

Appendix O:
SOIL & ECONOMIC SURVEY REPORT
(Exhibit A-6.1)



**EXHIBIT A-6.1:
SOIL AND ECONOMIC SURVEY REPORT
RIVERBEND WIND ENERGY FACILITY**

Submitted by Atwell, LLC

On behalf of

MI Energy Developments, LLC
575 5th Ave, Suite 2501
New York, NY 10017

July 16, 2025



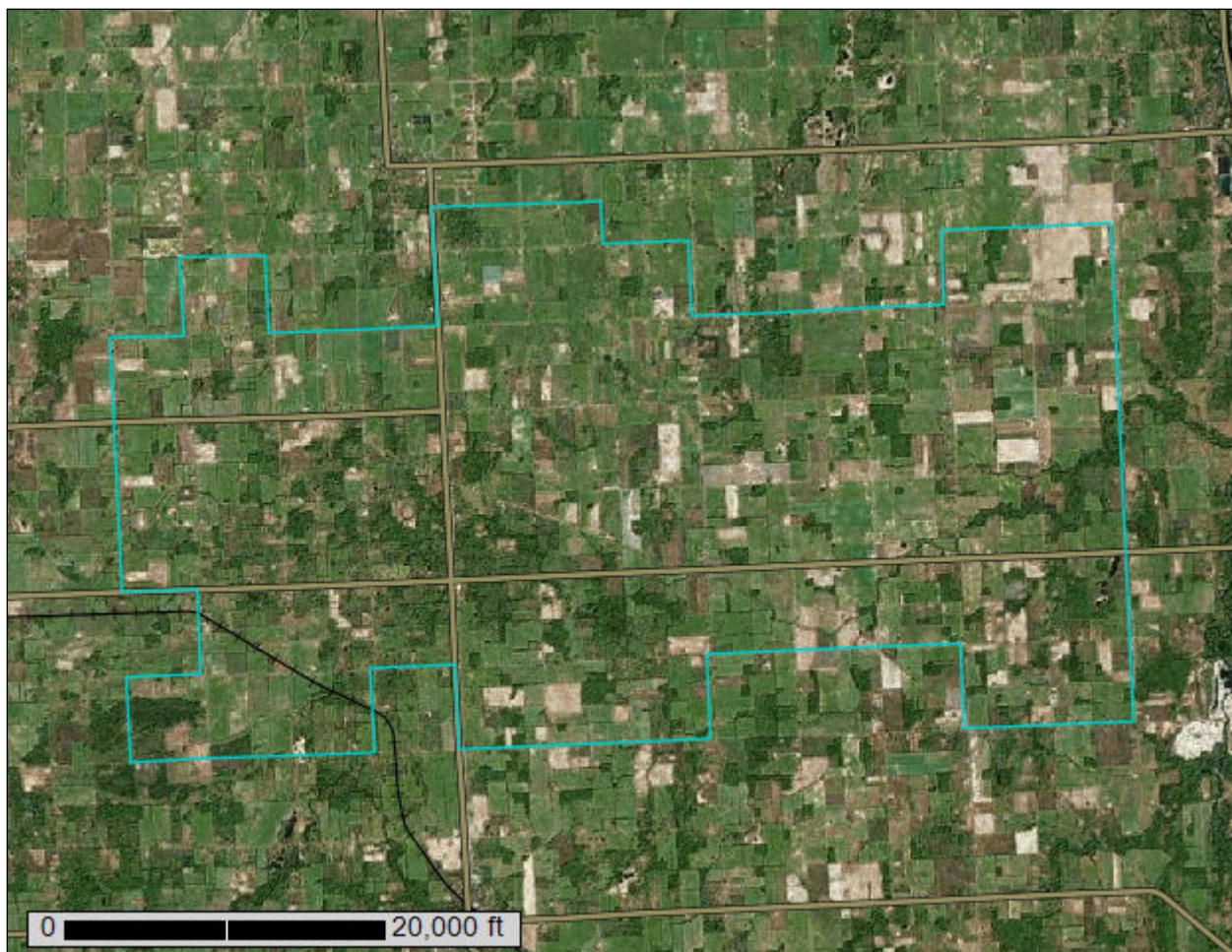
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Sanilac County, Michigan, and St. Clair County, Michigan**



June 12, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

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

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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 a 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.

