25-50	4-24
FcB:												
Fairpoint-------	0-8	Silty clay loam, silt loam	CL, CH	A-6, A-7-6	0	0-5	90-100	80-95	70-95	55-90	35-55	12-24
	8-80	Extremely channery silty clay loam, very channery clay loam, channery silt loam	CL, GC, SC, GC-GM	A-1, A-6, A-4, A-2	0	8-45	55-75	20-50	20-50	15-50	25-50	4-24
FcD:												
Fairpoint-------	0-8	Silty clay loam, silt loam	CH, CL	A-7-6, A-6	0	0-5	90-100	80-95	70-95	55-90	35-55	12-24
	8-80	Very channery silt loam, extremely channery silty clay loam, channery clay loam	CL, GC-GM, SC, GC	A-6, A-4, A-2, A-1	0	8-45	55-75	20-50	20-50	15-50	25-50	4-24
FdA:												
Fitchville------	0-10	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	90-100	70-90	24-40	4-16
	10-68	Silty clay loam, silt loam, stratified silt loam to loam, stratified silty clay loam to clay loam	CL	A-4, A-7-6, A-6	0	0	100	100	85-100	60-95	28-50	5-23

TABLE 28.--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	
	68-80	Silt loam, silty clay loam, stratified silt loam to loam to fine sandy loam, stratified silty clay loam to clay loam	CL-ML, CL	A-7-6, A-6, A-4	0	0	95-100	95-100	70-100	40-95	20-45	3-18
FdB:												
Fitchville------	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	90-100	70-90	24-40	4-16
	8-50	Silty clay loam, silt loam, loam, stratified silty clay loam to clay loam	CL	A-7-6, A-4, A-6	0	0	100	100	85-100	60-95	28-50	5-23
	50-80	Silty clay loam, silt loam, stratified silt loam to loam to fine sandy loam, stratified silty clay loam to clay loam	CL, CL-ML	A-4, A-7-6, A-6	0	0	95-100	95-100	70-100	40-95	20-45	3-18
FeA:												
Fluvaquents-----	0-80	Stratified variable			---	---	---	---	---	---	---	---
FnC2:												
Fredericktown---	0-10	Gravelly loam	SM, ML, CL-ML	A-4	0	0-3	65-90	55-75	45-75	35-65	0-30	NP-7
	10-25	Loam, gravelly silt loam, clay loam	CL-ML, CL	A-1-b, A-4, A-6, A-2	0	0-15	65-100	55-95	30-95	10-75	0-30	NP-12
	25-80	Gravelly sandy loam, very gravelly loam, loamy sand, silt loam	SC-SM, SM, GM, CL-ML, ML	A-1, A-4, A-2	0	0-15	85-95	35-95	15-95	5-75	0-30	NP-8
FnD2:												
Fredericktown---	0-9	Gravelly loam	SM, CL-ML, ML	A-4	0	0-3	65-90	55-75	45-75	35-65	0-30	NP-7
	9-60	Gravelly clay loam, loam, gravelly silt loam	CL-ML, CL	A-1-b, A-6, A-4, A-2	0	0-15	65-100	55-95	30-95	10-75	0-30	NP-12
	60-80	Gravelly sandy loam, very gravelly loam, loamy sand, silt loam	SC-SM, SM, GM, CL-ML, ML	A-2, A-1, A-4	0	0-15	85-95	35-95	15-95	5-75	0-30	NP-8
FoB:												
Fredericktown---	0-12	Silt loam	CL-ML, ML	A-4	0	0-3	85-100	55-100	50-100	35-90	25-35	4-10
	12-25	Silt loam, gravelly silt loam, loam, clay loam	CL-ML, CL	A-1-b, A-2, A-4, A-6	0	0-15	65-100	55-95	30-95	10-75	0-30	NP-12
	25-80	Gravelly loamy coarse sand, gravelly sandy loam, gravelly coarse sandy loam, very gravelly loamy coarse sand, very gravelly coarse sandy loam, loamy sand, loam, silt loam	ML, SM, GM, SC-SM, CL-ML	A-4, A-1, A-2	0	0-15	85-95	35-95	15-95	5-75	0-30	NP-8

TABLE 28.--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	
FrA:												
Frenchtown------	0-4	Silt loam	CL, CL-ML	A-6, A-4	0	0	95-100	95-100	85-100	65-90	22-35	3-12
	4-24	Silt loam, silty clay loam, clay loam, gravelly loam	CL	A-4, A-6	0	0	85-100	80-100	70-100	50-95	25-40	4-15
	24-45	Silty clay loam, silt loam, loam, gravelly clay loam	CL	A-4, A-6	0	0	70-100	70-95	60-95	40-90	20-35	4-12
	45-80	Silt loam, silty clay loam, loam, gravelly clay loam	CL	A-4, A-6	0	0-5	65-95	55-95	45-95	35-90	20-35	4-14
GaB:												
Gavers----------	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0	95-100	95-100	85-100	65-90	20-35	4-12
	8-24	Silty clay loam, silt loam	CL	A-4, A-6, A-7-6	0	0	95-100	95-100	85-100	65-90	20-45	6-18
	24-78	Silt loam, parachannery silt loam, silty clay loam, channery silty clay loam, channery loam	CL	A-4, A-6	0	0-5	95-100	70-95	60-95	40-90	30-40	6-15
	78-80	Silty clay, channery silty clay loam, silt loam	CH, CL, MH	A-7, A-6	0	2-20	65-100	50-95	45-95	35-90	30-60	10-25
GeC:												
Germano---------	0-10	Fine sandy loam, channery sandy loam, loam	ML, SM, SC-SM, CL-ML	A-4	0	0-10	85-100	70-95	50-80	30-50	15-20	NP-5
	10-26	Channery fine sandy loam, fine sandy loam, coarse sandy loam, loam	ML, SM, CL-ML, SC-SM	A-4, A-2-4, A-1-b	0	0-20	65-100	50-95	30-90	15-70	15-30	NP-7
	26-33	Very channery fine sandy loam, extremely channery sandy loam, channery loamy sand	SM, SC-SM, GM	A-1, A-2-4, A-3, A-4	0-5	0-30	30-85	10-70	5-60	2-40	15-20	NP-5
	33-43	Weathered bedrock			---	---	---	---	---	---	---	---
GeD:												
Germano---------	0-4	Fine sandy loam, channery sandy loam, loam	CL-ML, SM, SC-SM, ML	A-4	0	0-10	85-100	70-95	50-80	30-50	15-20	NP-5
	4-30	Channery sandy loam, sandy loam, fine sandy loam, coarse sandy loam, loam	CL-ML, SM, ML, SC-SM	A-4, A-1-b, A-2-4	0	0-20	65-100	50-95	30-90	15-70	15-30	NP-7
	30-36	Very channery loamy sand, channery fine sandy loam, extremely channery sandy loam	SM, SC-SM, GM, SP-SC	A-3, A-4, A-1, A-2-4	0-5	0-30	30-85	10-70	5-60	2-40	15-20	NP-5
	36-46	Weathered bedrock			---	---	---	---	---	---	---	---

TABLE 28.--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	
GnB:												
Gilpin----------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-95	85-95	75-95	60-85	20-40	4-15
	9-22	Channery silt loam, silt loam, loam, silty clay loam	CL	A-6, A-7-6, A-4	0	0-30	50-95	50-95	40-95	30-90	20-45	4-18
	22-26	Unweathered bedrock			---	---	---	---	---	---	---	---
GnC:												
Gilpin----------	0-3	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	85-95	85-95	75-95	60-85	20-40	4-15
	3-25	Channery silt loam, channery loam, silty clay loam	CL	A-4, A-6, A-7-6	0	0-30	50-95	50-95	40-95	30-90	20-45	4-18
	25-35	Weathered bedrock			---	---	---	---	---	---	---	---
GnD:												
Gilpin----------	0-10	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	85-95	85-95	75-95	60-85	20-40	4-15
	10-15	Channery silt loam, loam, silty clay loam	CL	A-7-6, A-6, A-4	0	0-30	50-95	50-95	40-95	30-90	20-45	4-18
	15-30	Extremely channery silt loam, very channery loam, very channery silty clay loam	GC	A-6, A-1-a, A-2, A-4	0	0-30	50-95	10-45	10-45	5-45	20-40	4-15
	30-32	Weathered bedrock			---	---	---	---	---	---	---	---
GoC:												
Gilpin----------	0-7	Silt loam	CL, CL-ML	A-6, A-4	0	0-5	85-95	85-95	75-95	60-85	20-40	4-15
	7-20	Silt loam, channery silty clay loam, loam	CL	A-7-6, A-4, A-6	0	0-30	50-95	50-95	40-95	30-90	20-45	4-18
	20-28	Very channery silty clay loam, very channery silt loam, extremely channery loam	GC	A-2, A-6, A-4, A-1-a	0	0-30	25-55	10-45	10-45	5-45	20-40	4-15
	28-38	Weathered bedrock			---	---	---	---	---	---	---	---
Coshocton-------	0-7	Silt loam	CL, CL-ML	A-6, A-4	0	0-5	85-100	75-95	70-95	55-85	25-40	4-15
	7-40	Silty clay loam, silt loam, clay loam	CL	A-6, A-4	0	0-5	85-100	75-95	70-95	55-90	25-40	6-18
	40-46	Channery silty clay loam, channery loam, silt loam, silty clay	CL, CH	A-7-6, A-6	0	0-10	70-100	50-85	40-85	30-80	35-55	20-35
	46-56	Channery silty clay loam, very channery loam, silty clay, channery clay loam	GC, CL, CH	A-2, A-7-6, A-6	0	0-20	40-100	35-85	30-85	20-80	30-55	16-35
	56-66	Unweathered bedrock			---	---	---	---	---	---	---	---
GoD:												
Gilpin----------	0-7	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	85-95	85-95	75-95	60-85	20-40	4-15
	7-28	Channery silty clay loam, silt loam, loam	CL	A-4, A-6, A-7-6	0	0-30	50-95	50-95	40-95	30-90	20-45	4-18
	28-38	Weathered bedrock			---	---	---	---	---	---	---	---

TABLE 28.--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	
Coshocton-------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	85-100	75-95	70-95	55-85	25-40	4-15
	7-40	Silty clay loam, channery silt loam, clay loam	CL	A-4, A-6	0	0-5	85-100	75-95	70-95	55-90	25-40	6-18
	40-50	Channery silty clay loam, channery loam, silt loam, silty clay	CL, CH	A-7-6, A-6	0	0-10	70-100	50-85	40-85	30-80	35-55	20-35
	50-56	Very channery silty clay loam, channery loam, silty clay, clay loam	GC, CL, CH	A-7-6, A-6, A-2	0	0-20	40-100	35-85	30-85	20-80	30-55	16-35
	56-66	Weathered bedrock			---	---	---	---	---	---	---	---
GpC:												
Gilpin----------	0-6	Silt loam	CL-ML, CL	A-4, A-6	0	0-5	85-95	85-95	75-95	60-85	20-40	4-15
	6-30	Channery silt loam, silty clay loam, loam	CL	A-7-6, A-6, A-4	0	0-30	50-95	50-95	40-95	30-90	20-45	4-18
	30-40	Weathered bedrock			---	---	---	---	---	---	---	---
Coshocton-------	0-6	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	85-100	75-95	70-95	55-85	25-40	4-15
	6-28	Silty clay loam, silt loam, clay loam	CL	A-6, A-4	0	0-5	85-100	75-95	70-95	55-90	25-40	6-18
	28-42	Channery silty clay loam, channery loam, silt loam, silty clay	CH, CL	A-7-6, A-6	0	0-10	70-100	50-85	40-85	30-80	35-55	20-35
	42-64	Channery silty clay loam, very channery loam, silty clay, channery clay loam	CL, CH, GC	A-6, A-2, A-7-6	0	0-20	40-100	35-85	30-85	20-80	30-55	16-35
	64-66	Unweathered bedrock			---	---	---	---	---	---	---	---
Urban Land------	---	---	---	---	---	---	---	---	---	---	---	---
GrB:												
Glenford--------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	65-90	25-40	4-14
	8-30	Silt loam, silty clay loam	CL	A-7-6, A-6, A-4	0	0	100	95-100	85-100	65-95	25-45	5-18
	30-60	Stratified silt loam to loam, silty clay loam, silt loam, loam	CL	A-7-6, A-4, A-6	0	0	100	95-100	80-100	60-95	20-45	3-18
	60-80	Stratified silt loam to loam, silt loam, stratified silt loam to silty clay loam, stratified silt loam to loam to fine sandy loam	CL, CL-ML	A-4, A-6	0	0	95-100	85-100	75-100	60-95	20-40	3-15
GrC:												
Glenford--------	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	95-100	85-100	65-90	25-40	4-14
	7-26	Silt loam, silty clay loam	CL	A-6, A-7-6, A-4	0	0	100	95-100	85-100	65-95	25-45	5-18
	26-60	Silty clay loam, silt loam, loam	CL	A-4, A-6, A-7-6	0	0	100	95-100	80-100	60-95	20-45	3-18

TABLE 28.--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	
	60-80	Fine sandy loam, silt loam, stratified silt loam to silty clay loam, stratified fine sandy loam to loam to silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	85-100	75-100	60-95	20-40	3-15
GuC:												
Guernsey--------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	75-95	70-95	55-85	25-40	4-14
	8-16	Silty clay loam, channery silty clay	CH, CL, MH	A-7, A-6	0	0-5	90-100	70-95	65-95	60-90	30-65	10-30
	16-52	Silty clay, channery silty clay, silty clay loam	CL, MH, CH	A-7	0	0-10	75-100	70-95	65-95	60-90	41-65	11-35
	52-65	Silty clay loam, cobbly silty clay loam, silty clay	CL, CH, MH	A-7	0	0-20	70-100	50-95	50-95	45-90	41-70	11-40
	65-75	Weathered bedrock			---	---	---	---	---	---	---	---
GuC2:												
Guernsey--------	0-8	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	90-100	75-95	70-95	55-85	25-40	4-14
	8-16	Silty clay loam, channery silty clay	MH, CL, CH	A-6, A-7	0	0-5	90-100	70-95	65-95	60-90	30-65	10-30
	16-52	Silty clay, channery silty clay, silty clay loam	MH, CL, CH	A-7	0	0-10	75-100	70-95	65-95	60-90	41-65	11-35
	52-65	Silty clay loam, cobbly silty clay loam, silty clay	CH, MH, CL	A-7	0	0-20	70-100	50-95	50-95	45-90	41-70	11-40
	65-75	Weathered bedrock			---	---	---	---	---	---	---	---
GuD:												
Guernsey--------	0-8	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	90-100	75-95	70-95	55-85	25-40	4-14
	8-13	Silty clay loam, channery silty clay	CH, MH, CL	A-6, A-7	0	0-5	90-100	70-95	65-95	60-90	30-65	10-30
	13-50	Silty clay, silty clay loam, channery silty clay	MH, CL, CH	A-7	0	0-10	75-100	70-95	65-95	60-90	41-65	11-35
	50-68	Channery silty clay loam, silty clay loam, silty clay	MH, CH, CL	A-7	0	0-20	70-100	50-95	50-95	45-90	41-70	11-40
	68-78	Weathered bedrock			---	---	---	---	---	---	---	---
HeB:												
Hazleton--------	0-8	Channery loam	ML, CL-ML	A-4	0	0-15	65-85	65-85	55-80	40-65	0-35	NP-10
	8-36	Very channery loam, channery sandy loam, extremely channery loamy sand	GM, SM, CL-ML	A-1, A-2, A-4	0	0-50	60-95	20-75	10-70	5-55	0-30	NP-8
	36-44	Very channery sandy loam, very channery loam, extremely channery loamy sand	GM, SM	A-1, A-2, A-4	0-2	0-60	55-80	10-50	5-50	5-40	0-30	NP-8
	44-46	Unweathered bedrock			---	---	---	---	---	---	---	---

TABLE 28.--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	
HeC:												
Hazleton--------	0-7	Channery loam	CL-ML, ML	A-4	0	0-15	65-85	65-85	55-80	40-65	0-35	NP-10
	7-40	Very channery sandy loam, channery loam, extremely channery loamy sand	SM, CL-ML, GM	A-4, A-2, A-1	0	0-50	60-95	20-75	10-70	5-55	0-30	NP-8
	40-45	Extremely channery sandy loam, very channery loam, extremely channery loamy sand	GM	A-4, A-1, A-2	0-2	0-60	55-80	10-50	5-50	5-40	0-30	NP-8
	45-47	Unweathered bedrock			---	---	---	---	---	---	---	---
HeD:												
Hazleton--------	0-3	Channery loam	ML, CL-ML	A-4	0	0-15	65-85	65-85	55-80	40-65	0-35	NP-10
	3-45	Very channery sandy loam, channery loam, extremely channery loamy sand	CL-ML, GM, SM, GP-GM	A-1, A-2, A-4	0	0-50	60-95	20-75	10-70	5-55	0-30	NP-8
	45-58	Extremely channery loamy sand, very channery sandy loam, very channery loam	SP-SC, GM	A-4, A-1, A-2	0-2	0-60	55-80	10-50	5-50	5-40	0-30	NP-8
HeE:												
Hazleton--------	0-7	Channery loam	ML, CL-ML	A-4	0	0-15	65-85	65-85	55-80	40-65	0-35	NP-10
	7-42	Very channery sandy loam, channery loam, extremely channery loamy sand	CL-ML, GM, GP-GM, SM	A-4, A-1, A-2	0	0-50	60-95	20-75	10-70	5-55	0-30	NP-8
	42-48	Extremely channery sandy loam, very channery loam, extremely channery loamy sand	GM	A-4, A-1, A-2	0-2	0-60	55-80	10-50	5-50	5-40	0-30	NP-8
	48-50	Unweathered bedrock			---	---	---	---	---	---	---	---
HfF:												
Hazleton--------	0-3	Channery loam	CL-ML, ML	A-4	0	0-15	65-85	65-85	55-80	40-65	0-35	NP-10
	3-36	Very channery loam, channery sandy loam, extremely channery loamy sand	SM, GP-GM, GM, CL-ML	A-1, A-2, A-4	0	0-50	60-95	20-75	10-70	5-55	0-30	NP-8
	36-44	Extremely channery sandy loam, very channery loam, extremely channery loamy sand	GM	A-2, A-4, A-1	0-2	0-60	55-80	10-50	5-50	5-40	0-30	NP-8
	44-47	Unweathered bedrock			---	---	---	---	---	---	---	---
Rock Outcrop----	---	---	---	---	---	---	---	---	---	---	---	---
HgF:												
Hazleton--------	0-2	Slightly decomposed plant material	PT	A-8	---	---	---	---	---	---	---	---
	2-5	Channery loam	CL-ML, ML	A-4	0	0-15	65-85	65-85	55-80	40-65	0-35	NP-10

TABLE 28.--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	
	5-50	Extremely channery sandy loam, channery sandy loam, very channery sandy loam, extremely channery loamy sand, channery loam	GM, SM, CL-ML	A-2, A-1, A-4	0	0-50	60-95	20-75	10-70	5-55	0-30	NP-8
	50-67	Extremely channery loamy sand, very channery loam, very channery sandy loam	GP-GM, SP-SC, GM	A-2, A-1, A-4	0-2	0-60	55-80	10-50	5-50	5-40	0-30	NP-8
	67-69	Unweathered bedrock			---	---	---	---	---	---	---	---
Westmoreland----	0-4	Channery loam	CL-ML, CL	A-4	0	0-15	65-85	65-85	55-80	40-65	0-35	NP-10
	4-44	Channery silt loam, loam, channery silty clay loam, clay loam	ML, CL, SC	A-4, A-7-6, A-6	0	0-15	65-100	65-95	55-95	40-90	22-45	2-20
	44-52	Very channery silty clay loam, extremely channery silt loam, channery clay loam, channery loam	CL, GC, SC	A-1, A-4, A-2, A-6, A-7-6	0	0-20	25-95	5-85	5-85	5-80	20-45	2-20
	52-54	Unweathered bedrock			---	---	---	---	---	---	---	---
HkA:												
Holly----------	0-4	Silt loam	CL-ML, CL	A-4, A-6	0	0-3	90-100	85-100	80-100	60-90	25-35	3-15
	4-20	Silt loam, loam, gravelly sandy loam, silty clay loam	CL, SC	A-6, A-4	0	0-3	85-100	75-100	65-100	45-90	20-40	NP-20
	20-75	Gravelly loam, loam, silt loam, sandy loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A-2	0	0-5	70-100	65-100	40-100	20-90	16-40	NP-20
	75-77	Unweathered bedrock			---	---	---	---	---	---	---	---
HlB:												
Homewood--------	0-12	Silt loam	CL, CL-ML	A-6, A-4	0	0-3	90-100	90-100	80-100	60-95	20-30	5-15
	12-22	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0-3	90-100	90-100	80-100	65-95	25-40	7-15
	22-42	Loam, gravelly silt loam, clay loam	CL, SC-SM, CL-ML	A-6, A-4	0	0-10	80-95	65-90	55-90	40-80	25-40	7-15
	42-62	Clay loam, loam, gravelly silt loam	CL	A-4, A-6	0	0-15	80-95	65-90	55-90	40-80	25-40	7-15
	62-66	Extremely channery loam, very channery silt loam, very channery clay loam	GC, GC-GM, GP-GC	A-2, A-1	0	8-30	50-85	20-50	15-50	10-50	20-30	5-10
	66-76	Weathered bedrock			---	---	---	---	---	---	---	---
HmA:												
Homeworth-------	0-9	Loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	85-100	70-95	50-75	25-40	5-20
	9-43	Loam, sandy loam, gravelly silt loam	SC-SM, CL-ML, CL, SC	A-2, A-4, A-6	0	0-3	85-100	70-100	40-100	20-90	20-40	7-20
	43-80	Silty clay, silty clay loam	CL, CH	A-7-6, A-6	0	0	100	90-100	85-100	75-95	35-65	15-40

TABLE 28.--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	
HmB:												
Homeworth-------	0-13	Loam	CL-ML, CL	A-4, A-6	0	0-3	95-100	85-100	70-95	50-75	25-40	5-20
	13-38	Loam, sandy loam, gravelly silt loam	SC, CL, CL-ML, SC-SM	A-4, A-2, A-6	0	0-3	85-100	70-100	40-100	20-90	20-40	7-20
	38-80	Silty clay, silty clay loam	CL, CH	A-6, A-7-6	0	0	100	90-100	85-100	75-95	35-65	15-40
HoA:												
Homeworth-------	0-12	Silt loam	CL-ML, CL	A-4, A-6	0	0-3	95-100	85-100	75-100	60-90	25-40	5-20
	12-40	Loam, sandy loam, gravelly silt loam	SC, CL, CL-ML, SC-SM	A-2, A-4, A-6	0	0-3	85-100	70-100	40-100	20-90	20-40	7-20
	40-80	Silty clay, silty clay loam	CL, CH	A-7-6, A-6	0	0	100	90-100	85-100	75-95	35-65	15-40
HoB:												
Homeworth-------	0-13	Silt loam	CL, CL-ML	A-6, A-4	0	0-3	95-100	85-100	75-100	60-90	25-40	5-20
	13-38	Loam, sandy loam, gravelly silt loam	SC-SM, SC, CL-ML, CL	A-4, A-2, A-6	0	0-3	85-100	70-100	40-100	20-90	20-40	7-20
	38-80	Silty clay, silty clay loam	CL, CH	A-7-6, A-6	0	0	100	90-100	85-100	75-95	35-65	15-40
JwA:												
Jimtown---------	0-8	Silt loam	CL, CL-ML	A-4	0	0-3	85-100	80-100	70-100	55-90	20-30	NP-10
	8-16	Silt loam, loam, silty clay loam, very gravelly sandy loam, clay loam, gravelly sandy clay loam	CL-ML, SC, CL	A-6, A-4	0	0-3	75-100	55-100	35-100	15-95	20-40	4-15
	16-32	Gravelly sandy loam, gravelly coarse sandy loam, silty clay loam, silt loam, clay loam, sandy clay loam	SC, GC, CL-ML	A-4, A-6	0	0-3	75-100	30-95	20-95	10-90	25-40	4-15
	32-39	Very gravelly coarse sandy loam, extremely gravelly loamy sand, gravelly sandy loam, loam	GC, GM, SC, SM, CL, ML, CL-ML	A-6, A-4, A-2, A-1	0	0-5	50-100	15-100	10-95	2-75	0-30	NP-15
	39-80	Stratified loamy sand to extremely gravelly loamy sand, coarse sand, very gravelly coarse sandy loam, gravelly sandy loam, loam	SP-SM, ML, SM, GM	A-1, A-2, A-4	0	0-5	45-100	5-100	5-95	1-75	0-30	NP-7
JwB:												
Jimtown---------	0-11	Silt loam	CL-ML, CL	A-4	0	0-3	85-100	80-100	70-100	55-90	20-30	NP-10
	11-42	Loam, silty clay loam, gravelly silt loam, very gravelly sandy loam, clay loam, sandy clay loam	CL, SC, CL-ML	A-6, A-4	0	0-3	75-100	55-100	35-100	15-95	20-40	4-15
	42-50	Gravelly loamy sand, very gravelly sandy loam, extremely gravelly coarse sandy loam, loam	GC, GM, SC, SM, CL-ML	A-2, A-1, A-6, A-4	0	0-5	50-100	15-100	10-95	2-75	0-30	NP-15

TABLE 28.--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	
	50-80	Stratified loamy sand to gravelly loamy sand, very gravelly coarse sandy loam, gravelly sandy loam, loam	GM, ML, SM, SP-SM	A-1, A-4, A-2	0	0-5	45-100	5-100	5-95	1-75	0-30	NP-7
KeB:												
Keene	0-11	Silt loam	CL, CL-ML	A-6, A-4	0	0	95-100	90-100	80-100	65-90	25-36	4-12
	11-25	Silty clay loam, silt loam	CL	A-4, A-6	0	0	95-100	90-100	80-100	65-95	25-40	6-18
	25-66	Silty clay loam, clay loam, channery silty clay	CH, CL	A-7, A-6	0	0-10	75-100	65-90	60-90	45-85	30-55	10-28
KnB:												
Kensington	0-10	Silt loam	CL-ML, CL	A-6, A-4	0	0-3	90-100	85-100	75-100	60-90	20-35	2-15
	10-16	Silty clay loam, gravelly silt loam	CL, CL-ML	A-7-6, A-6, A-4	0	0-5	75-100	55-90	50-90	40-85	25-45	4-20
	16-33	Silt loam, channery loam, clay loam	CL-ML, CL	A-6, A-4, A-2, A-7-6	0	0-5	55-100	55-90	45-90	35-80	20-45	4-20
	33-42	Silt loam, channery loam, silty clay loam, very channery sandy loam, channery fine sandy loam	CL-ML, CL, GM, SC-SM	A-2, A-4, A-6, A-7-6	0	0-20	50-100	45-90	30-90	15-85	20-45	2-20
	42-50	Weathered bedrock			---	---	---	---	---	---	---	---
KnC:												
Kensington	0-11	Silt loam	CL-ML, CL	A-4, A-6	0	0-3	90-100	85-100	75-100	60-90	20-35	2-15
	11-17	Silt loam, gravelly silty clay loam	CL-ML, CL	A-6, A-7-6, A-4	0	0-5	75-100	55-90	50-90	40-85	25-45	4-20
	17-33	Channery loam, silt loam, clay loam	CL-ML, CL	A-4, A-6, A-7-6, A-2	0	0-5	55-100	55-90	45-90	35-80	20-45	4-20
	33-52	Channery loam, silt loam, silty clay loam, very channery sandy loam, channery fine sandy loam	CL-ML, CL, SC-SM, GM	A-2, A-4, A-6, A-7-6	0	0-20	50-100	45-90	30-90	15-85	20-45	2-20
	52-58	Extremely channery loam, flaggy silt loam, channery sandy loam, very channery fine sandy loam	GM, CL-ML, SC-SM	A-4, A-6, A-2, A-1	0	8-75	35-70	10-70	6-70	3-65	0-30	NP-20
	58-71	Weathered bedrock			---	---	---	---	---	---	---	---
	71-73	Unweathered bedrock			---	---	---	---	---	---	---	---
KnD:												
Kensington	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0-3	90-100	85-100	75-100	60-90	20-35	2-15
	10-16	Silt loam, gravelly silty clay loam	CL-ML, CL	A-4, A-6, A-7-6	0	0-5	75-100	55-90	50-90	40-85	25-45	4-20
	16-46	Channery loam, channery silt loam, clay loam	CL-ML, CL	A-7-6, A-6, A-4, A-2	0	0-5	55-100	55-90	45-90	35-80	20-45	4-20

TABLE 28.--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	
	46-60	Channery sandy loam, extremely channery loam, flaggy silt loam, very channery fine sandy loam	CL-ML, CL, SC-SM, GM	A-4, A-6, A-1, A-2	0	8-75	35-85	10-85	6-85	3-65	0-30	NP-20
	60-80	Weathered bedrock			---	---	---	---	---	---	---	---
LbA:												
Lobdell---------	0-10	Silt loam	CL-ML, CL	A-6, A-4	0	0	95-100	90-100	80-100	65-90	20-30	NP-12
	10-42	Silt loam, loam, sandy loam, silty clay loam	CL	A-4, A-6	0	0	90-100	80-100	50-100	25-95	20-35	NP-15
	42-76	Sandy loam, silt loam, loam	CL-ML, SC-SM, SC, CL	A-6, A-4	0	0	90-100	80-100	50-100	25-90	15-35	NP-15
LnA:												
Lorain----------	0-7	Silt loam, silty clay loam	CL	A-7, A-4, A-6	0	0	100	95-100	90-100	80-95	30-50	6-30
	7-54	Silty clay, clay, silty clay loam	CH, CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	35-65	15-45
	54-62	Clay, silty clay, silty clay loam	CH, CL	A-7-6, A-6	0	0	100	90-100	85-100	80-95	35-75	20-45
McB:												
Mechanicsburg---	0-9	Silt loam	CL-ML, CL	A-4, A-6	0	0-3	90-100	85-100	75-100	60-90	20-35	2-12
	9-22	Gravelly loam, silt loam, silty clay loam	CL	A-6, A-7-6, A-4	0	0-5	75-100	70-95	60-95	40-90	25-45	6-20
	22-45	Very channery silt loam, channery silt loam, channery loam, channery sandy loam	CL, SC-SM, CL-ML, GC	A-2, A-4, A-6	0	3-25	50-100	35-75	20-75	10-70	20-35	NP-15
	45-50	Extremely channery silt loam, extremely channery loam, extremely channery sandy loam	GC, GP-GM, GM	A-1, A-2	0	45-75	35-60	5-25	5-25	2-22	0-30	NP-8
	50-67	Weathered bedrock			---	---	---	---	---	---	---	---
	67-69	Unweathered bedrock			---	---	---	---	---	---	---	---
McC:												
Mechanicsburg---	0-8	Silt loam	CL, CL-ML	A-6, A-4	0	0-3	90-100	85-100	75-100	60-90	20-35	2-12
	8-30	Silty clay loam, silt loam, gravelly loam	CL	A-7-6, A-6, A-4	0	0-5	75-100	70-95	60-95	40-90	25-45	6-20
	30-45	Channery loam, channery silt loam, channery sandy loam	CL-ML, GC, CL, SC-SM	A-2, A-1, A-6, A-4	0	3-25	50-100	35-75	20-75	10-70	0-35	NP-15
	45-50	Extremely channery loam, extremely channery silt loam, extremely channery sandy loam	GP-GC, GM, GC, GP-GM	A-2, A-1	0	45-75	35-60	5-25	5-25	2-22	0-30	NP-8
	50-60	Weathered bedrock			---	---	---	---	---	---	---	---

TABLE 28.--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	
MnB:												
Morristown------	0-8	Silty clay loam	CL	A-6, A-7-6	0	0-5	90-100	90-100	75-90	70-85	35-50	12-24
	8-80	Very channery silty clay loam, extremely channery clay loam, channery silt loam	CL, GC	A-7-6, A-6, A-4, A-2	0	8-35	35-75	20-55	20-55	15-50	25-50	4-24
MnD:												
Morristown------	0-5	Silty clay loam	CL	A-6, A-7-6	0	0-5	90-100	90-100	75-90	70-85	35-50	12-24
	5-80	Very channery silty clay loam, channery silty clay loam, extremely channery clay loam, very channery silt loam	CL, GC	A-2, A-4, A-6, A-7-6	0	8-35	35-75	20-55	20-55	15-50	25-50	4-24
MoB:												
Morristown------	0-4	Channery silty clay loam	CL, GC	A-6, A-7-6	0	8-25	70-95	50-75	50-75	45-70	35-50	12-24
	4-80	Very channery silty clay loam, extremely channery clay loam, channery silt loam	CL, GC	A-2, A-4, A-6, A-7-6	0	8-35	35-75	20-55	20-55	15-50	25-50	4-24
MoD:												
Morristown------	0-3	Channery silty clay loam	CL, GC	A-6, A-7-6	0	8-25	70-95	50-75	50-75	45-70	35-50	12-24
	3-80	Very channery silty clay loam, extremely channery clay loam, channery silt loam	GC, CL	A-2, A-4, A-6, A-7-6	0	8-35	35-75	20-55	20-55	15-50	25-50	4-24
OdA:												
Olmsted---------	0-8	Silt loam, loam	CL-ML, CL	A-4, A-6	0	0	85-100	85-100	70-100	50-90	20-35	2-12
	8-21	Loam, sandy loam, coarse sandy loam	SC-SM, CL-ML, CL	A-2, A-6, A-4	0	0-5	85-100	85-100	50-95	25-75	20-40	NP-15
	21-34	Coarse sandy loam, sandy clay loam, gravelly loam, clay loam, sandy loam, silt loam	CL, SC, CL-ML, SC-SM	A-6, A-4, A-2	0	0-5	80-100	65-100	40-100	20-80	20-40	NP-15
	34-60	Sandy clay loam, gravelly coarse sandy loam, very gravelly sandy loam, silt loam, loamy sand, sand	SC-SM, CL-ML, SP-SM, SC, CL	A-6, A-4, A-2, A-1	0	0-5	65-100	35-100	20-100	5-90	20-35	NP-14
Valley----------	0-7	Silt loam	CL	A-7-6, A-6	0	0	100	95-100	85-100	65-95	30-50	11-25
	7-41	Silty clay, silty clay loam, silt loam	CL, CH	A-7, A-6	0	0	100	95-100	85-100	65-95	30-65	11-35
	41-48	Silty clay, silty clay loam	CH, CL	A-7, A-6	0	0	100	95-100	90-100	80-95	35-65	20-35
	48-80	Silty clay loam, clay loam, silt loam, gravelly loam	CL, CH	A-7-6, A-6, A-4	0	0-5	95-100	55-95	45-95	35-90	25-55	6-18

TABLE 28.--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	
OmB:												
Omulga----------	0-9	Silt loam	CL-ML, CL	A-6, A-4	0	0	95-100	90-100	80-100	65-90	25-35	5-15
	9-34	Silty clay loam, silt loam	CL	A-7-6, A-4, A-6	0	0	95-100	90-100	80-100	65-95	25-45	5-20
	34-51	Silty clay loam, silt loam	CL	A-6, A-4	0	0	85-100	85-100	75-100	60-95	20-40	5-20
	51-80	Sandy loam, loam, silt loam, silty clay loam, silty clay	CH, SC, CL	A-6, A-7-6, A-4	0	0	80-100	80-100	50-100	25-95	30-55	4-30
OmC:												
Omulga----------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	80-100	65-90	25-35	5-15
	9-22	Silt loam, silty clay loam	CL	A-4, A-6, A-7-6	0	0	95-100	90-100	80-100	65-95	25-45	5-20
	22-38	Silt loam, silty clay loam	CL	A-4, A-6	0	0	85-100	85-100	75-100	60-95	20-40	5-20
	38-80	Silt loam, loam, sandy loam, silty clay loam, silty clay	CH, SC, CL	A-4, A-7-6, A-6	0	0	80-100	80-100	50-100	25-95	30-55	4-30
OrA:												
Orrville--------	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	90-100	80-100	65-90	22-35	4-16
	10-32	Loam, silt loam, silty clay loam	CL	A-4, A-6	0	0-2	95-100	80-100	65-100	45-95	20-40	2-16
	32-50	Gravelly loam, silt loam, sandy loam	SC, SC-SM, CL-ML, CL, ML	A-1, A-2, A-4, A-6	0	0-5	95-100	65-100	40-100	20-90	15-35	NP-14
	50-80	Very gravelly sandy loam, gravelly loam, extremely gravelly sandy loam, silt loam	CL, GM, SC-SM, GP-GC, CL-ML, ML	A-4, A-2, A-1, A-6	0	0-8	70-100	20-100	12-100	6-90	0-35	NP-14
Pg:												
Pits----------	---	---	---	---	---	---	---	---	---	---	---	---
RaB:												
Rainsboro-------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	85-100	65-90	25-40	5-15
	8-26	Silt loam, silty clay loam	CL	A-7-6, A-6, A-4	0	0	95-100	95-100	85-100	65-95	25-45	5-20
	26-41	Clay loam, silt loam, loam, gravelly silty clay loam	CL	A-7-6, A-6, A-4	0	0-15	85-100	50-95	45-95	30-85	20-45	5-20
	41-80	Gravelly loam, loam, gravelly clay loam, gravelly sandy loam	SC-SM, CL-ML, CL, SC	A-4, A-6, A-2	0	0-15	85-100	50-95	30-95	15-75	20-40	5-20
RaC2:												
Rainsboro-------	0-7	Silt loam	CL-ML, CL	A-6, A-4	0	0	95-100	95-100	85-100	65-90	25-40	5-15
	7-25	Silt loam, silty clay loam	CL	A-7-6, A-6, A-4	0	0	95-100	95-100	85-100	65-95	25-45	5-20
	25-48	Clay loam, silt loam, loam, gravelly silty clay loam	CL	A-7-6, A-6, A-4	0	0-15	85-100	50-95	45-95	30-85	20-45	5-20
	48-80	Loam, gravelly loam, gravelly clay loam, gravelly sandy loam	SC, CL, CL-ML, SC-SM	A-4, A-6, A-2	0	0-15	85-100	50-95	30-95	15-75	20-40	5-20

TABLE 28.--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	
RbC:												
Rainsboro-------	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0-15	95-100	95-100	85-100	65-90	25-40	5-15
	10-21	Silt loam, silty clay loam	CL	A-6, A-7-6, A-4	0	0	95-100	95-100	85-100	65-95	25-45	5-20
	21-47	Silt loam, clay loam, loam, gravelly silty clay loam	CL	A-4, A-6, A-7-6	0	0-15	85-100	50-95	45-95	30-85	20-45	5-20
	47-80	Loam, gravelly loam, gravelly clay loam, gravelly sandy loam	CL-ML, SC-SM, SC, CL	A-2, A-6, A-4	0	0-15	85-100	50-95	30-95	15-75	20-40	5-20
ReA:												
Ravenna---------	0-10	Silt loam	CL, CL-ML	A-6, A-4	0	0-2	90-100	85-95	75-95	60-85	25-35	4-15
	10-24	Silt loam, silty clay loam, loam, clay loam	CL	A-6, A-4	0	0-2	85-100	80-95	65-95	45-90	25-40	6-15
	24-40	Loam, gravelly silt loam	CL, CL-ML	A-6, A-4	0	0-3	85-95	70-90	60-90	40-80	20-35	3-15
	40-80	Loam, silt loam, gravelly sandy loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0-5	80-95	65-85	40-85	20-75	20-32	3-15
ReB:												
Ravenna---------	0-13	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	90-100	85-95	75-95	60-85	25-35	4-15
	13-25	Silt loam, loam, silty clay loam, clay loam	CL	A-4, A-6	0	0-2	85-100	80-95	65-95	45-90	25-40	6-15
	25-42	Loam, silt loam, gravelly silt loam	CL-ML, CL	A-6, A-4	0	0-3	85-95	70-90	60-90	40-80	20-35	3-15
	42-80	Loam, gravelly silt loam, gravelly sandy loam	SC, CL-ML, SC-SM, CL	A-4, A-6	0	0-5	80-95	65-85	40-85	20-75	20-32	3-15
RhD:												
Richland--------	0-8	Silt loam, loam	CL, CL-ML	A-6, A-4	0-3	0-10	80-95	70-90	60-90	40-80	16-35	3-20
	8-55	Channery clay loam, loam, channery loam, silt loam, silty clay loam, sandy clay loam	SC, CL	A-6, A-7-6, A-4	0-5	3-25	80-95	50-90	40-90	20-85	30-45	7-20
	55-80	Very channery clay loam, channery loam, very channery silty clay loam, channery silt loam	CL, GC	A-7-6, A-6, A-2, A-4	0-5	8-25	80-95	30-70	25-70	15-70	30-45	9-18
RhE:												
Richland--------	0-9	Silt loam, loam	CL, CL-ML	A-4, A-6	0-3	0-10	80-95	70-90	60-90	40-80	16-35	3-20
	9-36	Channery silty clay loam, channery silt loam, channery loam, loam, channery clay loam, sandy clay loam	SC, CL	A-7-6, A-6, A-4	0-5	3-25	50-95	50-90	40-90	20-85	30-45	7-20
	36-80	Very channery silt loam, channery clay loam, channery loam, very channery silty clay loam	GC, CL	A-7-6, A-4, A-2, A-6	0-5	8-25	80-95	30-70	25-70	15-70	30-45	9-18
RsB:												
Rittman---------	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0-2	95-100	85-100	75-100	60-90	25-40	4-14
	10-21	Silty clay loam, clay loam, silt loam	CL	A-6, A-7-6	0	0-2	90-100	85-95	75-95	60-90	30-45	11-20
	21-44	Silty clay loam, clay loam	CL	A-6, A-7-6	0	0-2	85-100	75-95	65-95	50-90	25-45	11-20

TABLE 28.--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	
	44-80	Silty clay loam, clay loam	CL	A-6, A-7-6	0	0-2	85-100	75-95	65-95	50-90	25-45	11-18
RsC:												
Rittman---------	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	85-100	75-100	60-90	25-40	4-14
	8-24	Silty clay loam, silt loam, clay loam	CL	A-7-6, A-6	0	0-2	90-100	85-95	75-95	60-90	30-45	11-20
	24-38	Silty clay loam, clay loam	CL	A-7-6, A-6	0	0-2	85-100	75-95	65-95	50-90	25-45	11-20
	38-80	Silty clay loam, clay loam	CL	A-6, A-7-6	0	0-2	85-100	75-95	65-95	50-90	25-45	11-18
RsD2:												
Rittman---------	0-4	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	85-100	75-100	60-90	25-40	4-14
	4-20	Silty clay loam, silt loam, clay loam	CL	A-7-6, A-6	0	0-2	90-100	85-95	75-95	60-90	30-45	11-20
	20-45	Silty clay loam, clay loam	CL	A-6, A-7-6	0	0-2	85-100	75-95	65-95	50-90	25-45	11-20
	45-80	Silty clay loam, clay loam	CL	A-6, A-7-6	0	0-2	85-100	75-95	65-95	50-90	25-45	11-18
TeB:												
Teegarden-------	0-11	Silt loam	CL-ML, CL	A-6, A-4	0	0-2	90-100	90-100	80-100	60-90	20-30	5-15
	11-22	Silt loam, silty clay loam, loam, clay loam	CL, CL-ML	A-4, A-6	0	0-5	75-100	75-100	65-95	45-90	25-40	7-15
	22-32	Silty clay loam, silt loam, loam, gravelly clay loam	CL	A-6, A-4	0	0-10	80-95	70-90	60-90	40-85	25-40	7-15
	32-65	Channery silty clay loam, silt loam, loam, clay loam, silty clay	CL-ML, GC, CL, CH, GC-GM	A-4, A-7, A-6	0	0-15	65-100	65-90	55-90	40-85	25-60	5-25
	65-80	Silty clay loam, very channery loam, channery silt loam, silty clay, clay loam	GC, GC-GM, CH, CL	A-2, A-7, A-6, A-4	0	2-20	40-100	30-100	25-100	15-95	30-55	5-30
TeC:												
Teegarden-------	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	90-100	90-100	80-100	60-90	20-30	5-15
	10-25	Silt loam, loam, gravelly clay loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0-5	75-100	75-100	65-95	45-90	25-40	7-15
	25-34	Clay loam, gravelly clay loam, silt loam, loam, silty clay loam	CL	A-6, A-4	0	0-10	80-95	70-90	60-90	40-85	25-40	7-15
	34-52	Silt loam, silty clay, channery loam, clay loam, silty clay loam	CL-ML, CL, GC-GM, CH, GC	A-7, A-6, A-4	0	0-15	65-100	65-90	55-90	40-85	25-60	5-25
	52-65	Very channery silty clay loam, very channery loam, channery silt loam, silty clay, clay loam	GC-GM, CL, GC, CH	A-7, A-6, A-4, A-2	0	2-20	40-100	30-100	25-100	15-95	30-55	5-30
	65-80	Weathered bedrock			---	---	---	---	---	---	---	---

TABLE 28.--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	
TeC2:												
Teegarden-------	0-10	Silt loam	CL-ML, CL	A-6, A-4	0	0-2	90-100	90-100	80-100	60-90	20-30	5-15
	10-25	Silt loam, loam, silty clay loam, clay loam	CL, CL-ML	A-6, A-4	0	0-5	75-100	75-100	65-95	45-90	25-40	7-15
	25-34	Clay loam, gravelly clay loam, silt loam, loam, silty clay loam	CL	A-4, A-6	0	0-10	80-95	70-90	60-90	40-85	25-40	7-15
	34-52	Silt loam, silty clay, channery loam, clay loam, silty clay loam	CL-ML, CL, CH, GC, GC-GM	A-4, A-6, A-7	0	0-15	65-100	65-90	55-90	40-85	25-60	5-25
	52-65	Very channery silty clay loam, very channery loam, channery silt loam, silty clay, clay loam	GC, CL, GC-GM, CH	A-4, A-6, A-7	0	2-20	40-100	30-100	25-100	15-95	30-55	5-30
	65-80	Weathered bedrock			---	---	---	---	---	---	---	---
ToA:												
Tioga----------	0-9	Loam	CL-ML, ML	A-4	0	0	100	85-100	70-95	50-75	0-15	NP-4
	9-40	Loam, silt loam, gravelly fine sandy loam, sandy loam	SM, ML, SC-SM, CL-ML	A-1, A-2, A-4	0	0-10	55-100	50-100	30-100	15-90	0-26	NP-7
	40-80	Stratified sandy loam to loamy sand, gravelly loamy sand, channery sandy loam, very channery fine sandy loam, loam, silt loam	SM, ML, GW-GM, GM, CL-ML, SC-SM	A-4, A-2, A-1, A-3	0	0-10	35-100	35-100	20-100	5-90	0-26	NP-7
Ua:												
Udorthents------	0-4	Loam, silty clay loam, sandy loam	SM, CL-ML, CL, SC-SM, ML	A-4, A-6, A-7-6, A-2	0	0-5	80-100	75-100	55-100	30-95	0-45	NP-15
	4-80	Very channery loam, very gravelly sandy loam, silty clay loam	SM, CL, GM, SC-SM, ML	A-6, A-4, A-2, A-7-6	0	0-10	35-100	30-100	20-100	10-95	0-45	NP-15
Ub:												
Udorthents------	0-24	Channery loam, silt loam	SM, SC, CL, ML	A-6, A-4, A-2	0	0-5	60-100	55-100	30-100	10-90	0-30	NP-15
	24-80	Variable			0	0-10	0	0	0	0	0-0	NP
Uc:												
Udorthents------	0-4	Channery sandy loam, loam, silty clay loam	SM, SC, ML, CL	A-4, A-7-6, A-6, A-2	0	0-5	80-100	75-100	55-100	30-95	0-45	NP-15
	4-80	Very channery loam, very gravelly sandy loam, silty clay loam	CL, GM, ML, SC	A-7-6, A-2, A-4, A-6	0	0-10	35-100	30-100	20-100	10-95	0-45	NP-15
Pits----------	---	---	---	---	---	---	---	---	---	---	---	---
UkC2:												
Upshur----------	0-4	Silty clay loam	CL	A-7-6, A-6	0	0	95-100	75-100	70-100	65-95	35-50	11-25
	4-44	Silty clay, channery clay	CL, CH	A-7	0	0	95-100	65-100	60-100	50-95	45-70	20-40
	44-54	Weathered bedrock			---	---	---	---	---	---	---	---

TABLE 28.--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	
Berks----------	0-7	Channery silt loam	CL, ML, CL-ML	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	7-20	Very channery silt loam, channery silt loam, extremely channery loam	CL, CL-ML, GC, GM, SC, SM	A-2, A-1, A-4	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	20-24	Extremely channery silt loam, very channery loam	GM, GC, GP-GC, GP-GM	A-2, A-1, A-4	0	25-30	40-80	15-65	15-60	10-55	25-36	2-10
	24-34	Weathered bedrock			---	---	---	---	---	---	---	---
UkD2:												
Upshur----------	0-8	Silty clay loam	CL	A-6, A-7-6	0	0	95-100	75-100	70-100	65-95	35-50	11-25
	8-42	Silty clay, channery clay	CH, CL	A-7	0	0	95-100	65-100	60-100	50-95	45-70	20-40
	42-72	Silty clay loam, silty clay, channery silty clay loam, very channery silty clay loam	CL, GC, CH	A-6, A-7, A-1, A-2	0	0	80-100	25-100	20-100	20-95	35-65	6-40
	72-80	Weathered bedrock			---	---	---	---	---	---	---	---
Berks----------	0-5	Channery silt loam	ML, CL-ML, CL	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	5-22	Very channery silt loam, channery silt loam, extremely channery loam	SM, GC, CL, SC, GM, CL-ML	A-1, A-2, A-4	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	22-24	Unweathered bedrock			---	---	---	---	---	---	---	---
UkE2:												
Upshur----------	0-3	Silty clay loam	CL	A-7-6, A-6	0	0	95-100	75-100	70-100	65-95	35-50	11-25
	3-46	Silty clay, channery clay	CH, CL	A-7	0	0	95-100	65-100	60-100	50-95	45-70	20-40
	46-50	Silty clay loam, very channery silty clay, channery silty clay loam	CH, CL, GC	A-6, A-1, A-7, A-2	0	0	80-100	25-100	20-100	20-95	35-65	6-40
	50-60	Weathered bedrock			---	---	---	---	---	---	---	---
Berks----------	0-4	Channery silt loam	CL-ML, CL, ML	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	4-22	Very channery silt loam, channery silt loam, extremely channery loam	GM, SC, SM, GC, CL-ML, CL	A-1, A-2, A-4	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	22-24	Unweathered bedrock			---	---	---	---	---	---	---	---
Ur:												
Urban Land------	---	---	---	---	---	---	---	---	---	---	---	---
UtB:												
Urban Land------	---	---	---	---	---	---	---	---	---	---	---	---
Canfield--------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0-3	90-100	85-95	75-95	60-85	16-35	2-15
	6-28	Silt loam, silty clay loam, loam	CL-ML, ML, CL	A-4, A-6	0	0-5	85-100	85-95	70-95	50-90	20-40	3-16
	28-48	Loam, gravelly loam, silt loam, gravelly silt loam	CL-ML, CL	A-4, A-6	0	0-5	80-95	70-95	60-95	40-85	20-35	3-14
	48-80	Loam, gravelly silt loam, sandy loam	CL, CL-ML, ML, SM	A-4, A-6	0	0-5	80-95	55-95	30-95	15-85	20-35	2-15