Contents

Preface	2
How Soil Surveys Are Made	7
Soil Map	10
Soil Map.....	11
Legend.....	12
Map Unit Legend.....	14
Map Unit Descriptions.....	17
Sanilac County, Michigan.....	20
CcA0—Carlisle muck, 0 to 2 percent slopes.....	20
CdA0—Carlisle and Linwood mucks, 0 to 2 percent slopes.....	21
CgA1—Covert loamy sand, 0 to 2 percent slopes, slightly eroded.....	22
CvrabA—Conover loam, 0 to 3 percent slopes.....	23
CvracB—Conover-Williamstown loams, 0 to 6 percent slopes.....	25
EeA0—Epoufette and Ronald sandy loams, 0 to 2 percent slopes.....	27
GbA0—Gladwin and Palo sandy loams, 0 to 2 percent slopes.....	29
Gc—Gravel pit.....	30
IbA0—Iosco and Winegars sandy loams, 0 to 2 percent slopes.....	31
IcA0—Iosco sandy loam and Covert loamy sand, 0 to 2 percent slopes....	33
IcB1—Iosco sandy loam and Covert loamy sand, 2 to 7 percent slopes, slightly eroded.....	34
JaA0—Jeddo silty clay loam, 0 to 2 percent slopes.....	36
Jd—Jeddo silt loam.....	37
LdA0—Linwood muck, 0 to 2 percent slopes.....	38
LeA0—Linwood and Timakwa mucks, 0 to 2 percent slopes.....	39
Lm—Lamson fine sandy loam.....	41
MaB1—McBride fine sandy loam, 2 to 6 percent slopes, slightly eroded...	43
MbA1—McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded.....	44
MbB1—McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, slightly eroded.....	45
MbB3—McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, severely eroded.....	47
MbC1—McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, slightly eroded.....	49
MbC2—McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, moderately or severely eroded.....	51
MbD1—McBride sandy loam and Montcalm loamy sand, 15 to 25 percent slopes, slightly eroded.....	53
MbE3—McBride sandy loam and Montcalm loamy sand, 15+ percent slopes, moderately or severely eroded.....	55
MeA1—Mancelona loamy sand, 0 to 3 percent slopes, slightly eroded.....	57
MeB1—Mancelona loamy sand, 3 to 8 percent slopes, slightly eroded.....	58
MeB2—Mancelona loamy sand, 3 to 8 percent slopes, moderately eroded.....	59

Custom Soil Resource Report

MeC1—Mancelona loamy sand, 8 to 15 percent slopes, slightly eroded....	60
MfA1—Marlette loam, 0 to 2 percent slopes, slightly eroded.....	61
MfB1—Marlette loam, 2 to 6 percent slopes, slightly eroded.....	62
MfB2—Marlette loam, 2 to 6 percent slopes, moderately eroded.....	63
MfB3—Marlette loam, 2 to 6 percent slopes, severely eroded.....	64
MfC1—Marlette loam, 6 to 12 percent slopes, slightly eroded.....	65
MfC2—Marlette loam, 6 to 12 percent slopes, moderately eroded.....	66
MfC3—Marlette loam, 6 to 12 percent slopes, severely eroded.....	67
MfD1—Marlette loam, 12 to 18 percent slopes, slightly eroded.....	68
MfD2—Marlette loam, 12 to 18 percent slopes, moderately eroded.....	69
MfD3—Marlette loam, 12 to 18 percent slopes, severely eroded.....	70
MgA1—Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded.....	71
MgB1—Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded.....	72
MgB2—Marlette silt loam and loam, 2 to 6 percent slopes, moderately eroded.....	74
MgC1—Marlette silt loam and loam, 6 to 12 percent slopes, slightly eroded.....	75
MgC2—Marlette silt loam and loam, 6 to 12 percent slopes, moderately eroded.....	76
MhA1—Melita and Arenac loamy sands, 0 to 2 percent slopes, slightly eroded.....	77
MIA—Metamora sandy loam, 0 to 2 percent slopes.....	79
MnA1—Montcalm loamy sand, 0 to 2 percent slopes, slightly eroded.....	81
MnB1—Montcalm loamy sand, 2 to 6 percent slopes, slightly eroded.....	82
MnC1—Montcalm loamy sand, 6 to 12 percent slopes, slightly eroded.....	83
MnC2—Montcalm loamy sand, 6 to 12 percent slopes, moderately eroded.....	84
MnD1—Montcalm loamy sand, 12 to 18 percent slopes, slightly eroded....	85
MoB—Miami-Dighton sandy loams, 2 to 6 percent slopes.....	86
NaA1—Newaygo sandy loam, 0 to 2 percent slopes, slightly eroded.....	88
OaA0—Otisco loamy sand, 0 to 2 percent slopes.....	89
PcA0—Parkhill loam, 0 to 1 percent slopes.....	90
PdA0—Parkhill loam and clay loam, 0 to 2 percent slopes.....	91
PeA0—Parkhill loam and mucky loam, 0 to 2 percent slopes.....	92
RdA0—Roscommon mucky loamy sand, 0 to 2 percent slopes.....	93
ReA1—Grattan sand, 0 to 2 percent slopes, slightly eroded.....	94
ReB1—Grattan sand, 2 to 7 percent slopes, slightly eroded.....	95
ReC1—Grattan sand, 7 to 14 percent slopes, slightly eroded.....	96
ReD1—Grattan sand, 14+ percent slopes, slightly eroded.....	97
SbA0—Saverine and Iosco fine sandy loams, 0 to 2 percent slopes.....	98
SbB1—Saverine and Iosco fine sandy loams, 2 to 7 percent slopes, slightly eroded.....	100
SbB2—Saverine and Iosco fine sandy loams, 2 to 7 percent slopes, moderately eroded.....	102
SloacA—Sloan, frequently flooded, and Ceresco, occasionally flooded, soils, 0 to 3 percent slopes.....	103
TbA0—Tappan mucky loam, 0 to 2 percent slopes.....	106
TgA0—Tonkey and Bach fine sandy loams, 0 to 2 percent slopes.....	107
W—Water.....	109
WaA0—Wallkill loam, 0 to 2 percent slopes.....	109
WcA0—Washtenaw loam and silt loam, 0 to 2 percent slopes.....	110
WdA0—Washtenaw sandy loam and loam, 0 to 2 percent slopes.....	111