TABLE 28.--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	
UtC:												
Urban Land------	---	---	---	---	---	---	---	---	---	---	---	---
Canfield--------	0-6	Silt loam	CL-ML, CL	A-4, A-6	0	0-3	90-100	85-95	75-95	60-85	16-35	2-15
	6-24	Silt loam, loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0-5	85-100	85-95	70-95	50-90	20-40	3-16
	24-45	Silt loam, gravelly silt loam, loam, gravelly loam	CL-ML, CL	A-6, A-4	0	0-5	80-95	70-95	60-95	40-85	20-35	3-14
	45-80	Loam, gravelly loam, silt loam, sandy loam	CL, CL-ML, ML, SM	A-4, A-6	0	0-5	80-95	55-95	30-95	15-85	20-35	2-15
UvB:												
Urban Land------	---	---	---	---	---	---	---	---	---	---	---	---
Chili----------	0-8	Silt loam	ML, CL-ML	A-4	0	0-2	85-100	75-100	65-100	45-90	25-35	4-10
	8-20	Silt loam, gravelly loam, clay loam, sandy clay loam	CL, GC	A-6, A-4, A-2, A-1-b	0	0-5	65-100	55-95	35-95	15-75	0-35	NP-15
	20-55	Gravelly loam, very gravelly sandy clay loam, gravelly sandy loam, very gravelly sandy loam, silt loam, clay loam	GC-GM, GM, SM, SC-SM	A-6, A-4, A-2, A-1-b	0	0-5	45-80	30-75	20-75	10-60	0-30	NP-15
	55-80	Gravelly loamy sand, very gravelly sand, stratified gravelly loamy sand to very gravelly sand	SM, GW, SP, GM	A-1	0	2-15	30-70	30-65	15-50	2-20	0-14	NP
VaA:												
Valley----------	0-7	Silt loam	CL	A-6, A-4	0	0	100	95-100	85-100	65-95	30-50	8-25
	7-41	Silty clay, silty clay loam, silt loam	CL, CH	A-7-6, A-6, A-4	0	0	100	95-100	85-100	65-95	30-65	8-35
	41-48	Silty clay, silty clay loam	CH, CL	A-7-6, A-6	0	0	100	95-100	90-100	80-95	35-65	20-35
	48-80	Silty clay loam, loam, clay loam, gravelly silt loam	CL, CH	A-4, A-6, A-7-6	0	0-5	95-100	55-95	45-95	35-90	25-55	6-18
VbA:												
Valley----------	0-11	Silty clay loam	CL	A-7-6, A-6	0	0	100	95-100	85-100	65-95	30-55	11-25
	11-41	Silty clay, silty clay loam, silt loam	CH, CL	A-4, A-7-6, A-6	0	0	100	95-100	85-100	65-95	30-65	8-35
	41-48	Silty clay, silty clay loam	CH, CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	35-65	20-35
	48-80	Silty clay loam, loam, clay loam, gravelly silt loam	CL, CH	A-7-6, A-6, A-4	0	0-5	95-100	55-95	45-95	35-90	25-55	6-18
VcA:												
Valley----------	0-7	Silt loam	CL	A-6, A-4	0	0	100	95-100	85-100	65-95	30-50	8-25
	7-41	Silty clay, silty clay loam, silt loam	CH, CL	A-6, A-4, A-7-6	0	0	100	95-100	85-100	65-95	30-65	8-35
	41-48	Silty clay, silty clay loam	CH, CL	A-7-6, A-6	0	0	100	95-100	90-100	80-95	35-65	20-35

TABLE 28.--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	
	48-80	Silty clay loam, loam, clay loam, gravelly silt loam	CL, CH	A-4, A-6, A-7-6	0	0-5	95-100	55-95	45-95	35-90	25-55	6-18
Lorain----------	0-7	Silt loam, silty clay loam	CL	A-6, A-7-6, A-4	0	0	100	95-100	90-100	80-95	30-50	6-30
	7-54	Silty clay, clay, silty clay loam	CL, CH	A-6, A-7-6	0	0	100	95-100	90-100	80-95	35-65	15-45
	54-62	Clay, silty clay, silty clay loam	CL, CH	A-6, A-7-6	0	0	100	90-100	85-100	80-95	35-75	20-45
VnB:												
Vandergrift-----	0-10	Silt loam	CL, CL-ML	A-6, A-4	0	0	95-100	85-100	75-100	60-90	25-40	4-14
	10-46	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7	0	0-5	90-100	65-100	60-100	50-95	25-55	11-30
	46-56	Very channery silty clay loam, extremely channery silt loam, channery silty clay, clay	GC, CH, CL	A-7, A-2, A-1, A-4, A-6	0	0-35	35-100	15-100	15-100	10-95	25-55	6-30
	56-58	Unweathered bedrock			---	---	---	---	---	---	---	---
VnC:												
Vandergrift-----	0-8	Silt loam	CL-ML, CL	A-6, A-4	0	0	95-100	85-100	75-100	60-90	25-40	4-14
	8-52	Silty clay, silty clay loam, parachannery silty clay, clay	CL, CH	A-6, A-7	0	0-5	90-100	65-100	60-100	50-95	25-55	11-30
	52-76	Very parachannery silty clay, extremely channery silt loam, channery silty clay loam, clay	GC, CH, CL	A-4, A-2, A-1, A-6, A-7	0	0-35	35-100	15-100	15-100	10-95	25-55	6-30
	76-80	Weathered bedrock			---	---	---	---	---	---	---	---
W:												
Water----------	---	---	---	---	---	---	---	---	---	---	---	---
WaA:												
Wadsworth-------	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	95-100	85-100	70-90	20-35	3-15
	10-24	Silty clay loam, silt loam, clay loam	CL	A-7-6, A-6	0	0-2	95-100	95-100	85-100	65-95	30-45	12-20
	24-45	Silty clay loam, clay loam, silt loam	CL	A-7-6, A-6	0	0-3	85-100	85-95	75-95	60-90	25-45	11-20
	45-80	Silty clay loam, silt loam, clay loam, channery loam	CL, CL-ML	A-4, A-6	0	0-3	85-100	80-95	65-95	45-90	25-40	6-16
WaB:												
Wadsworth-------	0-8	Silt loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	95-100	85-100	70-90	20-35	3-15
	8-27	Silty clay loam, silt loam, clay loam	CL	A-6, A-7-6	0	0-2	95-100	95-100	85-100	65-95	30-45	12-20
	27-46	Clay loam, silty clay loam, silt loam	CL	A-7-6, A-6	0	0-3	85-100	85-95	75-95	60-90	25-45	11-20

TABLE 28.--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	
	46-80	Clay loam, silty clay loam, gravelly clay loam, silt loam, loam	CL, CL-ML	A-4, A-6, A-7-6	0	0-3	85-100	80-95	65-95	45-90	25-45	6-16
WkE:												
Westmoreland----	0-3	Silt loam	CL, CL-ML	A-4	0	0-15	70-100	70-95	60-95	40-85	0-35	NP-10
	3-36	Channery silt loam, silty clay loam, clay loam, channery loam	CL, ML, SC	A-6, A-4, A-7-6	0	0-15	65-100	55-95	45-95	30-90	22-45	2-20
	36-50	Very channery silt loam, channery silty clay loam, extremely channery clay loam, channery loam	SC, CL, GC	A-1, A-2, A-4, A-7-6, A-6	0	0-20	25-95	5-75	5-75	5-70	20-45	2-20
	50-60	Weathered bedrock			---	---	---	---	---	---	---	---
Berks----------	0-4	Channery silt loam	ML, CL-ML	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	4-20	Very channery silt loam, extremely channery silt loam, channery loam	CL, CL-ML, GC, GM, SM, SC	A-1, A-2, A-4	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	20-24	Extremely channery silt loam, very channery silt loam, very channery loam	GM, GP-GC, GC, GP-GM, SM	A-2, A-4, A-1	0	25-30	20-65	5-50	5-50	5-50	24-40	2-16
	24-26	Unweathered bedrock			---	---	---	---	---	---	---	---
WkF:												
Westmoreland----	0-1	Slightly decomposed plant material	PT	A-8	---	---	---	---	---	---	---	---
	1-4	Silt loam	CL, CL-ML	A-4	0	0-15	70-100	70-95	60-95	40-85	0-35	NP-10
	4-38	Channery silty clay loam, channery silt loam, clay loam, loam	SC, ML, CL	A-4, A-6, A-7-6	0	0-15	65-100	55-95	45-95	30-90	22-45	2-20
	38-80	Very channery silty clay loam, extremely channery silty clay loam, very parachannery silty clay loam, extremely parachannery silty clay loam, channery loam	GC, CL, SC	A-7-6, A-6, A-4, A-2, A-1	0	0-20	25-95	5-75	5-75	5-70	20-45	2-20
Berks----------	0-3	Channery silt loam	ML, CL, CL-ML	A-4	0	0-15	55-80	55-75	55-70	40-55	25-36	5-10
	3-22	Very channery silt loam, extremely channery silt loam, channery loam	CL, CL-ML, GC, GM, SC, SM	A-4, A-2, A-1	0	0-30	40-80	15-65	15-65	10-60	25-36	5-10
	22-32	Weathered bedrock			---	---	---	---	---	---	---	---

TABLE 28.--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	
WmC:												
Westmoreland----	0-6	Silt loam	CL, CL-ML	A-4	0	0-15	70-100	70-95	60-95	40-85	0-35	NP-10
	6-32	Silty clay loam, channery silt loam, clay loam	ML, CL, SC	A-6, A-7-6, A-4	0	0-15	65-100	65-95	45-95	30-90	22-45	2-20
	32-60	Channery silt loam, very channery silty clay loam, extremely channery clay loam, channery loam	GC, CL, SC	A-1, A-2, A-4, A-6, A-7-6	0	0-20	25-95	5-75	5-75	5-70	20-45	2-20
	60-70	Weathered bedrock			---	---	---	---	---	---	---	---
Coshocton-------	0-8	Silt loam	CL, CL-ML	A-6, A-4	0	0-5	85-100	75-95	70-95	55-85	25-40	4-15
	8-31	Silt loam, silty clay loam, clay loam	CL	A-4, A-6	0	0-5	85-100	75-95	70-95	55-90	25-40	6-18
	31-45	Channery silt loam, loam, silty clay loam, silty clay	CH, CL	A-7-6, A-6	0	0-10	70-100	50-85	40-85	30-80	35-55	20-35
	45-66	Channery silty clay loam, loam, very channery clay loam, silty clay	CH, CL, GC	A-7-6, A-6, A-2	0	0-20	40-100	35-85	30-85	20-80	30-55	16-35
	66-76	Weathered bedrock			---	---	---	---	---	---	---	---
WmD:												
Westmoreland----	0-5	Silt loam	CL, CL-ML	A-4	0	0-15	70-100	70-95	60-95	40-85	0-35	NP-10
	5-37	Silty clay loam, channery silt loam, clay loam, loam	CL, ML, SC	A-4, A-6, A-7-6	0	0-15	65-100	65-95	45-95	30-90	22-45	2-20
	37-65	Very channery silty clay loam, extremely channery silt loam, channery clay loam, channery loam	GC, CL, SC	A-2, A-1, A-4, A-6, A-7-6	0	0-20	25-95	5-75	5-75	5-70	20-45	2-20
	65-75	Weathered bedrock			---	---	---	---	---	---	---	---
Coshocton-------	0-3	Silt loam	CL-ML, CL	A-6, A-4	0	0-5	85-100	75-95	70-95	55-85	25-40	4-15
	3-14	Silt loam, clay loam, silty clay loam	CL	A-4, A-6	0	0-5	85-100	75-95	70-95	55-90	25-40	6-18
	14-38	Channery silty clay loam, loam, silt loam, silty clay	CH, CL	A-6, A-7-6	0	0-10	70-100	50-85	40-85	30-80	35-55	20-35
	38-72	Channery silty clay loam, very channery loam, clay loam, silty clay	GC, CL, CH	A-7-6, A-6, A-2	0	0-20	40-100	35-85	30-85	20-80	30-55	16-35
	72-80	Weathered bedrock			---	---	---	---	---	---	---	---
WoA:												
Wick----------	0-5	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	95-100	85-100	65-90	25-35	4-20
	5-34	Silty clay loam, silt loam	CL	A-7-6, A-4, A-6	0	0	100	95-100	85-100	65-95	25-45	5-20
	34-80	Silty clay, silty clay loam, silt loam, loam	CL, CH	A-6, A-4, A-7-6	0	0	90-100	80-100	65-100	45-95	25-55	5-30

TABLE 28.--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	
ZeA:												
Zepernick-------	0-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	85-100	65-90	15-32	4-15
	10-50	Silt loam, silty clay loam	CL	A-7-6, A-4, A-6	0	0	100	95-100	85-100	70-95	22-45	3-20
	50-80	Silt loam, loam, gravelly silty clay loam, stratified sandy loam to fine sandy loam to loamy fine sand to fine sand, very gravelly loam	SC-SM, GM, CL-ML, CL	A-4, A-6, A-7-6, A-2	0	0	70-100	40-100	20-100	5-95	22-45	3-20

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" apply only to the surface layer. Absence of an entry indicates that data were not estimated. See text on page 242 for additional information.)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Erosion factors Kw	Kf	T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in					
AmF:										
Amanda----------	0-5	12-22	1.25-1.45	0.60-2.00	0.18-0.24	Low	.37	.43	5	5
	5-32	23-34	1.45-1.65	0.60-2.00	0.15-0.20	Moderate	.37	.43		
	32-70	20-35	1.45-1.70	0.20-0.60	0.13-0.19	Moderate	.37	.49		
	70-80	15-25	1.45-1.70	0.20-0.60	0.13-0.19	Low	.37	.49		
BkB:										
Berks----------	0-10	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	10-36	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	36-38	---	---	0.00-0.20	---	---	---	---		
BkC:										
Berks----------	0-7	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	7-23	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	23-25	---	---	0.00-0.20	---	---	---	---		
BkD:										
Berks----------	0-7	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	7-24	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	24-26	---	---	0.00-0.20	---	---	---	---		
BkE:										
Berks----------	0-1	---	0.13-0.23	2.00-6.00	0.35-0.45	Low	---	---	3	6
	1-8	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32		
	8-22	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	22-24	---	---	0.00-0.20	---	---	---	---		
BmB:										
Berks----------	0-6	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	6-22	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	22-24	---	---	0.00-0.20	---	---	---	---		
Urban land------	---	---	---	---	---	---	---	---	-	---
BmC:										
Berks----------	0-6	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	6-22	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	22-24	---	---	0.00-0.20	---	---	---	---		
Urban land------	---	---	---	---	---	---	---	---	-	---
BmD:										
Berks----------	0-6	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	6-23	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	23-25	---	---	0.00-0.20	---	---	---	---		
Urban land------	---	---	---	---	---	---	---	---	-	---

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
BpF:										
Bethesda--------	0-2	18-27	1.40-1.55	0.60-2.00	0.10-0.16	Low	.28	.64	5	6
	2-80	18-35	1.60-1.90	0.20-0.60	0.04-0.10	Low	.32	.64		
BsC2:										
Bogart----------	0-8	7-24	1.30-1.50	0.60-2.00	0.16-0.21	Low	.32	.37	4	5
	8-34	15-27	1.25-1.60	0.60-2.00	0.11-0.16	Low	.32	.55		
	34-44	8-30	1.25-1.60	0.60-2.00	0.11-0.16	Low	.32	.55		
	44-52	8-30	1.20-1.60	2.00-6.00	0.10-0.14	Low	.32	.37		
	52-80	4-16	1.20-1.50	6.00-20.00	0.10-0.14	Low	.10	.24		
BtA:										
Bogart----------	0-11	7-24	1.30-1.50	0.60-2.00	0.16-0.21	Low	.32	.37	4	5
	11-33	15-27	1.25-1.60	0.60-2.00	0.11-0.16	Low	.32	.55		
	33-49	8-30	1.20-1.60	2.00-6.00	0.10-0.14	Low	.32	.64		
	49-80	4-16	1.20-1.50	6.00-20.00	0.10-0.14	Low	.10	.24		
BtB:										
Bogart----------	0-7	7-24	1.30-1.50	0.60-2.00	0.16-0.21	Low	.32	.37	4	5
	7-28	15-35	1.25-1.60	0.60-2.00	0.11-0.16	Low	.32	.55		
	28-42	8-30	1.20-1.60	2.00-6.00	0.10-0.14	Low	.32	.64		
	42-60	4-16	1.20-1.50	6.00-20.00	0.10-0.14	Low	.10	.24		
BtC:										
Bogart----------	0-9	7-24	1.30-1.50	0.60-2.00	0.16-0.21	Low	.32	.37	4	5
	9-43	15-27	1.25-1.60	0.60-2.00	0.11-0.16	Low	.32	.55		
	43-51	8-30	1.20-1.60	2.00-6.00	0.10-0.14	Low	.10	.24		
	51-80	4-16	1.20-1.50	6.00-20.00	0.10-0.14	Low	.10	.24		
CaA:										
Calcutta--------	0-1	---	0.13-0.23	2.00-6.00	0.35-0.45	Low	---	---	4	5
	1-9	12-25	1.30-1.45	0.60-2.00	0.18-0.22	Low	.43	.43		
	9-27	20-35	1.40-1.60	0.20-0.60	0.16-0.20	Moderate	.43	.43		
	27-46	12-35	1.60-1.80	0.06-0.20	0.06-0.08	Moderate	.43	.43		
	46-80	12-35	1.20-1.60	0.60-6.00	0.15-0.18	Moderate	.43	.43		
CcB:										
Canfield--------	0-11	12-22	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	11-22	18-32	1.45-1.70	0.60-2.00	0.14-0.19	Low	.37	.49		
	22-45	15-27	1.60-1.90	0.06-0.20	0.07-0.10	Low	.37	.49		
	45-80	12-27	1.55-1.85	0.06-0.20	0.07-0.10	Low	.37	.49		
CcC:										
Canfield--------	0-10	12-22	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	10-25	18-32	1.45-1.70	0.60-2.00	0.14-0.19	Low	.37	.49		
	25-40	15-27	1.60-1.90	0.06-0.20	0.07-0.10	Low	.37	.49		
	40-80	12-27	1.55-1.85	0.06-0.20	0.07-0.10	Low	.37	.49		
CcD:										
Canfield--------	0-8	12-22	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	8-21	18-32	1.45-1.70	0.60-2.00	0.14-0.19	Low	.37	.49		
	21-40	15-27	1.60-1.90	0.06-0.20	0.07-0.10	Low	.37	.49		
	40-80	12-27	1.55-1.85	0.06-0.20	0.07-0.10	Low	.37	.49		
CcE:										
Canfield--------	0-7	12-22	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	7-26	18-32	1.45-1.70	0.60-2.00	0.14-0.19	Low	.37	.49		
	26-50	15-27	1.60-1.90	0.06-0.20	0.07-0.10	Low	.37	.49		
	50-80	12-27	1.55-1.85	0.06-0.20	0.07-0.10	Low	.37	.49		
CeA:										
Carlisle--------	0-80	---	0.13-0.23	0.20-6.00	0.35-0.45	Low	---	---	3	2

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
CfD2:										
Chili----------	0-4	7-18	1.30-1.50	0.60-2.00	0.14-0.18	Low	.32	.37	4	5
	4-62	18-32	1.30-1.55	2.00-6.00	0.09-0.16	Low	.32	.55		
	62-80	1-10	1.25-1.50	6.00-20.00	0.02-0.08	Low	.10	.32		
ChA:										
Chili----------	0-8	12-20	1.30-1.50	0.60-2.00	0.14-0.18	Low	.32	.37	4	5
	8-16	18-32	1.30-1.55	2.00-6.00	0.09-0.16	Low	.32	.55		
	16-55	7-32	1.30-1.55	2.00-6.00	0.06-0.16	Low	.17	.37		
	55-80	1-10	1.25-1.50	6.00-20.00	0.02-0.08	Low	.10	.32		
ChB:										
Chili----------	0-13	12-20	1.30-1.50	0.60-2.00	0.14-0.18	Low	.32	.37	4	5
	13-18	18-32	1.30-1.55	2.00-6.00	0.09-0.16	Low	.32	.55		
	18-50	7-32	1.30-1.55	2.00-6.00	0.06-0.16	Low	.17	.37		
	50-80	1-10	1.25-1.50	6.00-20.00	0.02-0.08	Low	.10	.32		
ChC:										
Chili----------	0-10	12-20	1.30-1.50	0.60-2.00	0.14-0.18	Low	.32	.37	4	5
	10-45	18-32	1.30-1.55	2.00-6.00	0.09-0.16	Low	.32	.55		
	45-70	7-32	1.30-1.55	2.00-6.00	0.06-0.16	Low	.17	.37		
	70-80	1-10	1.25-1.50	6.00-20.00	0.02-0.08	Low	.10	.32		
CmB:										
Conotton--------	0-10	8-16	1.30-1.50	2.00-6.00	0.10-0.14	Low	.24	.43	5	5
	10-15	8-18	1.25-1.60	2.00-20.00	0.08-0.12	Low	.24	.64		
	15-80	7-22	1.25-1.60	6.00-20.00	0.06-0.10	Low	.24	.64		
CmC:										
Conotton--------	0-10	8-16	1.30-1.50	2.00-6.00	0.10-0.14	Low	.24	.43	5	5
	10-70	7-22	1.25-1.60	6.00-20.00	0.06-0.10	Low	.24	.64		
	70-80	2-9	1.20-1.50	6.00-20.00	0.02-0.06	Low	.10	.37		
CoB:										
Coshocton-------	0-11	15-23	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	11-23	18-35	1.35-1.55	0.20-2.00	0.14-0.20	Moderate	.37	.43		
	23-45	22-45	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.55		
	45-70	22-45	1.45-1.70	0.06-0.60	0.08-0.12	Moderate	.28	.55		
	70-72	---	---	0.06-2.00	---	---	---	---		
CoC:										
Coshocton-------	0-11	15-23	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	11-32	18-35	1.35-1.55	0.20-2.00	0.14-0.20	Moderate	.37	.43		
	32-42	22-45	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.55		
	42-52	22-45	1.45-1.70	0.06-0.60	0.08-0.12	Moderate	.28	.55		
	52-56	---	---	0.06-2.00	---	---	---	---		
CoD:										
Coshocton-------	0-4	15-23	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	4-24	18-35	1.35-1.55	0.20-2.00	0.14-0.20	Moderate	.37	.43		
	24-48	22-45	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.55		
	48-75	22-45	1.45-1.70	0.06-0.60	0.08-0.12	Moderate	.28	.55		
	75-77	---	---	0.06-2.00	---	---	---	---		
DAM:										
Dam----------	---	---	---	---	---	---	---	---	-	---
DgA:										
Doles----------	0-15	15-25	1.30-1.45	0.60-2.00	0.18-0.22	Low	.43	.43	4	5
	15-30	18-35	1.40-1.60	0.20-0.60	0.16-0.20	Moderate	.43	.43		
	30-60	20-32	1.60-1.80	0.06-0.20	0.06-0.08	Moderate	.43	.43		
	60-80	20-35	1.40-1.60	0.20-0.60	0.15-0.18	Moderate	.43	.43		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
ErC:										
Ernest----------	0-8	12-22	1.20-1.40	0.60-2.00	0.14-0.20	Low	.43	.43	4	5
	8-24	18-35	1.30-1.50	0.60-2.00	0.12-0.16	Moderate	.32	.43		
	24-44	18-32	1.40-1.70	0.06-0.60	0.08-0.12	Low	.32	.55		
	44-60	18-35	1.30-1.60	0.06-0.60	0.08-0.12	Moderate	.32	.55		
ErD:										
Ernest----------	0-14	12-22	1.20-1.40	0.60-2.00	0.14-0.20	Low	.43	.43	4	5
	14-33	18-35	1.30-1.50	0.60-2.00	0.12-0.16	Moderate	.32	.43		
	33-50	18-32	1.40-1.70	0.06-0.60	0.08-0.12	Low	.32	.55		
	50-80	18-35	1.30-1.60	0.06-0.60	0.08-0.12	Moderate	.32	.55		
FbB:										
Fairpoint-------	0-5	18-30	1.40-1.55	0.60-2.00	0.09-0.16	Low	.28	.64	5	6
	5-80	18-35	1.60-1.80	0.20-0.60	0.03-0.10	Moderate	.28	.64		
FbD:										
Fairpoint-------	0-4	18-30	1.40-1.55	0.60-2.00	0.09-0.16	Low	.28	.64	5	6
	4-80	18-35	1.60-1.80	0.20-0.60	0.03-0.10	Moderate	.28	.64		
FbF:										
Fairpoint-------	0-4	18-30	1.40-1.55	0.60-2.00	0.09-0.16	Low	.28	.64	5	6
	4-80	18-35	1.60-1.80	0.20-0.60	0.03-0.10	Moderate	.28	.64		
FcB:										
Fairpoint-------	0-8	18-40	1.40-1.65	0.20-0.60	0.12-0.18	Moderate	.43	.49	5	6
	8-80	18-35	1.60-1.80	0.20-0.60	0.03-0.10	Moderate	.32	.64		
FcD:										
Fairpoint-------	0-8	18-40	1.40-1.65	0.20-0.60	0.12-0.18	Moderate	.43	.49	5	6
	8-80	18-35	1.60-1.80	0.20-0.60	0.03-0.10	Moderate	.32	.64		
FdA:										
Fitchville------	0-10	16-27	1.30-1.45	0.60-2.00	0.17-0.21	Low	.37	.37	5	6
	10-68	20-35	1.45-1.70	0.20-0.60	0.15-0.19	Moderate	.37	.37		
	68-80	15-35	1.40-1.65	0.20-2.00	0.14-0.18	Low	.37	.37		
FdB:										
Fitchville------	0-8	16-27	1.30-1.45	0.60-2.00	0.17-0.21	Low	.37	.37	5	6
	8-50	20-35	1.45-1.70	0.20-0.60	0.15-0.19	Moderate	.37	.37		
	50-80	15-35	1.40-1.65	0.20-2.00	0.14-0.18	Low	.37	.37		
FeA:										
Fluvaquents-----	0-80	---	---	0.06-20.00	0.19-0.25	---	---	---	-	---
FnC2:										
Fredericktown---	0-10	7-18	1.30-1.50	0.60-2.00	0.10-0.14	Low	.24	.43	5	5
	10-25	12-32	1.30-1.55	2.00-6.00	0.09-0.16	Low	.32	.55		
	25-80	5-15	1.30-1.55	2.00-20.00	0.06-0.10	Low	.17	.37		
FnD2:										
Fredericktown---	0-9	7-18	1.30-1.50	0.60-2.00	0.10-0.14	Low	.24	.43	5	5
	9-60	12-32	1.30-1.55	2.00-6.00	0.09-0.16	Low	.32	.55		
	60-80	5-15	1.30-1.55	2.00-20.00	0.06-0.10	Low	.17	.37		
FoB:										
Fredericktown---	0-12	12-22	1.30-1.50	0.60-2.00	0.14-0.18	Low	.32	.37	5	5
	12-25	12-32	1.30-1.55	2.00-6.00	0.09-0.16	Low	.32	.55		
	25-80	5-15	1.30-1.55	2.00-20.00	0.06-0.10	Low	.17	.37		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
FrA:										
Frenchtown------	0-4	15-26	1.20-1.40	0.60-2.00	0.18-0.20	Low	.37	.37	4	6
	4-24	20-32	1.25-1.60	0.60-2.00	0.16-0.18	Low	.37	.43		
	24-45	16-32	1.50-1.75	0.01-0.20	0.08-0.10	Low	.37	.55		
	45-80	15-32	1.35-1.65	0.06-0.60	0.10-0.12	Low	.37	.55		
GaB:										
Gavers----------	0-8	12-25	1.30-1.45	0.60-2.00	0.21-0.24	Low	.43	.43	5	5
	8-24	18-35	1.30-1.55	0.20-0.60	0.18-0.22	Moderate	.37	.37		
	24-78	22-35	1.40-1.60	0.06-0.60	0.10-0.15	Moderate	.37	.43		
	78-80	22-53	1.40-1.60	0.06-0.60	0.08-0.13	Moderate	.37	.55		
GeC:										
Germano---------	0-10	7-15	1.20-1.45	2.00-6.00	0.16-0.18	Low	.24	.28	3	3
	10-26	7-18	1.30-1.60	2.00-6.00	0.07-0.15	Low	.17	.32		
	26-33	4-15	1.20-1.40	2.00-6.00	0.05-0.10	Low	.15	.32		
	33-43	---	---	0.20-2.00	---	---	---	---		
GeD:										
Germano---------	0-4	7-15	1.20-1.45	2.00-6.00	0.16-0.18	Low	.24	.28	3	3
	4-30	7-18	1.30-1.60	2.00-6.00	0.07-0.15	Low	.17	.32		
	30-36	4-15	1.20-1.40	2.00-6.00	0.05-0.10	Low	.15	.32		
	36-46	---	---	0.20-2.00	---	---	---	---		
GnB:										
Gilpin----------	0-9	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	6
	9-22	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	22-26	---	---	0.60-2.00	---	---	---	---		
GnC:										
Gilpin----------	0-3	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	6
	3-25	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	25-35	---	---	0.60-2.00	---	---	---	---		
GnD:										
Gilpin----------	0-10	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	6
	10-15	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	15-30	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	30-32	---	---	0.60-2.00	---	---	---	---		
GoC:										
Gilpin----------	0-7	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	6
	7-20	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	20-28	18-35	1.20-1.50	0.60-2.00	0.08-0.12	Low	.24	.32		
	28-38	---	---	0.60-2.00	---	---	---	---		
Coshocton-------	0-7	15-23	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	7-40	18-35	1.35-1.55	0.20-2.00	0.14-0.20	Moderate	.37	.43		
	40-46	22-45	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.55		
	46-56	22-45	1.45-1.70	0.06-0.60	0.08-0.12	Moderate	.28	.55		
	56-66	---	---	0.06-2.00	---	---	---	---		
GoD:										
Gilpin----------	0-7	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	6
	7-28	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	28-38	---	---	0.60-2.00	---	---	---	---		
Coshocton-------	0-7	15-23	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	7-40	18-35	1.35-1.55	0.20-2.00	0.14-0.20	Moderate	.37	.43		
	40-50	22-45	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.55		
	50-56	22-45	1.45-1.70	0.06-0.60	0.08-0.12	Moderate	.28	.55		
	56-66	---	---	0.06-2.00	---	---	---	---		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
GpC:										
Gilpin----------	0-6	15-27	1.20-1.40	0.60-2.00	0.12-0.18	Low	.32	.32	3	6
	6-30	18-35	1.20-1.50	0.60-2.00	0.12-0.16	Low	.24	.28		
	30-40	---	---	0.60-2.00	---	---	---	---		
Coshocton-------	0-6	15-23	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	6-28	18-35	1.35-1.55	0.20-2.00	0.14-0.20	Moderate	.37	.43		
	28-42	22-45	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.55		
	42-64	22-45	1.45-1.70	0.06-0.60	0.08-0.12	Moderate	.28	.55		
	64-66	---	---	0.06-2.00	---	---	---	---		
Urban land------	---	---	---	---	---	---	---	---	-	---
GrB:										
Glenford--------	0-8	15-27	1.30-1.45	0.60-2.00	0.16-0.20	Low	.37	.37	5	6
	8-30	18-35	1.45-1.65	0.20-2.00	0.14-0.18	Moderate	.43	.43		
	30-60	18-35	1.45-1.65	0.20-0.60	0.13-0.17	Low	.43	.43		
	60-80	15-32	1.40-1.60	0.20-2.00	0.12-0.17	Low	.37	.37		
GrC:										
Glenford--------	0-7	15-27	1.30-1.45	0.60-2.00	0.16-0.20	Low	.37	.37	5	6
	7-26	18-35	1.45-1.65	0.20-2.00	0.14-0.18	Moderate	.43	.43		
	26-60	18-35	1.45-1.65	0.20-0.60	0.13-0.17	Low	.43	.43		
	60-80	15-32	1.40-1.60	0.20-2.00	0.12-0.17	Low	.37	.37		
GuC:										
Guernsey--------	0-8	13-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.43	.49	5	6
	8-16	27-55	1.40-1.60	0.06-0.60	0.10-0.15	High	.32	.43		
	16-52	35-60	1.40-1.60	0.06-0.60	0.10-0.15	High	.32	.43		
	52-65	35-60	1.40-1.60	0.06-0.60	0.06-0.10	High	.32	.49		
	65-75	---	---	0.00-0.20	---	---	---	---		
GuC2:										
Guernsey--------	0-8	13-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.43	.49	5	6
	8-16	27-55	1.40-1.60	0.06-0.60	0.10-0.15	High	.32	.43		
	16-52	35-60	1.40-1.60	0.06-0.60	0.10-0.15	High	.32	.43		
	52-65	35-60	1.40-1.60	0.06-0.60	0.06-0.10	High	.32	.49		
	65-75	---	---	0.00-0.20	---	---	---	---		
GuD:										
Guernsey--------	0-8	13-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.43	.49	5	6
	8-13	27-55	1.40-1.60	0.06-0.60	0.10-0.15	High	.32	.43		
	13-50	35-60	1.40-1.60	0.06-0.60	0.10-0.15	High	.32	.43		
	50-68	35-60	1.40-1.60	0.06-0.60	0.06-0.10	High	.32	.49		
	68-78	---	---	0.00-0.20	---	---	---	---		
HeB:										
Hazleton--------	0-8	7-18	1.20-1.40	2.00-6.00	0.10-0.14	Low	.17	.17	3	5
	8-36	5-18	1.20-1.40	2.00-20.00	0.08-0.12	Low	.15	.20		
	36-44	5-15	1.20-1.40	2.00-20.00	0.06-0.12	Low	.15	.20		
	44-46	---	---	0.20-2.00	---	---	---	---		
HeC:										
Hazleton--------	0-7	7-18	1.20-1.40	2.00-6.00	0.10-0.14	Low	.17	.17	3	5
	7-40	5-18	1.20-1.40	2.00-20.00	0.08-0.12	Low	.15	.20		
	40-45	5-15	1.20-1.40	2.00-20.00	0.06-0.12	Low	.15	.20		
	45-47	---	---	0.20-2.00	---	---	---	---		
HeD:										
Hazleton--------	0-3	7-18	1.20-1.40	2.00-6.00	0.10-0.14	Low	.17	.17	3	5
	3-45	5-18	1.20-1.40	2.00-20.00	0.08-0.12	Low	.15	.20		
	45-58	5-15	1.20-1.40	2.00-20.00	0.06-0.12	Low	.15	.20		
	58-60	---	---	0.20-2.00	---	---	---	---		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
HeE:										
Hazleton--------	0-7	7-18	1.20-1.40	2.00-6.00	0.10-0.14	Low	.17	.17	3	5
	7-42	5-18	1.20-1.40	2.00-20.00	0.08-0.12	Low	.15	.20		
	42-48	5-15	1.20-1.40	2.00-20.00	0.06-0.12	Low	.15	.20		
	48-50	---	---	0.20-2.00	---	---	---	---		
HfF:										
Hazleton--------	0-3	7-18	1.20-1.40	2.00-6.00	0.10-0.14	Low	.17	.17	3	5
	3-36	5-18	1.20-1.40	2.00-20.00	0.08-0.12	Low	.15	.20		
	36-44	5-15	1.20-1.40	2.00-20.00	0.06-0.12	Low	.15	.20		
	44-47	---	---	0.20-2.00	---	---	---	---		
Rock outcrop----	---	---	---	---	---	---	---	---	-	---
HgF:										
Hazleton--------	0-2	---	0.13-0.23	2.00-6.00	0.35-0.45	Low	---	---	3	5
	2-5	7-18	1.20-1.40	2.00-6.00	0.10-0.14	Low	.17	.17		
	5-50	5-18	1.20-1.40	2.00-20.00	0.08-0.12	Low	.15	.20		
	50-67	5-15	1.20-1.40	2.00-20.00	0.06-0.12	Low	.15	.20		
	67-69	---	---	0.20-2.00	---	---	---	---		
Westmoreland----	0-4	12-22	1.20-1.40	2.00-6.00	0.10-0.14	Low	.32	.37	3	5
	4-44	20-35	1.20-1.50	0.60-2.00	0.12-0.18	Low	.28	.32		
	44-52	18-35	1.20-1.50	0.60-2.00	0.06-0.10	Low	.17	.20		
	52-54	---	---	0.20-2.00	---	---	---	---		
HkA:										
Holly----------	0-4	15-27	1.20-1.40	0.60-2.00	0.20-0.24	Low	.28	.28	5	6
	4-20	16-32	1.20-1.50	0.20-2.00	0.17-0.21	Low	.28	.32		
	20-75	10-27	1.20-1.40	0.60-6.00	0.07-0.18	Low	.28	.37		
	75-77	---	---	0.20-2.00	---	---	---	---		
HlB:										
Homewood--------	0-12	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.37	4	5
	12-22	15-32	1.30-1.50	0.60-2.00	0.15-0.20	Low	.37	.49		
	22-42	15-35	1.60-1.85	0.06-0.20	0.06-0.10	Low	.37	.49		
	42-62	20-35	1.40-1.60	0.20-0.60	0.06-0.10	Low	.37	.49		
	62-66	10-32	1.20-1.40	0.20-0.60	0.06-0.10	Low	.37	.49		
	66-76	---	---	0.20-2.00	---	---	---	---		
HmA:										
Homeworth-------	0-9	10-20	1.30-1.45	0.60-2.00	0.18-0.22	Low	.37	.37	3	5
	9-43	12-27	1.45-1.70	0.60-2.00	0.12-0.16	Low	.37	.43		
	43-80	35-55	1.60-1.80	0.01-0.20	0.06-0.10	Moderate	.37	.37		
HmB:										
Homeworth-------	0-13	10-20	1.30-1.45	0.60-2.00	0.18-0.22	Low	.37	.37	3	5
	13-38	12-27	1.45-1.70	0.60-2.00	0.12-0.16	Low	.37	.43		
	38-80	35-55	1.60-1.80	0.01-0.20	0.06-0.10	Moderate	.37	.37		
HoA:										
Homeworth-------	0-12	10-20	1.30-1.45	0.60-2.00	0.18-0.22	Low	.37	.37	3	5
	12-40	12-27	1.45-1.70	0.60-2.00	0.12-0.16	Low	.37	.43		
	40-80	35-55	1.60-1.80	0.01-0.20	0.06-0.10	Moderate	.37	.37		
HoB:										
Homeworth-------	0-13	10-20	1.30-1.45	0.60-2.00	0.18-0.22	Low	.37	.37	3	5
	13-38	12-27	1.45-1.70	0.60-2.00	0.12-0.16	Low	.37	.43		
	38-80	35-55	1.60-1.80	0.01-0.20	0.06-0.10	Moderate	.37	.37		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
JwA:										
Jimtown---------	0-8	10-22	1.30-1.50	0.60-2.00	0.18-0.22	Low	.32	.37	5	5
	8-16	15-32	1.25-1.60	0.60-2.00	0.10-0.18	Low	.32	.37		
	16-32	15-32	1.25-1.60	0.60-2.00	0.10-0.18	Low	.32	.37		
	32-39	6-25	1.25-1.60	0.60-6.00	0.07-0.11	Low	.17	.24		
	39-80	4-20	1.25-1.65	2.00-6.00	0.04-0.10	Low	.17	.24		
JwB:										
Jimtown---------	0-11	10-22	1.30-1.50	0.60-2.00	0.18-0.22	Low	.32	.37	5	5
	11-42	15-32	1.25-1.60	0.60-2.00	0.10-0.18	Low	.32	.37		
	42-50	6-25	1.25-1.60	0.60-6.00	0.07-0.11	Low	.17	.24		
	50-80	4-20	1.25-1.65	2.00-6.00	0.04-0.10	Low	.17	.24		
KeB:										
Keene----------	0-11	12-25	1.30-1.45	0.60-2.00	0.21-0.24	Low	.43	.43	4	5
	11-25	18-35	1.30-1.55	0.20-2.00	0.18-0.22	Moderate	.37	.37		
	25-66	27-53	1.40-1.60	0.06-0.60	0.08-0.13	Moderate	.37	.55		
	66-76	---	---	0.00-0.20	---	---	---	---		
KnB:										
Kensington------	0-10	12-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.43	4	6
	10-16	15-35	1.40-1.60	0.60-2.00	0.11-0.22	Moderate	.37	.49		
	16-33	15-35	1.40-1.60	0.60-2.00	0.11-0.22	Moderate	.37	.49		
	33-42	15-35	1.40-1.60	0.60-2.00	0.06-0.20	Moderate	.37	.49		
	42-50	---	---	0.06-2.00	---	---	---	---		
KnC:										
Kensington------	0-11	12-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.43	4	6
	11-17	15-35	1.40-1.60	0.60-2.00	0.11-0.22	Moderate	.37	.49		
	17-33	15-35	1.40-1.60	0.60-2.00	0.11-0.22	Moderate	.37	.49		
	33-52	15-35	1.40-1.60	0.60-2.00	0.06-0.20	Moderate	.37	.49		
	52-58	10-20	1.30-1.50	2.00-6.00	0.03-0.11	Low	.10	.64		
	58-71	---	---	0.06-2.00	---	---	---	---		
	71-73	---	---	0.06-2.00	---	---	---	---		
KnD:										
Kensington------	0-10	12-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.43	4	6
	10-16	15-35	1.40-1.60	0.60-2.00	0.11-0.22	Moderate	.37	.49		
	16-46	15-35	1.40-1.60	0.60-2.00	0.11-0.22	Moderate	.37	.49		
	46-60	10-20	1.30-1.50	2.00-6.00	0.03-0.11	Low	.10	.64		
	60-80	---	---	0.06-2.00	---	---	---	---		
LbA:										
Lobdell---------	0-10	15-27	1.20-1.40	0.60-2.00	0.20-0.24	Low	.37	.37	5	6
	10-42	18-32	1.25-1.60	0.60-2.00	0.17-0.22	Low	.32	.37		
	42-76	15-32	1.20-1.60	0.60-6.00	0.12-0.18	Low	.32	.37		
LnA:										
Lorain----------	0-7	20-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	.32	.32	5	6
	7-54	32-55	1.35-1.70	0.01-0.20	0.09-0.13	High	.32	.32		
	54-62	30-55	1.45-1.75	0.01-0.20	0.10-0.14	High	.32	.32		
McB:										
Mechanicsburg---	0-9	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.43	4	6
	9-22	18-35	1.40-1.60	0.60-2.00	0.11-0.22	Moderate	.37	.49		
	22-45	15-27	1.30-1.50	2.00-6.00	0.06-0.20	Low	.37	.64		
	45-50	10-20	1.30-1.50	2.00-6.00	0.03-0.11	Low	.10	.64		
	50-67	---	---	0.20-2.00	---	---	---	---		
	67-69	---	---	0.20-2.00	---	---	---	---		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
McC:										
Mechanicsburg---	0-8	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.43	4	6
	8-30	18-35	1.40-1.60	0.60-2.00	0.11-0.22	Moderate	.37	.49		
	30-45	15-27	1.30-1.50	2.00-6.00	0.06-0.20	Low	.37	.64		
	45-50	10-20	1.30-1.50	2.00-6.00	0.03-0.11	Low	.10	.64		
	50-60	---	---	0.20-2.00	---	---	---	---		
MnB:										
Morristown------	0-8	27-35	1.40-1.65	0.20-0.60	0.13-0.18	Moderate	.43	.49	5	6
	8-80	18-35	1.65-1.90	0.20-0.60	0.03-0.11	Moderate	.32	.64		
MnD:										
Morristown------	0-5	27-35	1.40-1.65	0.20-0.60	0.13-0.18	Moderate	.43	.49	5	6
	5-80	18-35	1.65-1.90	0.20-0.60	0.03-0.11	Moderate	.32	.64		
MoB:										
Morristown------	0-4	27-35	1.50-1.75	0.20-0.60	0.07-0.14	Moderate	.32	.64	5	6
	4-80	18-35	1.65-1.90	0.20-0.60	0.03-0.11	Moderate	.32	.64		
MoD:										
Morristown------	0-3	27-35	1.50-1.75	0.20-0.60	0.07-0.14	Moderate	.32	.64	5	6
	3-80	18-35	1.65-1.90	0.20-0.60	0.03-0.11	Moderate	.32	.64		
OdA:										
Olmsted---------	0-8	10-20	1.40-1.60	0.60-2.00	0.16-0.20	Low	.24	.28	5	5
	8-21	10-27	1.25-1.60	0.60-2.00	0.14-0.18	Low	.24	.28		
	21-34	8-32	1.25-1.60	0.60-2.00	0.10-0.14	Low	.24	.37		
	34-60	3-30	1.25-1.60	2.00-6.00	0.06-0.14	Low	.24	.37		
Valley----------	0-7	20-27	1.35-1.55	0.06-0.20	0.17-0.21	Moderate	.28	.28	2	6
	7-41	20-60	1.40-1.75	0.01-0.20	0.13-0.17	Moderate	.32	.32		
	41-48	30-60	1.40-1.70	0.01-0.20	0.12-0.17	Moderate	.32	.32		
	48-80	20-40	1.55-1.75	0.06-0.20	0.07-0.10	Low	.32	.43		
OmB:										
Omulga----------	0-9	12-20	1.25-1.40	0.60-2.00	0.22-0.24	Low	.43	.43	4	5
	9-34	20-35	1.30-1.45	0.60-2.00	0.18-0.22	Moderate	.43	.43		
	34-51	18-32	1.60-1.80	0.06-0.20	0.06-0.08	Moderate	.43	.49		
	51-80	15-45	1.50-1.60	0.20-0.60	0.10-0.18	Moderate	.32	.37		
OmC:										
Omulga----------	0-9	12-20	1.25-1.40	0.60-2.00	0.22-0.24	Low	.43	.43	4	5
	9-22	20-35	1.30-1.45	0.60-2.00	0.18-0.22	Moderate	.43	.43		
	22-38	18-32	1.60-1.80	0.06-0.20	0.06-0.08	Moderate	.43	.49		
	38-80	15-45	1.50-1.60	0.20-0.60	0.10-0.18	Moderate	.32	.37		
OrA:										
Orrville--------	0-10	12-27	1.25-1.45	0.60-2.00	0.18-0.22	Low	.37	.37	5	6
	10-32	18-32	1.30-1.50	0.60-2.00	0.15-0.19	Low	.37	.43		
	32-50	10-27	1.20-1.40	0.60-6.00	0.08-0.15	Low	.37	.43		
	50-80	10-25	1.20-1.40	0.60-20.00	0.08-0.15	Low	.37	.49		
Pg:										
Pits----------	---	---	---	---	---	---	---	---	-	---
RaB:										
Rainsboro-------	0-8	12-20	1.40-1.55	0.60-2.00	0.22-0.24	Low	.43	.43	4	5
	8-26	20-35	1.40-1.60	0.60-2.00	0.18-0.22	Moderate	.43	.43		
	26-41	20-35	1.70-1.90	0.06-0.20	0.08-0.12	Moderate	.43	.43		
	41-80	15-35	1.55-1.75	0.60-6.00	0.12-0.14	Low	.28	.49		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Erosion factors Kw	Kf	T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in					
RaC2:										
Rainsboro-------	0-7	12-20	1.40-1.55	0.60-2.00	0.22-0.24	Low	.43	.43	4	5
	7-25	20-35	1.40-1.60	0.60-2.00	0.18-0.22	Moderate	.43	.43		
	25-48	20-35	1.70-1.90	0.06-0.20	0.08-0.12	Moderate	.43	.43		
	48-80	15-35	1.55-1.75	0.60-6.00	0.12-0.14	Low	.28	.49		
RbC:										
Rainsboro-------	0-10	12-20	1.40-1.55	0.60-2.00	0.22-0.24	Low	.43	.55	4	5
	10-21	20-35	1.40-1.60	0.60-2.00	0.18-0.22	Moderate	.43	.43		
	21-47	20-35	1.70-1.90	0.06-0.20	0.08-0.12	Moderate	.43	.43		
	47-80	15-35	1.55-1.75	0.60-6.00	0.12-0.14	Low	.28	.49		
ReA:										
Ravenna---------	0-10	15-24	1.30-1.50	0.60-2.00	0.17-0.22	Low	.37	.43	4	5
	10-24	18-32	1.45-1.75	0.60-2.00	0.14-0.19	Low	.37	.43		
	24-40	16-27	1.60-1.90	0.06-0.20	0.06-0.10	Low	.37	.55		
	40-80	15-27	1.55-1.70	0.06-0.60	0.06-0.10	Low	.37	.55		
ReB:										
Ravenna---------	0-13	15-24	1.30-1.50	0.60-2.00	0.17-0.22	Low	.37	.43	4	5
	13-25	18-32	1.45-1.75	0.60-2.00	0.14-0.19	Low	.37	.43		
	25-42	16-27	1.60-1.90	0.06-0.20	0.06-0.10	Low	.37	.55		
	42-80	15-27	1.55-1.70	0.06-0.60	0.06-0.10	Low	.37	.55		
RhD:										
Richland--------	0-8	15-27	1.30-1.40	0.60-2.00	0.14-0.20	Low	.37	.43	5	6
	8-55	18-35	1.40-1.60	0.60-2.00	0.10-0.16	Moderate	.28	.43		
	55-80	18-35	1.40-1.60	0.60-2.00	0.07-0.11	Moderate	.28	.55		
RhE:										
Richland--------	0-9	15-27	1.30-1.40	0.60-2.00	0.14-0.20	Low	.37	.43	5	6
	9-36	18-35	1.40-1.60	0.60-2.00	0.10-0.16	Moderate	.28	.43		
	36-80	18-35	1.40-1.60	0.60-2.00	0.07-0.11	Moderate	.28	.55		
RsB:										
Rittman---------	0-10	12-27	1.30-1.50	0.60-2.00	0.18-0.24	Low	.43	.43	4	6
	10-21	20-35	1.45-1.70	0.60-2.00	0.14-0.18	Moderate	.43	.49		
	21-44	27-35	1.60-1.85	0.06-0.20	0.06-0.10	Low	.43	.55		
	44-80	27-35	1.55-1.85	0.06-0.60	0.06-0.10	Low	.43	.55		
RsC:										
Rittman---------	0-8	12-27	1.30-1.50	0.60-2.00	0.18-0.24	Low	.43	.43	4	6
	8-24	20-35	1.45-1.70	0.60-2.00	0.14-0.18	Moderate	.43	.49		
	24-38	27-35	1.60-1.85	0.06-0.20	0.06-0.10	Low	.43	.55		
	38-80	27-35	1.55-1.85	0.06-0.60	0.06-0.10	Low	.43	.55		
RsD2:										
Rittman---------	0-4	12-27	1.30-1.50	0.60-2.00	0.18-0.24	Low	.43	.43	4	6
	4-20	20-35	1.45-1.70	0.60-2.00	0.14-0.18	Moderate	.43	.49		
	20-45	27-35	1.60-1.85	0.06-0.20	0.06-0.10	Low	.43	.55		
	45-80	27-35	1.55-1.85	0.06-0.60	0.06-0.10	Low	.43	.55		
TeB:										
Teegarden-------	0-11	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.43	5	6
	11-22	15-32	1.25-1.60	0.60-2.00	0.09-0.20	Moderate	.32	.55		
	22-32	20-32	1.55-1.85	0.06-0.20	0.07-0.14	Moderate	.28	.55		
	32-65	15-45	1.30-1.60	0.20-0.60	0.06-0.11	Moderate	.32	.64		
	65-80	15-45	1.30-1.60	0.20-0.60	0.06-0.11	Moderate	.32	.64		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
TeC:										
Teegarden-------	0-10	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.43	5	6
	10-25	15-32	1.25-1.60	0.60-2.00	0.09-0.20	Moderate	.32	.55		
	25-34	20-32	1.55-1.85	0.06-0.20	0.07-0.14	Moderate	.28	.55		
	34-52	15-45	1.30-1.60	0.20-0.60	0.06-0.11	Moderate	.32	.64		
	52-65	15-45	1.30-1.60	0.20-0.60	0.06-0.11	Moderate	.32	.64		
	65-80	---	---	0.20-2.00	---	---	---	---		
TeC2:										
Teegarden-------	0-10	15-27	1.30-1.50	0.60-2.00	0.19-0.24	Low	.37	.43	5	6
	10-25	15-32	1.25-1.60	0.60-2.00	0.09-0.20	Moderate	.32	.55		
	25-34	20-32	1.55-1.85	0.06-0.20	0.07-0.14	Moderate	.28	.55		
	34-52	15-45	1.30-1.60	0.20-0.60	0.06-0.11	Moderate	.32	.64		
	52-65	15-45	1.30-1.60	0.20-0.60	0.06-0.11	Moderate	.32	.64		
	65-80	---	---	0.20-2.00	---	---	---	---		
ToA:										
Tioga----------	0-9	8-18	1.15-1.40	0.60-6.00	0.15-0.21	Low	.37	.37	5	5
	9-40	7-18	1.15-1.45	0.60-6.00	0.07-0.20	Low	.28	.32		
	40-80	3-15	1.25-1.55	0.60-20.00	0.02-0.20	Low	.28	.32		
Ua:										
Udorthents------	0-4	7-35	1.20-1.80	0.06-0.20	0.06-0.15	Low	.24	---	5	5
	4-80	7-35	1.30-1.90	0.06-6.00	0.04-0.13	Low	.32	---		
Ub:										
Udorthents------	0-24	5-27	1.20-1.80	0.06-0.60	0.03-0.15	Low	.24	---	3	5
	24-80	0-0	---	0.06-6.00	0.00-0.00	Low	---	---		
Uc:										
Udorthents------	0-4	7-35	1.20-1.80	0.06-0.20	0.06-0.15	Low	.24	---	5	3
	4-80	7-35	1.30-1.90	0.06-6.00	0.04-0.13	Low	.32	---		
Pits----------	---	---	---	---	---	---	---	---	-	---
UkC2:										
Upshur----------	0-4	27-35	1.20-1.50	0.20-0.60	0.12-0.16	Moderate	.37	.37	5	6
	4-44	40-55	1.30-1.60	0.06-0.20	0.10-0.14	High	.32	.32		
	44-54	---	---	0.00-0.06	---	---	---	---		
Berks----------	0-7	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	7-20	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	20-24	7-27	1.20-1.60	2.00-6.00	0.04-0.10	Low	.17	.24		
	24-34	---	---	0.00-0.20	---	---	---	---		
UkD2:										
Upshur----------	0-8	27-35	1.20-1.50	0.20-0.60	0.12-0.16	Moderate	.37	.37	5	6
	8-42	40-55	1.30-1.60	0.06-0.20	0.10-0.14	High	.32	.32		
	42-72	27-55	1.30-1.60	0.06-0.20	0.08-0.12	Moderate	.32	.32		
	72-80	---	---	0.00-0.06	---	---	---	---		
Berks----------	0-5	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	5-22	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	22-24	---	---	0.00-0.20	---	---	---	---		
UkE2:										
Upshur----------	0-3	27-35	1.20-1.50	0.20-0.60	0.12-0.16	Moderate	.37	.37	5	6
	3-46	40-55	1.30-1.60	0.06-0.20	0.10-0.14	High	.32	.32		
	46-50	27-55	1.30-1.60	0.06-0.20	0.08-0.12	Moderate	.32	.32		
	50-60	---	---	0.00-0.06	---	---	---	---		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
Berks----------	0-4	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	4-22	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	22-24	---	---	0.00-0.20	---	---	---	---		
Ur:										
Urban land------	---	---	---	---	---	---	---	---	-	---
UtB:										
Urban land------	---	---	---	---	---	---	---	---	-	---
Canfield--------	0-6	12-22	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	6-28	18-32	1.45-1.70	0.60-2.00	0.14-0.19	Low	.37	.49		
	28-48	15-27	1.60-1.90	0.06-0.20	0.07-0.10	Low	.37	.49		
	48-80	12-27	1.55-1.85	0.06-0.20	0.07-0.10	Low	.37	.49		
UtC:										
Urban land------	---	---	---	---	---	---	---	---	-	---
Canfield--------	0-6	12-22	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	6-24	18-32	1.45-1.70	0.60-2.00	0.14-0.19	Low	.37	.49		
	24-45	15-27	1.60-1.90	0.06-0.20	0.07-0.10	Low	.37	.49		
	45-80	12-27	1.55-1.85	0.06-0.20	0.07-0.10	Low	.37	.49		
UvB:										
Urban land------	---	---	---	---	---	---	---	---	-	---
Chili----------	0-8	12-20	1.30-1.50	0.60-2.00	0.14-0.18	Low	.32	.37	4	5
	8-20	18-32	1.30-1.55	2.00-6.00	0.09-0.16	Low	.32	.55		
	20-55	7-32	1.30-1.55	2.00-6.00	0.06-0.16	Low	.17	.37		
	55-80	1-10	1.25-1.50	6.00-20.00	0.02-0.08	Low	.10	.32		
VaA:										
Valley----------	0-7	20-27	1.35-1.55	0.06-0.20	0.17-0.21	Moderate	.28	.28	2	6
	7-41	20-60	1.40-1.75	0.01-0.20	0.13-0.17	Moderate	.32	.32		
	41-48	30-60	1.40-1.70	0.01-0.20	0.12-0.17	Moderate	.32	.32		
	48-80	20-40	1.55-1.75	0.06-0.20	0.07-0.10	Low	.32	.43		
VbA:										
Valley----------	0-11	27-34	1.35-1.55	0.06-0.20	0.17-0.21	Moderate	.28	.28	2	6
	11-41	20-60	1.40-1.75	0.01-0.20	0.13-0.17	Moderate	.32	.32		
	41-48	30-60	1.40-1.70	0.01-0.20	0.12-0.17	Moderate	.32	.32		
	48-80	20-40	1.55-1.75	0.06-0.20	0.07-0.10	Low	.32	.43		
VcA:										
Valley----------	0-7	20-27	1.35-1.55	0.06-0.20	0.17-0.21	Moderate	.28	.28	2	6
	7-41	20-60	1.40-1.75	0.01-0.20	0.13-0.17	Moderate	.32	.32		
	41-48	30-60	1.40-1.70	0.01-0.20	0.12-0.17	Moderate	.32	.32		
	48-80	20-40	1.55-1.75	0.06-0.20	0.07-0.10	Low	.32	.43		
Lorain----------	0-7	20-35	1.30-1.50	0.20-0.60	0.15-0.19	Moderate	.32	.32	5	6
	7-54	32-55	1.35-1.70	0.01-0.20	0.09-0.13	High	.32	.32		
	54-62	30-55	1.45-1.75	0.01-0.20	0.10-0.14	High	.32	.32		
VnB:										
Vandergrift-----	0-10	15-27	1.30-1.40	0.60-2.00	0.16-0.20	Moderate	.28	.28	3	6
	10-46	27-50	1.50-1.70	0.06-0.20	0.10-0.16	High	.28	.32		
	46-56	20-50	1.40-1.60	0.06-0.60	0.04-0.14	High	.28	.64		
	56-58	---	---	0.00-0.06	---	---	---	---		
VnC:										
Vandergrift-----	0-8	15-27	1.30-1.40	0.60-2.00	0.16-0.20	Moderate	.28	.28	3	6
	8-52	27-50	1.50-1.70	0.06-0.20	0.10-0.16	High	.28	.32		
	52-76	20-50	1.40-1.60	0.06-0.60	0.04-0.14	High	.28	.64		
	76-80	---	---	0.00-0.06	---	---	---	---		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
W:										
Water----------	---	---	---	---	---	---	---	---	-	---
WaA:										
Wadsworth-------	0-10	13-27	1.30-1.50	0.60-2.00	0.17-0.22	Low	.43	.43	4	6
	10-24	22-35	1.45-1.70	0.20-2.00	0.14-0.18	Moderate	.43	.43		
	24-45	22-32	1.60-1.85	0.01-0.20	0.06-0.10	Low	.43	.55		
	45-80	15-32	1.55-1.85	0.06-0.60	0.06-0.12	Low	.43	.55		
WaB:										
Wadsworth-------	0-8	13-27	1.30-1.50	0.60-2.00	0.17-0.22	Low	.43	.43	4	6
	8-27	22-35	1.45-1.70	0.20-2.00	0.14-0.18	Moderate	.43	.43		
	27-46	22-32	1.60-1.85	0.01-0.20	0.06-0.10	Low	.43	.55		
	46-80	15-32	1.55-1.85	0.06-0.60	0.06-0.12	Low	.43	.55		
WkE:										
Westmoreland----	0-3	12-22	1.20-1.40	0.60-2.00	0.16-0.20	Low	.37	.37	3	5
	3-36	20-35	1.20-1.50	0.60-2.00	0.12-0.18	Low	.28	.32		
	36-50	18-35	1.20-1.50	0.60-2.00	0.06-0.10	Low	.17	.20		
	50-60	---	---	0.20-2.00	---	---	---	---		
Berks----------	0-4	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	4-20	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	20-24	7-27	1.20-1.60	2.00-6.00	0.04-0.10	Low	.17	.24		
	24-26	---	---	0.00-0.20	---	---	---	---		
WkF:										
Westmoreland----	0-1	---	0.13-0.23	2.00-6.00	0.35-0.45	Low	---	---	3	5
	1-4	12-22	1.20-1.40	0.60-2.00	0.16-0.20	Low	.37	.37		
	4-38	20-35	1.20-1.50	0.60-2.00	0.12-0.18	Low	.28	.32		
	38-80	18-35	1.20-1.50	0.60-2.00	0.06-0.10	Low	.17	.20		
Berks----------	0-3	12-23	1.20-1.50	0.60-6.00	0.08-0.12	Low	.17	.32	3	6
	3-22	7-27	1.20-1.60	0.60-6.00	0.04-0.10	Low	.17	.24		
	22-32	---	---	0.00-0.20	---	---	---	---		
WmC:										
Westmoreland----	0-6	12-22	1.20-1.40	0.60-2.00	0.16-0.20	Low	.37	.37	3	5
	6-32	20-35	1.20-1.50	0.60-2.00	0.12-0.18	Low	.28	.32		
	32-60	18-35	1.20-1.50	0.60-2.00	0.06-0.10	Low	.17	.20		
	60-70	---	---	0.20-2.00	---	---	---	---		
Coshocton-------	0-8	15-23	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	8-31	18-35	1.35-1.55	0.20-2.00	0.14-0.20	Moderate	.37	.43		
	31-45	22-45	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.55		
	45-66	22-45	1.45-1.70	0.06-0.60	0.08-0.12	Moderate	.28	.55		
	66-76	---	---	0.06-2.00	---	---	---	---		
WmD:										
Westmoreland----	0-5	12-22	1.20-1.40	0.60-2.00	0.16-0.20	Low	.37	.37	3	5
	5-37	20-35	1.20-1.50	0.60-2.00	0.12-0.18	Low	.28	.32		
	37-65	18-35	1.20-1.50	0.60-2.00	0.06-0.10	Low	.17	.20		
	65-75	---	---	0.20-2.00	---	---	---	---		
Coshocton-------	0-3	15-23	1.30-1.50	0.60-2.00	0.18-0.23	Low	.37	.43	4	5
	3-14	18-35	1.35-1.55	0.20-2.00	0.14-0.20	Moderate	.37	.43		
	14-38	22-45	1.40-1.70	0.06-0.60	0.10-0.17	Moderate	.37	.55		
	38-72	22-45	1.45-1.70	0.06-0.60	0.08-0.12	Moderate	.28	.55		
	72-80	---	---	0.06-2.00	---	---	---	---		