Custom Soil Resource Report

WpB—Wasepi-Boyer complex, loamy substratum, 0 to 6 percent slopes.....	112
St. Clair County, Michigan.....	115
Pc—Parkhill loam, 0 to 1 percent slopes.....	115
References	117

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various 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 observed and described many soil profiles. A soil profile 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 or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

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

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

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

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

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

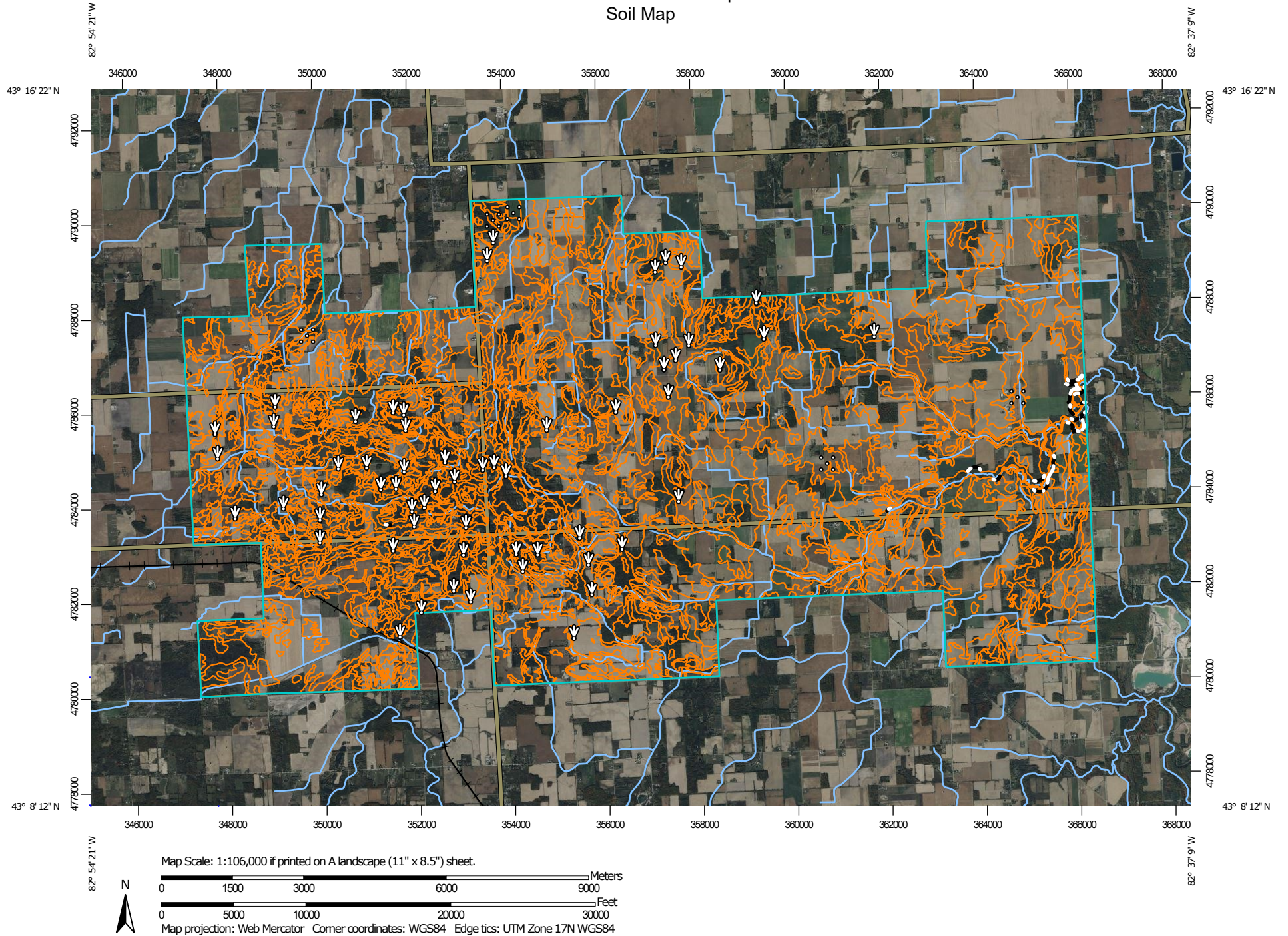
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at scales ranging from 1:15,800 to 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sanilac County, Michigan