TABLE 29.--PHYSICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Shrink- swell potential	Erosion factors Kw	Kf	T	Wind erodi- bility group
	In	Pct	g/cc	In/hr	In/in					
WoA:										
Wick	0-5	12-25	1.20-1.60	0.60-2.00	0.18-0.20	Low	.43	.43	5	5
	5-34	20-35	1.30-1.60	0.20-2.00	0.14-0.20	Low	.43	.43		
	34-80	20-45	1.30-1.70	0.20-2.00	0.14-0.20	Moderate	.43	.43		
ZeA:										
Zepernick	0-10	12-25	1.20-1.40	0.60-2.00	0.15-0.23	Low	.37	.37	5	6
	10-50	18-35	1.20-1.45	0.20-2.00	0.18-0.23	Moderate	.32	.43		
	50-80	8-40	1.30-1.50	0.20-2.00	0.15-0.22	Moderate	.32	.43		

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS

(Absence of an entry indicates that data were not estimated. See text on page 244 for additional information.)

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
AmF:					
Amanda----------	0-5	4.5-7.3	1.0-3.0	10-20	0
	5-32	4.5-5.5	0.3-1.0	10-20	0
	32-70	4.5-7.8	0.1-0.5	10-20	0-6
	70-80	6.6-8.4	0.1-0.5	10-20	0-10
BkB:					
Berks----------	0-10	3.5-6.5	2.0-4.0	5.0-15	0
	10-36	3.5-6.5	0.0-0.5	5.0-10	0
	36-38	---	---	---	---
BkC:					
Berks----------	0-7	3.5-6.5	2.0-4.0	5.0-15	0
	7-23	3.5-6.5	0.0-0.5	5.0-10	0
	23-25	---	---	---	---
BkD:					
Berks----------	0-7	3.5-6.5	2.0-4.0	5.0-15	0
	7-24	3.5-6.5	0.0-0.5	5.0-10	0
	24-26	---	---	---	---
BkE:					
Berks----------	0-1	4.5-7.3	70-99	150-230	0
	1-8	3.5-6.5	2.0-4.0	5.0-15	0
	8-22	3.5-6.5	0.0-0.5	5.0-10	0
	22-24	---	---	---	---
BmB:					
Berks----------	0-6	3.5-6.5	2.0-4.0	5.0-15	0
	6-22	3.5-6.5	0.0-0.5	5.0-10	0
	22-24	---	---	---	---
Urban land------	---	---	---	---	---
BmC:					
Berks----------	0-6	3.5-6.5	2.0-4.0	5.0-15	0
	6-22	3.5-6.5	0.0-0.5	5.0-10	0
	22-24	---	---	---	---
Urban land------	---	---	---	---	---
BmD:					
Berks----------	0-6	3.5-6.5	2.0-4.0	5.0-15	0
	6-23	3.5-6.5	0.0-0.5	5.0-10	0
	23-25	---	---	---	---
Urban land------	---	---	---	---	---
BpF:					
Bethesda--------	0-2	3.5-5.5	0.0-0.5	7.0-16	0
	2-80	3.5-5.5	0.0-0.3	7.0-20	0
BsC2:					
Bogart----------	0-8	4.5-7.3	2.0-3.0	8.0-15	0
	8-34	4.5-6.5	0.5-1.0	8.0-16	0
	34-44	4.5-6.5	0.5-1.0	8.0-16	0
	44-52	4.5-6.5	0.1-0.3	8.0-15	0
	52-80	5.1-7.8	0.1-0.3	5.0-10	0-6
BtA:					
Bogart----------	0-11	4.5-7.3	2.0-3.0	8.0-15	0
	11-33	4.5-6.5	0.5-1.0	8.0-16	0
	33-49	4.5-6.5	0.2-0.5	8.0-15	0
	49-80	5.1-7.8	0.1-0.3	5.0-10	0-6

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
BtB:					
Bogart----------	0-7	4.5-7.3	2.0-3.0	8.0-15	0
	7-28	4.5-6.5	0.5-1.0	8.0-16	0
	28-42	4.5-6.5	0.2-0.5	8.0-15	0
	42-60	5.1-7.8	0.1-0.3	5.0-10	0-6
BtC:					
Bogart----------	0-9	4.5-7.3	2.0-3.0	8.0-15	0
	9-43	4.5-6.5	0.5-1.0	8.0-16	0
	43-51	4.5-6.5	0.1-0.3	8.0-15	0
	51-80	5.1-7.8	0.1-0.3	5.0-10	0-6
CaA:					
Calcutta--------	0-1	4.5-7.3	70-99	150-230	0
	1-9	3.5-7.3	2.0-4.0	8.0-15	0
	9-27	3.5-6.0	0.5-1.0	11-18	0
	27-46	3.5-6.0	0.2-0.5	5.0-15	0
	46-80	3.5-6.0	0.2-0.5	10-17	0
CcB:					
Canfield--------	0-11	4.5-7.3	1.0-3.0	10-18	0
	11-22	4.5-6.5	0.5-1.0	10-16	0
	22-45	4.5-7.3	0.2-0.5	10-16	0
	45-80	5.1-7.8	0.1-0.3	6.1-14	0-6
CcC:					
Canfield--------	0-10	4.5-7.3	1.0-3.0	10-18	0
	10-25	4.5-6.5	0.5-1.0	10-16	0
	25-40	4.5-7.3	0.2-0.5	10-16	0
	40-80	5.1-7.8	0.1-0.3	6.1-14	0-6
CcD:					
Canfield--------	0-8	4.5-7.3	1.0-3.0	10-18	0
	8-21	4.5-5.5	0.5-1.0	10-16	0
	21-40	4.5-7.3	0.2-0.5	10-16	0
	40-80	5.1-7.8	0.1-0.3	6.1-14	0-6
CcE:					
Canfield--------	0-7	4.5-7.3	1.0-3.0	10-18	0
	7-26	4.5-5.5	0.5-1.0	10-16	0
	26-50	4.5-7.3	0.2-0.5	10-16	0
	50-80	5.1-7.8	0.1-0.3	6.1-14	0-6
CeA:					
Carlisle--------	0-80	4.5-7.8	70-99	150-230	0-6
CfD2:					
Chili----------	0-4	4.5-7.3	1.0-3.0	8.0-16	0
	4-62	4.5-6.5	0.5-1.0	8.0-16	0
	62-80	5.1-7.8	0.1-0.3	2.0-10	0-6
ChA:					
Chili----------	0-8	4.5-7.3	1.0-3.0	8.0-16	0
	8-16	4.5-7.3	0.5-1.0	8.0-16	0
	16-55	4.5-6.5	0.2-0.5	6.0-16	0
	55-80	5.1-7.8	0.1-0.3	2.0-10	0-6
ChB:					
Chili----------	0-13	4.5-7.3	1.0-3.0	8.0-16	0
	13-18	4.5-7.3	0.5-1.0	8.0-16	0
	18-50	4.5-6.5	0.2-0.5	6.0-16	0
	50-80	5.1-7.8	0.1-0.3	2.0-10	0-6
ChC:					
Chili----------	0-10	4.5-7.3	1.0-3.0	8.0-16	0
	10-45	4.5-7.3	0.5-1.0	8.0-16	0
	45-70	4.5-6.5	0.2-0.5	6.0-16	0
	70-80	5.1-7.8	0.1-0.3	2.0-10	0-6
CmB:					
Conotton--------	0-10	5.1-6.5	0.5-3.0	8.0-16	0
	10-15	4.5-7.3	0.2-1.0	3.0-12	0
	15-80	4.5-7.3	0.1-0.5	3.0-12	0-6

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
CmC:					
Conotton--------	0-10	5.1-6.5	0.5-3.0	8.0-16	0
	10-70	4.5-7.3	0.2-1.0	3.0-12	0
	70-80	5.6-7.8	0.1-0.5	2.0-10	0-6
CoB:					
Coshocton-------	0-11	3.5-7.3	1.0-3.0	10-18	0
	11-23	3.5-5.5	0.3-1.0	10-20	0
	23-45	3.5-5.5	0.1-0.5	12-22	0
	45-70	4.5-6.0	0.1-0.3	10-22	0
	70-72	---	---	---	---
CoC:					
Coshocton-------	0-11	3.5-7.3	1.0-3.0	10-18	0
	11-32	3.5-5.5	0.3-1.0	10-20	0
	32-42	3.5-5.5	0.1-0.5	12-22	0
	42-52	4.5-6.0	0.1-0.3	10-22	0
	52-56	---	---	---	---
CoD:					
Coshocton-------	0-4	3.5-7.3	1.0-3.0	10-18	0
	4-24	3.5-5.5	0.3-1.0	10-20	0
	24-48	3.5-5.5	0.1-0.5	12-22	0
	48-75	4.5-6.0	0.1-0.3	10-22	0
	75-77	---	---	---	---
DAM:					
Dam----------	---	---	---	---	---
DgA:					
Doles----------	0-15	4.5-7.3	0.5-3.0	10-20	0
	15-30	4.5-6.0	0.3-1.0	10-20	0
	30-60	4.5-6.0	0.2-0.5	10-20	0
	60-80	4.5-6.0	0.1-0.3	12-25	0
ErC:					
Ernest----------	0-8	4.5-6.0	2.0-4.0	11-13	0
	8-24	4.5-5.5	0.5-1.0	11-18	0
	24-44	4.5-5.5	0.2-0.5	9.0-15	0
	44-60	4.5-5.5	0.2-0.5	10-18	0
ErD:					
Ernest----------	0-14	4.5-6.0	2.0-4.0	11-13	0
	14-33	4.5-5.5	0.5-1.0	11-18	0
	33-50	4.5-5.5	0.2-0.5	9.0-15	0
	50-80	4.5-5.5	0.2-0.5	10-18	0
FbB:					
Fairpoint-------	0-5	5.6-7.3	0.0-0.5	7.0-15	0
	5-80	5.6-7.3	0.0-0.2	7.0-20	0
FbD:					
Fairpoint-------	0-4	5.6-7.3	0.0-0.5	7.0-15	0
	4-80	5.6-7.3	0.0-0.2	7.0-20	0
FbF:					
Fairpoint-------	0-4	5.6-7.3	0.0-0.5	7.0-15	0
	4-80	5.6-7.3	0.0-0.2	7.0-20	0
FcB:					
Fairpoint-------	0-8	5.6-7.3	0.5-2.0	10-24	0
	8-80	5.6-7.3	0.0-0.3	7.0-21	0
FcD:					
Fairpoint-------	0-8	5.6-7.3	0.5-2.0	10-24	0
	8-80	5.6-7.3	0.0-0.3	7.0-21	0
FdA:					
Fitchville------	0-10	4.5-7.3	2.0-3.0	14-22	0
	10-68	4.5-7.3	0.5-1.0	10-25	0
	68-80	5.6-7.8	0.1-0.5	7.6-18	0-6
FdB:					
Fitchville------	0-8	4.5-7.3	2.0-3.0	14-22	0
	8-50	4.5-7.3	0.5-1.0	10-25	0
	50-80	5.6-7.8	0.1-0.5	7.6-18	0-6