Survey Area Data: Version 21, Aug 28, 2024

Soil Survey Area: St. Clair County, Michigan

Survey Area Data: Version 20, Aug 28, 2024

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 11, 2022—Oct 21, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CcA0	Carlisle muck, 0 to 2 percent slopes	6.0	0.0%
CdA0	Carlisle and Linwood mucks, 0 to 2 percent slopes	64.7	0.2%
CgA1	Covert loamy sand, 0 to 2 percent slopes, slightly eroded	32.2	0.1%
CvrabA	Conover loam, 0 to 3 percent slopes	10,798.6	27.9%
CvraC	Conover-Williamstown loams, 0 to 6 percent slopes	357.4	0.9%
EeA0	Epoufette and Ronald sandy loams, 0 to 2 percent slopes	21.1	0.1%
GbA0	Gladwin and Palo sandy loams, 0 to 2 percent slopes	1.0	0.0%
Gc	Gravel pit	31.4	0.1%
IbA0	Iosco and Winegars sandy loams, 0 to 2 percent slopes	228.6	0.6%
IcA0	Iosco sandy loam and Covert loamy sand, 0 to 2 percent slopes	303.3	0.8%
IcB1	Iosco sandy loam and Covert loamy sand, 2 to 7 percent slopes, slightly eroded	8.1	0.0%
JaA0	Jeddo silty clay loam, 0 to 2 percent slopes	919.8	2.4%
Jd	Jeddo silt loam	28.8	0.1%
LdA0	Linwood muck, 0 to 2 percent slopes	306.8	0.8%
LeA0	Linwood and Timakwa mucks, 0 to 2 percent slopes	417.0	1.1%
Lm	Lamson fine sandy loam	33.6	0.1%
MaB1	McBride fine sandy loam, 2 to 6 percent slopes, slightly eroded	7.3	0.0%
MbA1	McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded	319.8	0.8%
MbB1	McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, slightly eroded	389.4	1.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MbB3	McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, severely eroded	22.5	0.1%
MbC1	McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, slightly eroded	107.4	0.3%
MbC2	McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, moderately or severely eroded	1.4	0.0%
MbD1	McBride sandy loam and Montcalm loamy sand, 15 to 25 percent slopes, slightly eroded	48.1	0.1%
MbE3	McBride sandy loam and Montcalm loamy sand, 15+ percent slopes, moderately or severely eroded	12.2	0.0%
MeA1	Mancelona loamy sand, 0 to 3 percent slopes, slightly eroded	165.2	0.4%
MeB1	Mancelona loamy sand, 3 to 8 percent slopes, slightly eroded	30.9	0.1%
MeB2	Mancelona loamy sand, 3 to 8 percent slopes, moderately eroded	15.1	0.0%
MeC1	Mancelona loamy sand, 8 to 15 percent slopes, slightly eroded	15.6	0.0%
MfA1	Marlette loam, 0 to 2 percent slopes, slightly eroded	1,651.0	4.3%
MfB1	Marlette loam, 2 to 6 percent slopes, slightly eroded	1,185.1	3.1%
MfB2	Marlette loam, 2 to 6 percent slopes, moderately eroded	29.2	0.1%
MfB3	Marlette loam, 2 to 6 percent slopes, severely eroded	25.4	0.1%
MfC1	Marlette loam, 6 to 12 percent slopes, slightly eroded	268.9	0.7%
MfC2	Marlette loam, 6 to 12 percent slopes, moderately eroded	61.7	0.2%
MfC3	Marlette loam, 6 to 12 percent slopes, severely eroded	10.6	0.0%
MfD1	Marlette loam, 12 to 18 percent slopes, slightly eroded	39.4	0.1%