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
FeA:					
Fluvaquents-----	0-80	---	---	---	---
FnC2:					
Fredericktown---	0-10	4.5-7.3	1.0-4.0	6.0-15	0
	10-25	4.5-6.5	0.3-1.0	6.0-11	0
	25-80	4.5-6.5	0.3-1.0	4.0-8.0	0
FnD2:					
Fredericktown---	0-9	4.5-7.3	1.0-4.0	6.0-15	0
	9-60	4.5-6.5	0.3-1.0	6.0-11	0
	60-80	5.1-6.5	0.3-1.0	4.0-8.0	0
FoB:					
Fredericktown---	0-12	4.5-7.3	1.0-4.0	6.0-15	0
	12-25	4.5-6.5	0.2-1.0	6.0-11	0
	25-80	4.5-6.5	0.2-1.0	4.0-8.0	0
FrA:					
Frenchtown------	0-4	3.5-7.3	2.0-4.0	10-22	0
	4-24	3.5-6.0	0.5-1.0	15-25	0
	24-45	4.5-6.5	0.2-0.5	10-22	0
	45-80	4.5-8.4	0.1-0.3	6.0-19	0-10
GaB:					
Gavers----------	0-8	5.1-7.3	1.0-3.0	10-16	0
	8-24	5.1-6.0	0.3-0.7	12-19	0
	24-78	5.6-7.3	0.1-0.3	10-16	0
	78-80	5.1-8.4	0.0-0.0	16-25	0-10
GeC:					
Germano---------	0-10	4.5-7.3	0.5-3.0	5.0-10	0
	10-26	4.5-6.0	0.2-1.0	5.0-12	0
	26-33	4.5-5.5	0.1-0.5	4.0-8.0	0
	33-43	---	---	---	---
GeD:					
Germano---------	0-4	4.5-7.3	0.5-3.0	5.0-10	0
	4-30	4.5-6.0	0.2-1.0	5.0-12	0
	30-36	4.5-5.5	0.1-0.5	4.0-8.0	0
	36-46	---	---	---	---
GnB:					
Gilpin----------	0-9	3.5-7.3	0.5-4.0	8.0-18	0
	9-22	3.5-5.5	0.3-1.0	9.3-18	0
	22-26	---	---	---	---
GnC:					
Gilpin----------	0-3	3.5-7.3	0.5-4.0	8.0-18	0
	3-25	3.5-5.5	0.3-1.0	9.3-18	0
	25-35	---	---	---	---
GnD:					
Gilpin----------	0-10	3.5-7.3	0.5-4.0	8.0-18	0
	10-15	3.5-5.5	0.3-1.0	9.3-18	0
	15-30	3.5-5.5	0.1-0.5	9.1-18	0
	30-32	---	---	---	---
GoC:					
Gilpin----------	0-7	3.5-7.3	0.5-4.0	8.0-18	0
	7-20	3.5-5.5	0.3-1.0	9.3-18	0
	20-28	3.5-5.5	0.1-0.5	9.1-18	0
	28-38	---	---	---	---
Coshocton-------	0-7	3.5-7.3	1.0-3.0	10-18	0
	7-40	3.5-5.5	0.3-1.0	10-20	0
	40-46	3.5-5.5	0.1-0.5	12-22	0
	46-56	4.5-6.0	0.1-0.3	10-22	0
	56-66	---	---	---	---
GoD:					
Gilpin----------	0-7	3.5-7.3	0.5-4.0	8.0-18	0
	7-28	3.5-5.5	0.3-1.0	9.3-18	0
	28-38	---	---	---	---

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
Coshocton-------	0-7	3.5-7.3	1.0-3.0	10-18	0
	7-40	3.5-5.5	0.3-1.0	10-20	0
	40-50	3.5-5.5	0.1-0.5	12-22	0
	50-56	4.5-6.0	0.1-0.3	10-22	0
	56-66	---	---	---	---
GpC:					
Gilpin----------	0-6	3.5-7.3	0.5-4.0	8.0-18	0
	6-30	3.5-5.5	0.3-1.0	9.3-18	0
	30-40	---	---	---	---
Coshocton-------	0-6	3.5-7.3	1.0-3.0	10-18	0
	6-28	3.5-5.5	0.3-1.0	10-20	0
	28-42	3.5-5.5	0.1-0.5	12-22	0
	42-64	4.5-6.0	0.1-0.3	10-22	0
	64-66	---	---	---	---
Urban land------	---	---	---	---	---
GrB:					
Glenford--------	0-8	4.5-7.3	1.0-3.0	10-18	0
	8-30	4.5-6.0	0.5-1.0	10-20	0
	30-60	4.5-7.3	0.3-0.5	10-20	0
	60-80	4.5-7.8	0.1-0.3	6.0-18	0-6
GrC:					
Glenford--------	0-7	4.5-7.3	1.0-3.0	10-18	0
	7-26	4.5-6.0	0.5-1.0	10-20	0
	26-60	4.5-7.3	0.3-0.5	10-20	0
	60-80	4.5-7.8	0.1-0.3	6.0-18	0-6
GuC:					
Guernsey--------	0-8	4.5-7.3	1.0-3.0	12-25	0
	8-16	4.5-6.0	0.3-1.0	14-25	0
	16-52	4.5-8.4	0.1-0.5	24-40	0-10
	52-65	5.1-8.4	0.1-0.3	24-50	0-10
	65-75	---	---	---	---
GuC2:					
Guernsey--------	0-8	4.5-7.3	1.0-3.0	12-25	0
	8-16	4.5-6.0	0.3-1.0	14-25	0
	16-52	4.5-8.4	0.1-0.5	24-40	0-10
	52-65	5.1-8.4	0.1-0.3	24-50	0-10
	65-75	---	---	---	---
GuD:					
Guernsey--------	0-8	4.5-7.3	1.0-3.0	12-25	0
	8-13	4.5-6.0	0.3-1.0	14-25	0
	13-50	4.5-8.4	0.1-0.5	24-40	0-10
	50-68	5.1-8.4	0.1-0.3	24-50	0-10
	68-78	---	---	---	---
HeB:					
Hazleton--------	0-8	3.5-7.3	2.0-4.0	15-30	0
	8-36	3.5-5.5	0.0-0.5	5.0-15	0
	36-44	3.5-5.5	0.0-0.5	5.0-15	0
	44-46	---	---	---	---
HeC:					
Hazleton--------	0-7	3.5-7.3	2.0-4.0	15-30	0
	7-40	3.5-5.5	0.0-0.5	5.0-15	0
	40-45	3.5-5.5	0.0-0.5	5.0-15	0
	45-47	---	---	---	---
HeD:					
Hazleton--------	0-3	3.5-7.3	2.0-4.0	15-30	0
	3-45	3.5-5.5	0.0-0.5	5.0-15	0
	45-58	3.5-5.5	0.0-0.5	5.0-15	0
	58-60	---	---	---	---

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
HeE:					
Hazleton--------	0-7	3.5-7.3	2.0-4.0	15-30	0
	7-42	3.5-5.5	0.0-0.5	5.0-15	0
	42-48	3.5-5.5	0.0-0.5	5.0-15	0
	48-50	---	---	---	---
HfF:					
Hazleton--------	0-3	3.5-5.5	2.0-4.0	15-30	0
	3-36	3.5-5.5	0.0-0.5	5.0-15	0
	36-44	3.5-5.5	0.0-0.5	5.0-15	0
	44-47	---	---	---	---
Rock outcrop----	---	---	---	---	---
HgF:					
Hazleton--------	0-2	4.5-7.3	70-99	150-230	0
	2-5	3.5-5.5	2.0-4.0	15-30	0
	5-50	3.5-5.5	0.0-0.5	5.0-15	0
	50-67	3.5-5.5	0.0-0.5	5.0-15	0
	67-69	---	---	---	---
Westmoreland----	0-4	4.5-6.0	2.0-4.0	15-30	0
	4-44	4.5-6.0	0.0-0.5	10-20	0
	44-52	5.1-6.0	0.0-0.5	10-20	0
	52-54	---	---	---	---
HkA:					
Holly----------	0-4	5.1-7.3	2.0-5.0	10-24	0
	4-20	5.1-7.3	0.5-2.0	10-18	0
	20-75	5.1-7.8	0.5-2.0	5.0-12	0-6
	75-77	---	---	---	---
HlB:					
Homewood--------	0-12	5.1-7.3	1.0-3.0	7.0-13	0
	12-22	4.5-5.5	0.4-1.0	8.0-12	0
	22-42	4.5-6.5	0.3-0.5	8.0-14	0
	42-62	4.5-6.5	0.3-0.5	8.0-14	0
	62-66	4.5-7.8	0.3-0.5	8.0-13	0-6
	66-76	---	---	---	---
HmA:					
Homeworth-------	0-9	5.1-7.3	1.0-3.0	8.0-15	0
	9-43	5.1-7.3	0.3-1.0	8.0-14	0
	43-80	5.1-8.4	0.0-0.2	18-28	0-10
HmB:					
Homeworth-------	0-13	5.1-7.3	1.0-3.0	8.0-15	0
	13-38	5.1-7.3	0.3-1.0	8.0-14	0
	38-80	5.1-8.4	0.0-0.2	18-28	0-10
HoA:					
Homeworth-------	0-12	5.1-7.3	1.0-3.0	8.0-15	0
	12-40	5.1-7.3	0.3-1.0	8.0-14	0
	40-80	5.1-8.4	0.0-0.2	18-28	0-10
HoB:					
Homeworth-------	0-13	5.1-7.3	1.0-3.0	8.0-15	0
	13-38	5.1-7.3	0.3-1.0	8.0-14	0
	38-80	5.1-8.4	0.0-0.2	18-28	0-10
JwA:					
Jimtown---------	0-8	4.5-7.3	2.0-3.0	8.0-15	0
	8-16	4.5-7.3	0.5-1.0	10-17	0
	16-32	4.5-6.5	0.5-1.0	10-17	0
	32-39	5.1-6.5	0.2-0.5	4.0-15	0
	39-80	5.1-7.3	0.1-0.3	2.0-8.0	0
JwB:					
Jimtown---------	0-11	4.5-7.3	2.0-3.0	8.0-15	0
	11-42	4.5-7.3	0.5-1.0	10-17	0
	42-50	5.1-6.5	0.2-0.5	4.0-15	0
	50-80	5.1-7.3	0.1-0.3	2.0-8.0	0

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
KeB:					
Keene----------	0-11	4.5-7.3	1.0-3.0	10-18	0
	11-25	4.5-5.5	0.3-1.0	12-20	0
	25-66	4.5-6.5	0.1-0.3	12-35	0
	66-76	---	---	---	---
KnB:					
Kensington------	0-10	4.5-7.3	1.0-4.0	6.0-15	0
	10-16	4.5-6.0	1.0-3.0	10-20	0
	16-33	4.5-6.0	0.3-1.0	6.0-12	0
	33-42	4.5-6.0	0.3-1.0	6.0-12	0
	42-50	---	---	---	---
KnC:					
Kensington------	0-11	4.5-7.3	1.0-4.0	6.0-15	0
	11-17	4.5-6.0	1.0-3.0	10-20	0
	17-33	4.5-6.0	0.3-1.0	6.0-12	0
	33-52	4.5-6.0	0.3-1.0	6.0-12	0
	52-58	4.5-6.0	0.3-1.0	5.0-9.0	0
	58-71	---	---	---	---
	71-73	---	---	---	---
KnD:					
Kensington------	0-10	4.5-7.3	1.0-4.0	6.0-15	0
	10-16	4.5-6.0	1.0-3.0	10-20	0
	16-46	4.5-6.0	0.3-1.0	6.0-12	0
	46-60	4.5-6.0	0.3-1.0	5.0-9.0	0
	60-80	---	---	---	---
LbA:					
Lobdell---------	0-10	5.1-7.3	1.0-3.0	10-16	0
	10-42	5.1-7.3	0.5-1.0	10-16	0
	42-76	5.6-7.3	0.1-0.5	9.0-15	0
LnA:					
Lorain----------	0-7	5.1-7.3	4.0-11.0	14-26	0
	7-54	5.1-7.3	0.5-1.0	16-28	0
	54-62	6.6-8.4	0.1-0.5	15-28	0-10
McB:					
Mechanicsburg---	0-9	4.5-7.3	1.0-3.0	10-20	0
	9-22	4.5-6.0	0.3-1.0	10-20	0
	22-45	4.5-6.0	0.2-0.5	7.0-17	0
	45-50	4.5-6.0	0.1-0.3	6.0-12	0
	50-67	---	---	---	---
	67-69	---	---	---	---
McC:					
Mechanicsburg---	0-8	4.5-7.3	1.0-3.0	10-20	0
	8-30	4.5-6.0	0.3-1.0	10-20	0
	30-45	4.5-6.0	0.2-0.5	7.0-17	0
	45-50	4.5-6.0	0.1-0.3	6.0-12	0
	50-60	---	---	---	---
MnB:					
Morristown------	0-8	6.1-8.4	0.5-2.0	10-25	0-10
	8-80	7.4-8.4	0.0-0.2	8.0-21	2-20
MnD:					
Morristown------	0-5	6.1-8.4	0.5-2.0	10-25	0-10
	5-80	7.4-8.4	0.0-0.2	8.0-21	2-20
MoB:					
Morristown------	0-4	6.1-8.4	0.0-0.5	10-25	0-10
	4-80	7.4-8.4	0.0-0.2	8.0-21	2-20
MoD:					
Morristown------	0-3	6.1-8.4	0.0-0.5	10-25	0-10
	3-80	7.4-8.4	0.0-0.2	8.0-21	2-20
OdA:					
Olmsted---------	0-8	4.5-7.3	4.0-11.0	11-19	0
	8-21	4.5-7.3	0.5-1.0	6.0-13	0
	21-34	5.1-7.8	0.1-0.5	8.0-18	0-6
	34-60	5.1-7.8	0.1-0.5	3.0-15	0-6

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
Valley----------	0-7	4.5-7.3	3.0-8.0	15-22	0
	7-41	5.1-7.8	0.2-1.0	11-31	0
	41-48	5.6-8.4	0.1-0.3	15-30	0-10
	48-80	5.6-8.4	0.1-0.3	10-20	0-10
OmB:					
Omulga----------	0-9	4.5-7.3	0.5-2.0	10-20	0
	9-34	3.5-5.5	0.3-1.0	10-18	0
	34-51	4.5-6.0	0.1-0.5	8.0-16	0
	51-80	4.5-7.3	0.1-0.3	11-22	0
OmC:					
Omulga----------	0-9	4.5-7.3	0.5-2.0	10-20	0
	9-22	3.5-5.5	0.3-1.0	10-18	0
	22-38	4.5-6.0	0.1-0.5	8.0-16	0
	38-80	4.5-7.3	0.1-0.3	11-22	0
OrA:					
Orrville--------	0-10	5.1-7.3	2.0-4.0	10-20	0
	10-32	4.5-6.5	0.2-1.0	10-16	0
	32-50	5.1-6.5	0.1-0.3	5.0-13	0
	50-80	5.1-7.3	0.1-0.3	5.0-13	0
Pg:					
Pits----------	---	---	---	---	---
RaB:					
Rainsboro-------	0-8	4.5-7.3	0.5-2.0	6.0-11	0
	8-26	4.5-6.5	0.3-1.0	10-17	0
	26-41	4.5-6.5	0.1-0.5	8.0-15	0
	41-80	4.5-6.5	0.1-0.5	8.0-15	0
RaC2:					
Rainsboro-------	0-7	4.5-7.3	0.5-2.0	6.0-11	0
	7-25	4.5-6.5	0.3-1.0	10-17	0
	25-48	4.5-6.5	0.1-0.5	8.0-15	0
	48-80	4.5-6.5	0.1-0.5	8.0-15	0
RbC:					
Rainsboro-------	0-10	4.5-6.5	0.5-2.0	6.0-11	0
	10-21	4.5-6.5	0.3-1.0	10-17	0
	21-47	4.5-6.5	0.1-0.5	8.0-15	0
	47-80	4.5-6.5	0.1-0.5	8.0-15	0
ReA:					
Ravenna---------	0-10	3.5-7.3	1.0-3.0	10-18	0
	10-24	3.5-6.0	0.5-1.0	8.0-18	0
	24-40	4.5-7.3	0.2-0.5	8.0-16	0
	40-80	4.5-7.8	0.1-0.3	6.0-17	0-6
ReB:					
Ravenna---------	0-13	3.5-7.3	1.0-3.0	10-18	0
	13-25	3.5-6.0	0.5-1.0	8.0-18	0
	25-42	4.5-7.3	0.2-0.5	8.0-16	0
	42-80	4.5-7.8	0.1-0.3	6.0-17	0-6
RhD:					
Richland--------	0-8	5.1-7.3	1.0-3.0	10-16	0
	8-55	5.1-7.3	0.3-1.0	8.0-18	0
	55-80	5.6-7.3	0.1-0.3	9.0-18	0
RhE:					
Richland--------	0-9	5.1-7.3	1.0-3.0	10-16	0
	9-36	5.1-7.3	0.3-1.0	8.0-18	0
	36-80	5.6-7.3	0.1-0.3	9.0-18	0
RsB:					
Rittman---------	0-10	3.5-7.3	2.0-3.0	12-25	0
	10-21	3.5-6.0	0.5-1.0	12-22	0
	21-44	4.5-7.3	0.2-0.5	8.0-20	0
	44-80	6.1-7.8	0.1-0.3	10-20	0-6

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
RsC:					
Rittman---------	0-8	3.5-7.3	2.0-3.0	12-25	0
	8-24	3.5-6.0	0.5-1.0	12-22	0
	24-38	4.5-7.3	0.2-0.5	8.0-20	0
	38-80	6.1-7.8	0.1-0.3	10-20	0-6
RsD2:					
Rittman---------	0-4	3.5-7.3	2.0-3.0	12-25	0
	4-20	3.5-6.0	0.5-1.0	12-22	0
	20-45	4.5-7.3	0.2-0.5	8.0-20	0
	45-80	6.1-7.8	0.1-0.3	10-20	0-6
TeB:					
Teegarden-------	0-11	4.5-7.3	1.0-3.0	5.0-13	0
	11-22	4.5-5.5	0.4-1.0	8.0-12	0
	22-32	3.5-5.5	0.3-0.5	8.0-12	0
	32-65	3.5-5.5	0.3-0.5	8.0-13	0
	65-80	4.5-5.5	0.0-0.1	7.5-23	0
TeC:					
Teegarden-------	0-10	4.5-7.3	1.0-3.0	5.0-13	0
	10-25	4.5-5.5	0.4-1.0	8.0-12	0
	25-34	3.5-5.5	0.3-0.5	8.0-12	0
	34-52	3.5-5.5	0.3-0.5	8.0-13	0
	52-65	4.5-5.5	0.0-0.1	7.5-23	0
	65-80	---	---	---	---
TeC2:					
Teegarden-------	0-10	4.5-7.3	1.0-3.0	5.0-13	0
	10-25	4.5-5.5	0.4-1.0	8.0-12	0
	25-34	3.5-5.5	0.3-0.5	8.0-12	0
	34-52	3.5-5.5	0.3-0.5	8.0-13	0
	52-65	4.5-5.5	0.0-0.1	7.5-23	0
	65-80	---	---	---	---
ToA:					
Tioga----------	0-9	5.1-7.8	2.0-6.0	12-28	0
	9-40	5.1-7.8	0.0-1.0	3.0-15	0-6
	40-80	5.6-8.4	0.0-1.0	3.0-15	0-10
Ua:					
Udorthents------	0-4	---	0.0-5.0	---	---
	4-80	---	0.0-0.0	---	---
Ub:					
Udorthents------	0-24	---	0.0-4.0	---	---
	24-80	---	0.0-0.0	---	---
Uc:					
Udorthents------	0-4	---	0.0-5.0	---	---
	4-80	---	0.0-0.0	---	---
Pits----------	---	---	---	---	---
UkC2:					
Upshur----------	0-4	4.5-7.3	0.5-3.0	14-20	0
	4-44	4.5-8.4	0.0-0.3	20-28	0-10
	44-54	---	---	---	---
Berks----------	0-7	3.5-7.3	2.0-4.0	5.0-15	0
	7-20	3.5-6.5	0.0-0.5	5.0-10	0
	20-24	3.5-6.5	0.0-0.5	5.0-10	0
	24-34	---	---	---	---
UkD2:					
Upshur----------	0-8	4.5-7.3	0.5-3.0	14-20	0
	8-42	4.5-8.4	0.0-0.3	20-28	0-10
	42-72	5.1-8.4	0.0-0.1	14-28	0-10
	72-80	---	---	---	---
Berks----------	0-5	3.5-7.3	2.0-4.0	5.0-15	0
	5-22	3.5-6.5	0.0-0.5	5.0-10	0
	22-24	---	---	---	---

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
UkE2:					
Upshur----------	0-3	4.5-7.3	0.5-3.0	14-20	0
	3-46	4.5-8.4	0.0-0.3	20-28	0-10
	46-50	5.1-8.4	0.0-0.1	14-28	0-10
	50-60	---	---	---	---
Berks----------	0-4	3.5-7.3	2.0-4.0	5.0-15	0
	4-22	3.5-6.5	0.0-0.5	5.0-10	0
	22-24	---	---	---	---
Ur:					
Urban land------	---	---	---	---	---
UtB:					
Urban land------	---	---	---	---	---
Canfield--------	0-6	4.5-7.3	1.0-3.0	10-18	0
	6-28	4.5-5.5	0.5-1.0	10-16	0
	28-48	4.5-7.3	0.2-0.5	10-16	0
	48-80	5.1-7.8	0.1-0.3	6.1-14	0-6
UtC:					
Urban land------	---	---	---	---	---
Canfield--------	0-6	4.5-7.3	1.0-3.0	10-18	0
	6-24	4.5-5.5	0.5-1.0	10-16	0
	24-45	4.5-7.3	0.2-0.5	10-16	0
	45-80	5.1-7.8	0.1-0.3	6.1-14	0-6
UvB:					
Urban land------	---	---	---	---	---
Chili----------	0-8	4.5-7.3	1.0-3.0	8.0-16	0
	8-20	4.5-6.5	0.5-1.0	8.0-16	0
	20-55	4.5-6.5	0.2-0.5	6.0-16	0
	55-80	5.1-7.8	0.1-0.3	2.0-10	0-6
VaA:					
Valley----------	0-7	4.5-7.3	3.0-8.0	15-22	0
	7-41	5.1-7.8	0.2-1.0	11-31	0
	41-48	5.6-8.4	0.1-0.3	15-30	0-10
	48-80	5.6-8.4	0.1-0.3	10-20	0-10
VbA:					
Valley----------	0-11	4.5-7.3	3.0-8.0	15-22	0
	11-41	5.1-7.8	0.2-1.0	11-31	0
	41-48	5.6-8.4	0.1-0.3	15-30	0-10
	48-80	5.6-8.4	0.1-0.3	10-20	0-10
VcA:					
Valley----------	0-7	4.5-7.3	3.0-8.0	15-22	0
	7-41	5.1-7.8	0.2-1.0	11-31	0
	41-48	5.6-8.4	0.1-0.3	15-30	0-10
	48-80	5.6-8.4	0.1-0.3	10-20	0-10
Lorain----------	0-7	5.1-7.3	4.0-11.0	14-26	0
	7-54	5.1-7.3	0.5-1.0	16-28	0
	54-62	6.6-8.4	0.1-0.5	15-28	0-10
VnB:					
Vandergrift-----	0-10	4.5-7.3	2.0-4.0	9.5-18	0
	10-46	4.5-6.5	0.1-1.0	14-26	0
	46-56	5.1-7.8	0.1-0.3	10-25	0-6
	56-58	---	---	---	---
VnC:					
Vandergrift-----	0-8	4.5-7.3	2.0-4.0	9.5-18	0
	8-52	4.5-6.5	0.1-1.0	14-26	0
	52-76	5.1-7.8	0.1-0.3	10-25	0-6
	76-80	---	---	---	---

TABLE 30.--CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Soil reaction	Organic matter	Cation-exchange capacity	Calcium carbonate
	In	pH	Pct	meq/100 g	Pct
W:					
Water----------	---	---	---	---	---
WaA:					
Wadsworth-------	0-10	3.5-7.3	2.0-4.0	14-20	0
	10-24	3.5-6.0	0.5-1.0	15-22	0
	24-45	3.5-7.3	0.2-0.5	0.0-20	0
	45-80	5.1-8.4	0.1-0.3	6.0-20	0-10
WaB:					
Wadsworth-------	0-8	3.5-7.3	2.0-4.0	14-20	0
	8-27	3.5-6.0	0.5-1.0	15-22	0
	27-46	3.5-7.3	0.2-0.5	0.0-20	0
	46-80	5.1-8.4	0.1-0.3	6.0-20	0-10
WkE:					
Westmoreland----	0-3	4.5-6.0	1.0-4.0	15-25	0
	3-36	4.5-6.0	0.0-0.5	10-20	0
	36-50	5.1-6.0	0.0-0.5	10-20	0
	50-60	---	---	---	---
Berks----------	0-4	3.5-6.5	2.0-4.0	5.0-15	0
	4-20	3.5-6.5	0.0-0.5	5.0-10	0
	20-24	3.5-6.5	0.0-0.5	5.0-10	0
	24-26	---	---	---	---
WkF:					
Westmoreland----	0-1	4.5-6.0	70-99	150-230	0
	1-4	4.5-6.0	1.0-4.0	15-25	0
	4-38	4.5-6.0	0.0-0.5	10-20	0
	38-80	5.1-6.0	0.0-0.5	10-20	0
Berks----------	0-3	3.5-6.5	2.0-4.0	5.0-15	0
	3-22	3.5-6.5	0.0-0.5	5.0-10	0
	22-32	---	---	---	---
WmC:					
Westmoreland----	0-6	4.5-7.3	1.0-4.0	15-25	0
	6-32	4.5-6.0	0.0-0.5	10-20	0
	32-60	5.1-6.0	0.0-0.5	10-20	0
	60-70	---	---	---	---
Coshocton-------	0-8	3.5-7.3	1.0-3.0	10-18	0
	8-31	3.5-5.5	0.3-1.0	10-20	0
	31-45	3.5-5.5	0.1-0.5	12-22	0
	45-66	4.5-6.0	0.1-0.3	10-22	0
	66-76	---	---	---	---
WmD:					
Westmoreland----	0-5	4.5-7.3	1.0-4.0	15-25	0
	5-37	4.5-6.0	0.0-0.5	10-20	0
	37-65	5.1-6.0	0.0-0.5	10-20	0
	65-75	---	---	---	---
Coshocton-------	0-3	3.5-7.3	1.0-3.0	10-18	0
	3-14	3.5-5.5	0.3-1.0	10-20	0
	14-38	3.5-5.5	0.1-0.5	12-22	0
	38-72	4.5-6.0	0.1-0.3	10-22	0
	72-80	---	---	---	---
WoA:					
Wick----------	0-5	4.5-7.3	2.0-4.0	33-34	0
	5-34	4.5-6.5	0.5-1.0	13-27	0
	34-80	5.1-7.3	0.1-0.3	17-18	0
ZeA:					
Zepernick-------	0-10	4.5-7.3	2.0-5.0	8.0-18	0
	10-50	3.5-5.5	0.5-1.2	9.5-19	0
	50-80	3.5-7.3	0.1-0.2	4.1-20	0

TABLE 31.--WATER FEATURES

(Depths of layers are in feet. 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. See text on page 244 for additional information.)

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
AmF:										
Amanda----------	C	Jan-May	5.0-6.7	>6.0	Apparent	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	5.0-6.7	>6.0	Apparent	---	---	None	---	None
BkB:										
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
BkC:										
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
BkD:										
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
BkE:										
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
BmB:										
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
BmC:										
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
BmD:										
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
BpF:										
Bethesda--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
BsC2:										
Bogart----------	B	Jan-Apr	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	>6.0	Apparent	---	---	None	---	None
BtA:										
Bogart----------	B	Jan-Apr	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	>6.0	Apparent	---	---	None	---	None
BtB:										
Bogart----------	B	Jan-Apr	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	>6.0	Apparent	---	---	None	---	None
BtC:										
Bogart----------	B	Jan-Apr	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	>6.0	Apparent	---	---	None	---	None
CaA:										
Calcutta--------	C	Jan-May	0.5-1.0	1.7-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	1.7-2.5	Perched	---	---	None	---	None
CcB:										
Canfield--------	C	Jan-May	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
CcC:										
Canfield--------	C	Jan-May	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
CcD:										
Canfield--------	C	Jan-May	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
CcE:										
Canfield--------	C	Jan-May	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None

TABLE 31.--WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
CeA:										
Carlisle--------	A/D	Jan-Jun	0.0-1.0	>6.0	Apparent	0.0-2.0	Very long	Frequent	---	None
		Jul-Aug	---	---	---	---	---	---	---	None
		Sep	0.0-1.0	>6.0	Apparent	---	---	---	---	None
		Oct-Dec	0.0-1.0	>6.0	Apparent	0.0-2.0	Very long	Frequent	---	None
CfD2:										
Chili----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
ChA:										
Chili----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
ChB:										
Chili----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
ChC:										
Chili----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
CmB:										
Conotton--------	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
CmC:										
Conotton--------	A	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
CoB:										
Coshocton-------	C	Jan-Apr	1.5-2.5	2.5-4.2	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
CoC:										
Coshocton-------	C	Jan-Apr	1.5-2.5	2.5-4.2	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
CoD:										
Coshocton-------	C	Jan-Apr	1.5-2.5	2.5-4.2	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
DgA:										
Doles----------	C	Jan-May	0.5-1.0	1.7-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	1.7-2.5	Perched	---	---	None	---	None
ErC:										
Ernest----------	C	Jan-Apr	1.0-2.0	1.7-3.0	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	1.7-3.0	Perched	---	---	None	---	None
ErD:										
Ernest----------	C	Jan-Apr	1.0-2.0	1.7-3.0	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	1.7-3.0	Perched	---	---	None	---	None
FbB:										
Fairpoint-------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FbD:										
Fairpoint-------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FbF:										
Fairpoint-------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FcB:										
Fairpoint-------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FcD:										
Fairpoint-------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FdA:										
Fitchville------	C	Jan-May	0.5-1.0	>6.0	Apparent	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	>6.0	Apparent	---	---	None	---	None
FdB:										
Fitchville------	C	Jan-May	0.5-1.0	>6.0	Apparent	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	>6.0	Apparent	---	---	None	---	None
FeA:										
Fluvaquents-----	D	Jan-Jun	0	>6.0	Apparent	0.0-2.0	Very long	Frequent	Very long	Frequent
		Jul-Sep	0	>6.0	Apparent	0.0-2.0	Very long	Frequent	---	---
		Oct-Dec	0	>6.0	Apparent	0.0-2.0	Very long	Frequent	Very long	Frequent

TABLE 31.--WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
FnC2:										
Fredericktown---	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FnD2:										
Fredericktown---	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FoB:										
Fredericktown---	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
FrA:										
Frenchtown------	C	Jan-May	0.0-0.5	1.7-3.2	Perched	0.0-1.0	Brief	Frequent	---	None
		Jun-Sep	---	---	---	---	---	---	---	None
		Oct-Dec	0.0-0.5	1.7-3.2	Perched	0.0-1.0	Brief	Frequent	---	None
GaB:										
Gavers----------	C	Jan-May	0.5-1.0	>6.0	Apparent	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0.5-1.0	>6.0	Apparent	---	---	None	---	None
GeC:										
Germano---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GeD:										
Germano---------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GnB:										
Gilpin----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GnC:										
Gilpin----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GnD:										
Gilpin----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
GoC:										
Gilpin----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Coshocton-------	C	Jan-Apr	1.5-2.5	2.5-4.2	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
GoD:										
Gilpin----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Coshocton-------	C	Jan-Apr	1.5-2.5	2.5-4.2	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
GpC:										
Gilpin----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Coshocton-------	C	Jan-Apr	1.5-2.5	2.5-4.2	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
GrB:										
Glenford--------	C	Jan-Apr	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	>6.0	Apparent	---	---	None	---	None
GrC:										
Glenford--------	C	Jan-Apr	1.0-2.0	>6.0	Apparent	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	>6.0	Apparent	---	---	None	---	None
GuC:										
Guernsey--------	C	Jan-Apr	0.8-2.0	>6.0	Apparent	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	0.8-2.0	>6.0	Apparent	---	---	None	---	None
GuC2:										
Guernsey--------	C	Jan-Apr	0.8-2.0	>6.0	Apparent	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	0.8-2.0	>6.0	Apparent	---	---	None	---	None
GuD:										
Guernsey--------	C	Jan-Apr	0.8-2.0	>6.0	Apparent	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	0.8-2.0	>6.0	Apparent	---	---	None	---	None
HeB:										
Hazleton--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HeC:										
Hazleton--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None

TABLE 31.--WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
HeD:										
Hazleton--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HeE:										
Hazleton--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HfF:										
Hazleton--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HgF:										
Hazleton--------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Westmoreland----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
HkA:										
Holly----------	B/D	Jan-Jun	0.0-0.5	>6.0	Apparent	---	---	None	Long	Frequent
		Jul-Sep	---	---	---	---	---	None	---	---
		Oct	0.0-0.5	>6.0	Apparent	---	---	None	---	---
		Nov-Dec	0.0-0.5	>6.0	Apparent	---	---	None	Long	Frequent
HlB:										
Homewood--------	C	Jan-May	1.5-2.3	1.7-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-2.3	1.7-2.5	Perched	---	---	None	---	None
HmA:										
Homeworth-------	C	Jan-May	0.5-1.0	2.5-4.2	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0.5-1.0	2.5-4.2	Perched	---	---	None	---	None
HmB:										
Homeworth-------	C	Jan-May	0.5-1.0	2.5-4.2	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0.5-1.0	2.5-4.2	Perched	---	---	None	---	None
HoA:										
Homeworth-------	C	Jan-May	0.5-1.0	2.5-4.2	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0.5-1.0	2.5-4.2	Perched	---	---	None	---	None
HoB:										
Homeworth-------	C	Jan-May	0.5-1.0	2.5-4.2	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	0.5-1.0	2.5-4.2	Perched	---	---	None	---	None
JwA:										
Jimtown---------	C	Jan-Jun	0.5-1.0	>6.0	Apparent	---	---	None	---	None
		Jul-Sep	---	---	---	---	---	None	---	None
		Oct-Dec	0.5-1.0	>6.0	Apparent	---	---	None	---	None
JwB:										
Jimtown---------	C	Jan-Jun	0.5-1.0	>6.0	Apparent	---	---	None	---	None
		Jul-Sep	---	---	---	---	---	None	---	None
		Oct-Dec	0.5-1.0	>6.0	Apparent	---	---	None	---	None
KeB:										
Keene----------	C	Jan-Apr	1.0-2.0	3.3-7.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	3.3-7.0	Perched	---	---	None	---	None
KnB:										
Kensington------	B	Jan-Apr	1.5-3.5	3.3-5.0	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.5	3.3-5.0	Perched	---	---	None	---	None
KnC:										
Kensington------	B	Jan-Apr	1.5-3.5	3.3-5.0	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.5	3.3-5.0	Perched	---	---	None	---	None
KnD:										
Kensington------	B	Jan-Apr	1.5-3.5	3.3-5.0	Perched	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.5-3.5	3.3-5.0	Perched	---	---	None	---	None
LbA:										
Lobdell---------	B	Jan-Apr	1.2-2.0	>6.0	Apparent	---	---	None	Brief	Occasional
		May-Jun	---	---	---	---	---	None	Brief	Occasional
		Jul-Nov	---	---	---	---	---	None	---	---
		Dec	1.2-2.0	>6.0	Apparent	---	---	None	---	---

TABLE 31.--WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
LnA:										
Lorain----------	C/D	Jan-Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
		Jul-Sep	---	---	---	---	---	---	---	None
		Oct-Dec	0.0-0.5	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
McB:										
Mechanicsburg---	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
McC:										
Mechanicsburg---	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
MnB:										
Morristown------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
MnD:										
Morristown------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
MoB:										
Morristown------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
MoD:										
Morristown------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
OdA:										
Olmsted---------	B/D	Jan-Jun	0.0-0.5	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
		Jun-Oct	---	---	---	---	---	---	---	None
		Nov-Dec	0.0-0.5	>6.0	Apparent	0.0-1.0	Long	Frequent	---	None
Valley----------	C/D	Jan-Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Oct	---	---	---	---	---	---	---	None
		Nov-Dec	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
OmB:										
Omulga----------	C	Jan-Apr	1.0-2.5	1.5-3.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.5	1.5-3.0	Perched	---	---	None	---	None
OmC:										
Omulga----------	C	Jan-Apr	1.0-2.5	1.5-3.0	Perched	---	---	None	---	None
		May-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.5	1.5-3.0	Perched	---	---	None	---	None
OrA:										
Orrville--------	C	Jan-May	0.5-1.0	>6.0	Apparent	---	---	None	Brief	Occasional
		Jun-Oct	---	---	---	---	---	None	---	---
		Nov-Dec	0.5-1.0	>6.0	Apparent	---	---	None	Brief	Occasional
RaB:										
Rainsboro-------	C	Jan-Apr	1.5-2.5	1.7-2.5	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
RaC2:										
Rainsboro-------	C	Jan-Apr	1.5-2.5	1.7-2.5	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
RbC:										
Rainsboro-------	C	Jan-Apr	1.5-2.5	1.7-2.5	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
ReA:										
Ravenna---------	C	Jan-Jun	0.5-1.0	1.2-2.5	Perched	---	---	None	---	None
		Jul-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	1.2-2.5	Perched	---	---	None	---	None
ReB:										
Ravenna---------	C	Jan-Jun	0.5-1.0	1.2-2.5	Perched	---	---	None	---	None
		Jul-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	1.2-2.5	Perched	---	---	None	---	None
RhD:										
Richland--------	B	Jan-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	2.0-3.5	>6.0	Apparent	---	---	None	---	None
RhE:										
Richland--------	B	Jan-Apr	2.0-3.5	>6.0	Apparent	---	---	None	---	None
		May-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	2.0-3.5	>6.0	Apparent	---	---	None	---	None
RsB:										
Rittman---------	C	Jan-May	1.0-2.0	1.5-3.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	1.5-3.0	Perched	---	---	None	---	None

TABLE 31.--WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
RsC:										
Rittman---------	C	Jan-May	1.0-2.0	1.5-3.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	1.5-3.0	Perched	---	---	None	---	None
RsD2:										
Rittman---------	C	Jan-May	1.0-2.0	1.5-3.0	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	1.5-3.0	Perched	---	---	None	---	None
TeB:										
Teegarden-------	C	Jan-May	1.0-2.0	1.5-2.5	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	1.5-2.5	Perched	---	---	None	---	None
TeC:										
Teegarden-------	C	Jan-May	1.0-2.0	1.5-2.5	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	1.5-2.5	Perched	---	---	None	---	None
TeC2:										
Teegarden-------	C	Jan-May	1.0-2.0	1.5-2.5	Perched	---	---	None	---	None
		Jun-Nov	---	---	---	---	---	None	---	None
		Dec	1.0-2.0	1.5-2.5	Perched	---	---	None	---	None
ToA:										
Tioga----------	B	Jan-Jun	>6.0	>6.0	---	---	---	None	Brief	Occasional
		Jul-Oct	>6.0	>6.0	---	---	---	None	---	---
		Nov-Dec	>6.0	>6.0	---	---	---	None	Brief	Occasional
Ua:										
Udorthents------	A/D	Jan-Dec	---	---	---	---	---	None	---	None
Ub:										
Udorthents------	A	Jan-Dec	---	---	---	---	---	None	---	None
Uc:										
Udorthents------	A/D	Jan-Dec	---	---	---	---	---	None	---	None
UkC2:										
Upshur----------	D	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
UkD2:										
Upshur----------	D	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
UkE2:										
Upshur----------	D	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
UtB:										
Canfield--------	C	Jan-May	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
UtC:										
Canfield--------	C	Jan-May	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
		Jun-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.2-2.3	1.5-2.5	Perched	---	---	None	---	None
UvB:										
Chili----------	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
VaA:										
Valley----------	C/D	Jan-Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Oct	---	---	---	---	---	---	---	None
		Nov-Dec	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
VbA:										
Valley----------	C/D	Jan-Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Oct	---	---	---	---	---	---	---	None
		Nov-Dec	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None

TABLE 31.--WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Water table: Kind	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
VcA:										
Valley----------	C/D	Jan-Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
		Jul-Oct	---	---	---	---	---	---	---	None
		Nov-Dec	0.0-0.5	>6.0	Apparent	0.0-0.5	Brief	Frequent	---	None
Lorain----------	C/D	Jan-Jun	0.0-0.5	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
		Jul-Sep	---	---	---	---	---	---	---	None
		Oct	---	---	---	0.0-0.5	Long	Frequent	---	None
		Nov-Dec	0.0-0.5	>6.0	Apparent	0.0-0.5	Long	Frequent	---	None
VnB:										
Vandergrift-----	C	Jan-Mar	1.0-2.0	2.9-5.0	Perched	---	---	None	---	None
		Apr-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	2.9-5.0	Perched	---	---	None	---	None
VnC:										
Vandergrift-----	C	Jan-Mar	1.0-2.0	2.9-5.0	Perched	---	---	None	---	None
		Apr-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	1.0-2.0	2.9-5.0	Perched	---	---	None	---	None
WaA:										
Wadsworth-------	C	Jan-Jun	0.5-1.0	1.5-2.5	Perched	---	---	None	---	None
		Jul-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	1.5-2.5	Perched	---	---	None	---	None
WaB:										
Wadsworth-------	C	Jan-Jun	0.5-1.0	1.5-2.5	Perched	---	---	None	---	None
		Jul-Oct	---	---	---	---	---	None	---	None
		Nov-Dec	0.5-1.0	1.5-2.5	Perched	---	---	None	---	None
WkE:										
Westmoreland----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
WkF:										
Westmoreland----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Berks----------	C	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
WmC:										
Westmoreland----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Coshocton-------	C	Jan-Apr	1.5-2.5	2.5-4.2	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
WmD:										
Westmoreland----	B	Jan-Dec	>6.0	>6.0	---	---	---	None	---	None
Coshocton-------	C	Jan-Apr	1.5-2.5	2.5-4.2	Perched	---	---	None	---	None
		May-Dec	---	---	---	---	---	None	---	None
WoA:										
Wick----------	D	Jan-Jun	0	>6.0	Apparent	---	---	None	Long	Frequent
		Jul-Sep	---	---	---	---	---	None	---	---
		Oct	---	---	---	---	---	None	Long	Frequent
		Nov-Dec	0	>6.0	Apparent	---	---	None	Long	Frequent
ZeA:										
Zepernick-------	C	Jan-Jun	0.5-1.0	>6.0	Apparent	---	---	None	Brief	Occasional
		Jul-Oct	---	---	---	---	---	None	---	---
		Nov-Dec	0.5-1.0	>6.0	Apparent	---	---	None	Brief	Occasional

TABLE 32.--SOIL FEATURES

(See text on page 246 for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In		In	In			
AmF:									
Amanda	---	> 80	---	---	---	0	Moderate	Moderate	Moderate.
BkB:									
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
BkC:									
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
BkD:									
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
BkE:									
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
BmB:									
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
Urban land	---	---	---	---		---	---	---	---
BmC:									
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
Urban land	---	---	---	---		---	---	---	---
BmD:									
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
Urban land	---	---	---	---		---	---	---	---
BpF:									
Bethesda	---	> 80	---	---	---	0	Moderate	Moderate	High.
BsC2:									
Bogart	---	> 80	---	---	---	0	Moderate	Low	High.
BtA:									
Bogart	---	> 80	---	---	---	0	Moderate	Moderate	High.
BtB:									
Bogart	---	> 60	---	---	---	0	Moderate	Moderate	High.
BtC:									
Bogart	---	> 80	---	---	---	0	Moderate	Low	High.
CaA:									
Calcutta	Fragipan	20-30	15-30	---	---	0	High	Moderate	High.
CcB:									
Canfield	Fragipan	18-30	15-37	---	---	0	High	Moderate	Moderate.
CcC:									
Canfield	Fragipan	18-30	15-37	---	---	0	High	Moderate	Moderate.
CcD:									
Canfield	Fragipan	18-30	15-37	---	---	0	High	Moderate	Moderate.
CcE:									
Canfield	Fragipan	18-30	15-37	---	---	0	High	Moderate	Moderate.
CeA:									
Carlisle	---	> 80	---	---	---	43-54	High	High	Low.
CfD2:									
Chili	---	> 80	---	---	---	0	Moderate	Low	High.
ChA:									
Chili	---	> 80	---	---	---	0	Moderate	Low	High.
ChB:									
Chili	---	> 80	---	---	---	0	Moderate	Low	High.
ChC:									
Chili	---	> 80	---	---	---	0	Moderate	Low	High.
CmB:									
Conotton	---	> 80	---	---	---	0	Moderate	Low	High.

TABLE 32.--SOIL FEATURES--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In		In	In			
CmC:									
Conotton	---	> 80	---	---	---	0	Moderate	Low	High.
CoB:									
Coshocton	Bedrock (lithic)	40-120	---	---	---	0	High	High	High.
CoC:									
Coshocton	Bedrock (lithic)	40-120	---	---	---	0	High	High	High.
CoD:									
Coshocton	Bedrock (lithic)	40-120	---	---	---	0	High	High	High.
DAM:									
Dam	---	---	---	---		---	---	---	---
DgA:									
Doles	Fragipan	20-30	14-36	---	---	0	High	High	High.
ErC:									
Ernest	Fragipan	20-36	10-40	---	---	0	Moderate	Moderate	Moderate.
ErD:									
Ernest	Fragipan	20-36	10-40	---	---	0	Moderate	Moderate	Moderate.
FbB:									
Fairpoint	---	> 80	---	---	---	0	Moderate	High	Moderate.
FbD:									
Fairpoint	---	> 80	---	---	---	0	Moderate	High	Moderate.
FbF:									
Fairpoint	---	> 80	---	---	---	0	Moderate	High	Moderate.
FcB:									
Fairpoint	---	> 80	---	---	---	0	Moderate	High	Moderate.
FcD:									
Fairpoint	---	> 80	---	---	---	0	Moderate	High	Moderate.
FdA:									
Fitchville	---	> 80	---	---	---	0	High	High	Moderate.
FdB:									
Fitchville	---	> 80	---	---	---	0	High	High	Moderate.
FeA:									
Fluvaquents	---	> 80	---	---		---	---	---	---
FnC2:									
Fredericktown	---	> 80	---	---	---	0	Moderate	Low	High.
FnD2:									
Fredericktown	---	> 80	---	---	---	0	Moderate	Low	High.
FoB:									
Fredericktown	---	> 80	---	---	---	0	Moderate	Low	High.
FrA:									
Frenchtown	Fragipan	18-38	11-40	---	---	0	High	High	High.
GaB:									
Gavers	---	> 80	---	---	---	0	High	High	High.
GeC:									
Germano	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.
GeD:									
Germano	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.
GnB:									
Gilpin	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
GnC:									
Gilpin	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.
GnD:									
Gilpin	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.

TABLE 32.--SOIL FEATURES--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In		In	In			
GoC:									
Gilpin	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.
Coshocton	Bedrock (lithic)	40-80	---	---	---	0	High	High	High.
GoD:									
Gilpin	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.
Coshocton	Bedrock (paralithic)	40-80	---	---	---	0	High	High	High.
GpC:									
Gilpin	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.
Coshocton	Bedrock (lithic)	40-80	---	---	---	0	High	High	High.
Urban land	---	---	---	---		---	---	---	---
GrB:									
Glenford	---	> 80	---	---	---	0	High	Moderate	Moderate.
GrC:									
Glenford	---	> 80	---	---	---	0	High	Moderate	Moderate.
GuC:									
Guernsey	Bedrock (paralithic)	50-120	---	---	---	0	High	High	Moderate.
GuC2:									
Guernsey	Bedrock (paralithic)	50-120	---	---	---	0	High	High	Moderate.
GuD:									
Guernsey	Bedrock (paralithic)	50-120	---	---	---	0	High	High	Moderate.
HeB:									
Hazleton	Bedrock (lithic)	40-72	---	---	---	0	Moderate	Low	High.
HeC:									
Hazleton	Bedrock (lithic)	40-72	---	---	---	0	Moderate	Low	High.
HeD:									
Hazleton	Bedrock (lithic)	40-72	---	---	---	0	Moderate	Low	High.
HeE:									
Hazleton	Bedrock (lithic)	40-72	---	---	---	0	Moderate	Low	High.
HfF:									
Hazleton	Bedrock (lithic)	40-72	---	---	---	0	Moderate	Low	High.
Rock outcrop	---	---	---	---		---	---	---	---
HgF:									
Hazleton	Bedrock (lithic)	40-72	---	---	---	0	Moderate	Low	High.
Westmoreland	Bedrock (lithic)	40-120	---	---	---	0	Moderate	Low	High.
HkA:									
Holly	Bedrock (lithic)	70-120	---	---	---	0	High	High	Moderate.
HlB:									
Homewood	Fragipan	20-30	16-58	---	---	0	Moderate	Low	Moderate.
	Bedrock (paralithic)	60-120	---	---					
HmA:									
Homeworth	Strongly contrasting textural stratification	30-50	30-50	Noncemented	---	0	High	High	Moderate.
HmB:									
Homeworth	Strongly contrasting textural stratification	30-50	30-50	Noncemented	---	0	High	High	Moderate.
HoA:									
Homeworth	Strongly contrasting textural stratification	30-50	30-50	Noncemented	---	0	High	High	Moderate.
HoB:									
Homeworth	Strongly contrasting textural stratification	30-50	30-50	Noncemented	---	0	High	High	Moderate.
JwA:									
Jimtown	---	> 80	---	---	---	0	High	High	High.

TABLE 32.--SOIL FEATURES--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In		In	In			
JwB:									
Jimtown	---	> 80	---	---	---	0	High	High	High.
KeB:									
Keene	Bedrock (paralithic)	40-120	---	---	---	0	High	High	High.
KnB:									
Kensington	Bedrock (paralithic)	40-60	---	---	---	0	Moderate	Moderate	Moderate.
KnC:									
Kensington	Bedrock (paralithic)	40-60	---	---	---	0	Moderate	Moderate	Moderate.
KnD:									
Kensington	Bedrock (paralithic)	40-60	---	---	---	0	Moderate	Moderate	Moderate.
LbA:									
Lobdell	---	> 76	---	---	---	0	High	Low	Moderate.
LnA:									
Lorain	---	> 62	---	---	---	0	High	High	Moderate.
McB:									
Mechanicsburg	Bedrock (paralithic)	40-72	---	---	---	0	Moderate	Moderate	Moderate.
McC:									
Mechanicsburg	Bedrock (paralithic)	40-72	---	---	---	0	Moderate	Moderate	Moderate.
MnB:									
Morristown	---	> 80	---	---	---	0	Moderate	Moderate	Low.
MnD:									
Morristown	---	> 80	---	---	---	0	Moderate	Moderate	Low.
MoB:									
Morristown	---	> 80	---	---	---	0	Moderate	Moderate	Low.
MoD:									
Morristown	---	> 80	---	---	---	0	Moderate	Moderate	Low.
OdA:									
Olmsted	---	> 60	---	---	---	0	High	High	High.
Valley	---	> 80	---	---	---	0	High	High	High.
OmB:									
Omulga	Fragipan	18-36	13-36	---	---	0	High	Moderate	High.
OmC:									
Omulga	Fragipan	18-36	13-36	---	---	0	High	Moderate	High.
OrA:									
Orrville	---	> 80	---	---	---	0	High	High	Moderate.
Pg:									
Pits	---	---	---	---		---	---	---	---
RaB:									
Rainsboro	Fragipan	20-30	10-40	---	---	0	High	Moderate	High.
RaC2:									
Rainsboro	Fragipan	20-30	10-40	---	---	0	High	Moderate	High.
RbC:									
Rainsboro	Fragipan	20-30	10-40	---	---	0	High	Moderate	High.
ReA:									
Ravenna	Fragipan	14-30	15-45	---	---	0	High	High	High.
ReB:									
Ravenna	Fragipan	14-30	15-45	---	---	0	High	High	High.
RhD:									
Richland	---	> 80	---	---	---	0	Moderate	Moderate	Moderate.
RhE:									
Richland	---	> 80	---	---	---	0	Moderate	Moderate	Moderate.
RsB:									
Rittman	Fragipan	18-36	10-40	---	---	0	High	High	High.
RsC:									
Rittman	Fragipan	18-36	10-40	---	---	0	High	High	High.

TABLE 32.--SOIL FEATURES--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In		In	In			
RsD2:									
Rittman	Fragipan	18-36	10-40	---	---	0	High	High	High.
TeB:									
Teegarden	Fragipan	18-30	10-24	---	---	0	Moderate	Moderate	Moderate.
	Bedrock (paralithic)	60-120	---	---					
TeC:									
Teegarden	Fragipan	18-30	9-24	---	---	0	Moderate	Moderate	Moderate.
	Bedrock (paralithic)	60-120	---	---					
TeC2:									
Teegarden	Fragipan	18-30	9-24	---	---	0	Moderate	Moderate	Moderate.
	Bedrock (paralithic)	60-120	---	---					
ToA:									
Tioga	---	> 80	---	---	---	0	Moderate	Low	Moderate.
Ua:									
Udorthents	---	> 80	---	---	---	0	Moderate	Moderate	Moderate.
Ub:									
Udorthents	---	> 80	---	---	---	0	High	Moderate	Moderate.
Uc:									
Udorthents	---	> 80	---	---	---	0	Moderate	Moderate	Moderate.
Pits	---	---	---	---		---	---	---	---
UkC2:									
Upshur	Bedrock (paralithic)	40-72	---	---	---	0	High	High	Moderate.
Berks	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.
UkD2:									
Upshur	Bedrock (paralithic)	40-72	---	---	---	0	High	High	Moderate.
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
UkE2:									
Upshur	Bedrock (paralithic)	40-72	---	---	---	0	High	High	Moderate.
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
Ur:									
Urban land	---	---	---	---		---	---	---	---
UtB:									
Urban land	---	---	---	---		---	---	---	---
Canfield	Fragipan	18-30	15-37	---	---	0	High	Moderate	Moderate.
UtC:									
Urban land	---	---	---	---		---	---	---	---
Canfield	Fragipan	18-30	15-37	---	---	0	High	Moderate	Moderate.
UvB:									
Urban land	---	---	---	---		---	---	---	---
Chili	---	> 80	---	---	---	0	Moderate	Low	High.
VaA:									
Valley	---	> 80	---	---	---	0	High	High	High.
VbA:									
Valley	---	> 80	---	---	---	0	High	High	High.
VcA:									
Valley	---	> 80	---	---	---	0	High	High	High.
Lorain	---	> 62	---	---	---	0	High	High	Moderate.
VnB:									
Vandergrift	Bedrock (paralithic)	40-80	---	---	---	0	High	High	Moderate.

TABLE 32.--SOIL FEATURES--Continued

Map symbol and soil name	Restrictive layer: Kind	Restrictive layer: Depth to top	Restrictive layer: Thickness	Restrictive layer: Hardness	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In		In	In			
VnC:									
Vandergrift	Bedrock (paralithic)	40-80	---	---	---	0	High	High	Moderate.
W:									
Water	---	---	---	---		---	---	---	---
WaA:									
Wadsworth	Fragipan	18-30	10-32	---	---	0	High	High	High.
WaB:									
Wadsworth	Fragipan	18-30	10-32	---	---	0	High	High	High.
WkE:									
Westmoreland	Bedrock (paralithic)	40-120	---	---	---	0	Moderate	Low	High.
Berks	Bedrock (lithic)	20-40	---	---	---	0	Moderate	Low	High.
WkF:									
Westmoreland	Bedrock (paralithic)	40-120	---	---	---	0	Moderate	Low	High.
Berks	Bedrock (paralithic)	20-40	---	---	---	0	Moderate	Low	High.
WmC:									
Westmoreland	Bedrock (paralithic)	40-120	---	---	---	0	Moderate	Low	High.
Coshocton	Bedrock (paralithic)	40-120	---	---	---	0	High	High	High.
WmD:									
Westmoreland	Bedrock (paralithic)	40-120	---	---	---	0	Moderate	Low	High.
Coshocton	Bedrock (paralithic)	40-120	---	---	---	0	High	High	High.
WoA:									
Wick	---	> 80	---	---	---	0	High	High	Low.
ZeA:									
Zepernick	---	> 80	---	---	---	0	High	High	High.

TABLE 33.--CLASSIFICATION OF THE SOILS

9th Edition of Keys to Soil Taxonomy

(An asterisk in the first column indicates a taxadjunct to the series. See text on page 248 for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Amanda	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Berks	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Bethesda	Loamy-skeletal, mixed, active, acid, mesic Typic Udorthents
Bogart	Fine-loamy, mixed, active, mesic Aquic Hapludalfs
Calcutta	Fine-silty, mixed, superactive, mesic Aeric Fragiaquults
*Canfield	Fine-loamy, mixed, active, mesic Oxyaquic Fragiudalfs
Carlisle	Euic, mesic Typic Haplosaprists
Chili	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Conotton	Loamy-skeletal, mixed, active, mesic Typic Hapludalfs
Coshocton	Fine-loamy, mixed, active, mesic Aquultic Hapludalfs
Doles	Fine-silty, mixed, active, mesic Aeric Fragiaqualfs
Ernest	Fine-loamy, mixed, superactive, mesic Aquic Fragiudults
Fairpoint	Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents
Fitchville	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Fluvaquents, silty	Fluvaquents
Fredericktown	Fine-loamy, mixed, superactive, mesic Ultic Hapludalfs
Frenchtown	Fine-loamy, mixed, active, mesic Typic Fragiaqualfs
Gavers	Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs
Germano	Coarse-loamy, mixed, active, mesic Typic Hapludults
Gilpin	Fine-loamy, mixed, active, mesic Typic Hapludults
Glenford	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
Guernsey	Fine, mixed, superactive, mesic Aquic Hapludalfs
*Hazleton	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Holly	Fine-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Homewood	Fine-loamy, mixed, superactive, mesic Oxyaquic Fragiudalfs
Homeworth	Fine-loamy, mixed, superactive, mesic Aeric Epiaqualfs
Jimtown	Fine-loamy, mixed, superactive, mesic Aeric Endoaqualfs
Keene	Fine-silty, mixed, superactive, mesic Aquic Hapludalfs
Kensington	Fine-loamy, mixed, active, mesic Aquic Hapludults
Lobdell	Fine-loamy, mixed, active, mesic Fluvaquentic Eutrudepts
Lorain	Fine, illitic, mesic Mollic Epiaqualfs
Mechanicsburg	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Morristown	Loamy-skeletal, mixed, active, calcareous, mesic Typic Udorthents
Olmsted	Fine-loamy, mixed, active, mesic Mollic Endoaqualfs
Omulga	Fine-silty, mixed, active, mesic Oxyaquic Fragiudalfs
Orrville	Fine-loamy, mixed, active, nonacid, mesic Fluventic Endoaquepts
Rainsboro	Fine-silty, mixed, superactive, mesic Oxyaquic Fragiudalfs
Ravenna	Fine-loamy, mixed, active, mesic Aeric Fragiaqualfs
Richland	Fine-loamy, mixed, active, mesic Oxyaquic Hapludalfs
Rittman	Fine-loamy, mixed, active, mesic Aquic Fragiudalfs
Teegarden	Fine-loamy, mixed, active, mesic Aquic Fragiudalfs
Tioga	Coarse-loamy, mixed, superactive, mesic Dystric Fluventic Eutrudepts
Udorthents	Udorthents
Udorthents, loamy	Udorthents
Udorthents, refuse substratum	Udorthents
Upshur	Fine, mixed, superactive, mesic Typic Hapludalfs
Valley	Fine, mixed, active, nonacid, mesic Typic Endoaquepts
Vandergrift	Fine, mixed, superactive, mesic Aquic Hapludalfs
Wadsworth	Fine-silty, mixed, active, mesic Aeric Fragiaqualfs
Westmoreland	Fine-loamy, mixed, active, mesic Ultic Hapludalfs
Wick	Fine-silty, mixed, superactive, nonacid, mesic Fluvaquentic Endoaquepts
Zepernick	Fine-silty, mixed, superactive, acid, mesic Fluventic Endoaquepts

TABLE 34.--INTERPRETIVE GROUPS

(Unless otherwise indicated, a complex is treated as a single management unit in the 'Land capability' column. See pages 213-227 for definitions of the groups. Absence of an entry indicates that the map unit is not suited to the intended use or is not rated.)

Map symbol and soil name	Land capability classification (p. 224)	Pasture and hayland suitability group (p. 224)	Prime farmland (p. 213}	Hydric (p.215)
AmF:	7e		Not prime farmland	
Amanda		H-1		No
BkB:	2e		All areas are prime farmland	
Berks		F-1		No
BkC:	3e		Not prime farmland	
Berks		F-1		No
BkD:	4e		Not prime farmland	
Berks		F-1		No
BkE:	6e		Not prime farmland	
Berks		F-2		No
BmB:	---		Not prime farmland	
Berks		Not rated		No
Urban Land		Not rated		Unranked
BmC:	---		Not prime farmland	
Berks		Not rated		No
Urban Land		Not rated		Unranked
BmD:	---		Not prime farmland	
Berks		Not rated		No
Urban Land		Not rated		Unranked
BpF:	7e		Not prime farmland	
Bethesda		H-1		No
BsC2:	3e		Not prime farmland	
Bogart		A-1		No
BtA:	1		All areas are prime farmland	
Bogart		A-1		No
BtB:	2e		All areas are prime farmland	
Bogart		A-1		No
BtC:	3e		Not prime farmland	
Bogart		A-1		No
CaA:	2w		Prime farmland if drained	
Calcutta		D-1		No
CcB:	2e		All areas are prime farmland	
Canfield		F-3		No

TABLE 34.--INTERPRETIVE GROUPS--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland	Hydric
CcC:				
Canfield	3e	F-3	Not prime farmland	No
CcD:				
Canfield	4e	F-3	Not prime farmland	No
CcE:				
Canfield	6e	F-4	Not prime farmland	No
CeA:				
Carlisle	5w	D-1	Not prime farmland	Yes
CfD2:				
Chili	4e	A-1	Not prime farmland	No
ChA:				
Chili	2s	A-1	All areas are prime farmland	No
ChB:				
Chili	2e	A-1	All areas are prime farmland	No
ChC:				
Chili	3e	A-1	Not prime farmland	No
CmB:				
Conotton	3s	B-1	All areas are prime farmland	No
CmC:				
Conotton	4e	B-1	Not prime farmland	No
CoB:				
Coshocton	2e	A-6	All areas are prime farmland	No
CoC:				
Coshocton	3e	A-6	Not prime farmland	No
CoD:				
Coshocton	4e	A-2	Not prime farmland	No
DAM:				
Dam	---	Not rated	Not prime farmland	Unranked
DgA:				
Doles	2w	C-1	Prime farmland if drained	No
ErC:				
Ernest	3e	F-3	Not prime farmland	No
ErD:				
Ernest	4e	F-3	Not prime farmland	No
FbB:				
Fairpoint	4s	E-3	Not prime farmland	No
FbD:				
Fairpoint	6s	E-3	Not prime farmland	No

TABLE 34.--INTERPRETIVE GROUPS--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland	Hydric
FbF:	7e		Not prime farmland	
Fairpoint		H-1		No
FcB:	3s		Not prime farmland	
Fairpoint		B-4		No
FcD:	4s		Not prime farmland	
Fairpoint		B-4		No
FdA:	2w		Prime farmland if drained	
Fitchville		C-1		No
FdB:	2e		Prime farmland if drained	
Fitchville		C-1		No
FeA:	5w		Not prime farmland	
Fluvaquents		Not rated		Yes
FnC2:	3e		Not prime farmland	
Fredericktown		B-1		No
FnD2:	4e		Not prime farmland	
Fredericktown		A-2		No
FoB:	2e		All areas are prime farmland	
Fredericktown		A-1		No
FrA:	3w		Prime farmland if drained	
Frenchtown		C-1		Yes
GaB:	2e		Prime farmland if drained	
Gavers		C-1		No
GeC:	3e		Not prime farmland	
Germano		F-1		No
GeD:	4e		Not prime farmland	
Germano		F-1		No
GnB:	2e		All areas are prime farmland	
Gilpin		F-1		No
GnC:	3e		Not prime farmland	
Gilpin		F-1		No
GnD:	4e		Not prime farmland	
Gilpin		F-1		No
GoC:	3e		Not prime farmland	
Gilpin		F-1		No
Coshocton		A-6		No

TABLE 34.--INTERPRETIVE GROUPS--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland	Hydric
GoD:	4e		Not prime farmland	
Gilpin		F-1		No
Coshocton		A-2		No
GpC:	---		Not prime farmland	
Gilpin		Not rated		No
Coshocton		Not rated		No
Urban Land		Not rated		Unranked
GrB:	2e		All areas are prime farmland	
Glenford		A-6		No
GrC:	3e		Not prime farmland	
Glenford		A-6		No
GuC:	3e		Not prime farmland	
Guernsey		A-6		No
GuC2:	3e		Not prime farmland	
Guernsey		A-6		No
GuD:	4e		Not prime farmland	
Guernsey		A-2		No
HeB:	2e		All areas are prime farmland	
Hazleton		B-1		No
HeC:	3e		Not prime farmland	
Hazleton		B-1		No
HeD:	4e		Not prime farmland	
Hazleton		B-1		No
HeE:	6e		Not prime farmland	
Hazleton		B-2		No
HfF:	7e		Not prime farmland	
Hazleton		H-1		No
Rock Outcrop		Not rated		No
HgF:	7e		Not prime farmland	
Hazleton		H-1		No
Westmoreland		H-1		No
HkA:	3w		Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	
Holly		C-3		Yes

TABLE 34.--INTERPRETIVE GROUPS--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland	Hydric
HlB:	2e		All areas are prime farmland	
Homewood		F-3		No
HmA:	2w		Prime farmland if drained	
Homeworth		C-1		No
HmB:	2e		Prime farmland if drained	
Homeworth		C-2		No
HoA:	2w		Prime farmland if drained	
Homeworth		C-1		No
HoB:	2e		Prime farmland if drained	
Homeworth		C-2		No
JwA:	2w		Prime farmland if drained	
Jimtown		C-1		No
JwB:	2e		Prime farmland if drained	
Jimtown		C-1		No
KeB:	2e		All areas are prime farmland	
Keene		A-6		No
KnB:	2e		All areas are prime farmland	
Kensington		A-1		No
KnC:	3e		Not prime farmland	
Kensington		A-1		No
KnD:	4e		Not prime farmland	
Kensington		A-2		No
LbA:	1		All areas are prime farmland	
Lobdell		A-5		No
LnA:	3w		Prime farmland if drained	
Lorain		C-2		Yes
McB:	2e		All areas are prime farmland	
Mechanicsburg		A-1		No
McC:	3e		Not prime farmland	
Mechanicsburg		A-1		No
MnB:	3s		Not prime farmland	
Morristown		B-4		No
MnD:	4s		Not prime farmland	
Morristown		B-4		No

TABLE 34.--INTERPRETIVE GROUPS--Continued

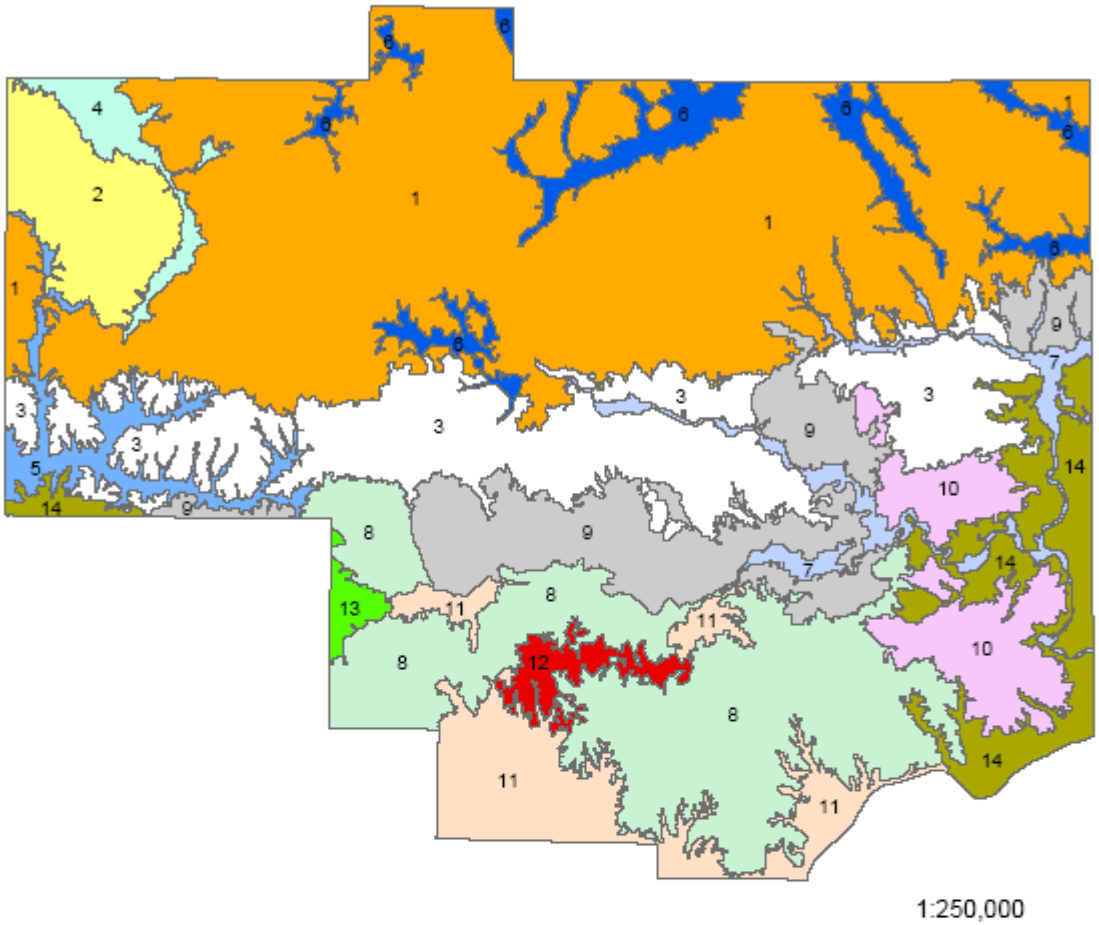
Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland	Hydric
MoB:	4s		Not prime farmland	
Morristown		E-3		No
MoD:	6s		Not prime farmland	
Morristown		E-3		No
OdA:	3w		Not prime farmland	
Olmsted		C-1		Yes
Valley		C-2		Yes
OmB:	2e		All areas are prime farmland	
Omulga		F-3		No
OmC:	3e		Not prime farmland	
Omulga		F-3		No
OrA:	2w		Prime farmland if drained	
Orrville		C-3		No
Pg:	---		Not prime farmland	
Pits		Not rated		Unranked
RaB:	2e		All areas are prime farmland	
Rainsboro		F-3		No
RaC2:	3e		Not prime farmland	
Rainsboro		F-3		No
RbC:	3e		Not prime farmland	
Rainsboro		F-3		No
ReA:	2w		Prime farmland if drained	
Ravenna		C-1		No
ReB:	2e		Prime farmland if drained	
Ravenna		C-1		No
RhD:	4e		Not prime farmland	
Richland		A-2		No
RhE:	6e		Not prime farmland	
Richland		A-3		No
RsB:	2e		All areas are prime farmland	
Rittman		F-3		No
RsC:	3e		Not prime farmland	
Rittman		F-3		No
RsD2:	4e		Not prime farmland	
Rittman		F-3		No

TABLE 34.--INTERPRETIVE GROUPS--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland	Hydric
TeB:	2e		All areas are prime farmland	
Teegarden		F-3		No
TeC:	3e		Not prime farmland	
Teegarden		F-3		No
TeC2:	3e		Not prime farmland	
Teegarden		F-3		No
ToA:	1		All areas are prime farmland	
Tioga		A-5		No
Ua:	---		Not prime farmland	
Udorthents		B-1		Unranked
Ub:	---		Not prime farmland	
Udorthents		A-6		Unranked
Uc:	---		Not prime farmland	
Udorthents		E-2		Unranked
Pits		Not rated		Unranked
UkC2:	4e		Not prime farmland	
Upshur		A-6		No
Berks		F-1		No
UkD2:	6e		Not prime farmland	
Upshur		A-2		No
Berks		F-1		No
UkE2:	7e		Not prime farmland	
Upshur		B-2		No
Berks		F-2		No
Ur:	---		Not prime farmland	
Urban Land		Not rated		Unranked
UtB:	---		Not prime farmland	
Urban Land		Not rated		Unranked
Canfield		Not rated		No
UtC:	---		Not prime farmland	
Urban Land		Not rated		Unranked
Canfield		Not rated		No
UvB:	---		Not prime farmland	
Urban Land		Not rated		Unranked
Chili		Not rated		No
VaA:	3w		Not prime farmland	
Valley		C-2		Yes

TABLE 34.--INTERPRETIVE GROUPS--Continued

Map symbol and soil name	Land capability classification	Pasture and hayland suitability group	Prime farmland	Hydric
VbA:	3w		Not prime farmland	
Valley		C-2		Yes
VcA:	3w		Not prime farmland	
Valley		C-2		Yes
Lorain		C-2		Yes
VnB:	2e		All areas are prime farmland	
Vandergrift		A-6		No
VnC:	3e		Not prime farmland	
Vandergrift		A-6		No
W:	---		Not prime farmland	
Water		Not rated		Unranked
WaA:	3w		Prime farmland if drained	
Wadsworth		C-1		No
WaB:	3e		Prime farmland if drained	
Wadsworth		C-1		No
WkE:	6e		Not prime farmland	
Westmoreland		A-3		No
Berks		F-2		No
WkF:	7e		Not prime farmland	
Westmoreland		H-1		No
Berks		H-1		No
WmC:	3e		Not prime farmland	
Westmoreland		A-1		No
Coshocton		A-6		No
WmD:	4e		Not prime farmland	
Westmoreland		A-2		No
Coshocton		A-2		No
WoA:	5w		Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season	
Wick		C-3		Yes
ZeA:	2w		Prime farmland if drained	
Zepernick		C-3		No



General Soil Map Columbiana County, Ohio

Soils on till plains, terraces, and flood plains

- 1 Canfield-Ravenna association
- 2 Rittman-Wadsworth association
- 3 Teegarden-Kensington-Gilpin association
- 4 Homeworth-Chili-Bogart association
- 5 Fredericktown-Zepernick-Wick association
- 6 Chili-Zepernick-Wick association
- 7 Tioga-Omulga-Rainsboro association

Soils on unglaciated uplands

- 8 Berks-Coshocton-Gilpin association
- 9 Fairpoint-Berks-Gilpin association
- 10 Berks-Gilpin-Coshocton association
- 11 Berks-Westmoreland-Gilpin association
- 12 Vandergrift-Berks-Upshur association
- 13 Westmoreland-Coshocton-Berks association
- 14 Hazelton-Westmoreland-Berks association