MfD2	Marlette loam, 12 to 18 percent slopes, moderately eroded	1.1	0.0%
MfD3	Marlette loam, 12 to 18 percent slopes, severely eroded	6.9	0.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MgA1	Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded	1,407.0	3.6%
MgB1	Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded	567.8	1.5%
MgB2	Marlette silt loam and loam, 2 to 6 percent slopes, moderately eroded	123.5	0.3%
MgC1	Marlette silt loam and loam, 6 to 12 percent slopes, slightly eroded	31.3	0.1%
MgC2	Marlette silt loam and loam, 6 to 12 percent slopes, moderately eroded	11.4	0.0%
MhA1	Melita and Arenac loamy sands, 0 to 2 percent slopes, slightly eroded	61.1	0.2%
MIA	Metamora sandy loam, 0 to 2 percent slopes	7.8	0.0%
MnA1	Montcalm loamy sand, 0 to 2 percent slopes, slightly eroded	28.6	0.1%
MnB1	Montcalm loamy sand, 2 to 6 percent slopes, slightly eroded	36.6	0.1%
MnC1	Montcalm loamy sand, 6 to 12 percent slopes, slightly eroded	9.2	0.0%
MnC2	Montcalm loamy sand, 6 to 12 percent slopes, moderately eroded	1.0	0.0%
MnD1	Montcalm loamy sand, 12 to 18 percent slopes, slightly eroded	45.1	0.1%
MoB	Miami-Dighton sandy loams, 2 to 6 percent slopes	0.8	0.0%
NaA1	Newaygo sandy loam, 0 to 2 percent slopes, slightly eroded	3.5	0.0%
OaA0	Otisco loamy sand, 0 to 2 percent slopes	1.7	0.0%
PcA0	Parkhill loam, 0 to 1 percent slopes	8,435.2	21.8%
PdA0	Parkhill loam and clay loam, 0 to 2 percent slopes	6,581.1	17.0%
PeA0	Parkhill loam and mucky loam, 0 to 2 percent slopes	1,305.9	3.4%
RdA0	Roscommon mucky loamy sand, 0 to 2 percent slopes	36.4	0.1%
ReA1	Grattan sand, 0 to 2 percent slopes, slightly eroded	107.9	0.3%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ReB1	Grattan sand, 2 to 7 percent slopes, slightly eroded	133.0	0.3%
ReC1	Grattan sand, 7 to 14 percent slopes, slightly eroded	67.3	0.2%
ReD1	Grattan sand, 14+ percent slopes, slightly eroded	2.6	0.0%
SbA0	Saverine and losco fine sandy loams, 0 to 2 percent slopes	453.7	1.2%
SbB1	Saverine and losco fine sandy loams, 2 to 7 percent slopes, slightly eroded	59.3	0.2%
SbB2	Saverine and losco fine sandy loams, 2 to 7 percent slopes, moderately eroded	29.5	0.1%
SloacA	Sloan, frequently flooded, and Ceresco, occasionally flooded, soils, 0 to 3 percent slopes	418.5	1.1%
TbA0	Tappan mucky loam, 0 to 2 percent slopes	303.7	0.8%
TgA0	Tonkey and Bach fine sandy loams, 0 to 2 percent slopes	190.4	0.5%
W	Water	25.2	0.1%
WaA0	Wallkill loam, 0 to 2 percent slopes	90.2	0.2%
WcA0	Washtenaw loam and silt loam, 0 to 2 percent slopes	96.9	0.3%
WdA0	Washtenaw sandy loam and loam, 0 to 2 percent slopes	30.9	0.1%
WpB	Wasepi-Boyer complex, loamy substratum, 0 to 6 percent slopes	4.2	0.0%
Subtotals for Soil Survey Area		38,681.1	100.0%
Totals for Area of Interest		38,682.2	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Pc	Parkhill loam, 0 to 1 percent slopes	0.9	0.0%
Subtotals for Soil Survey Area		0.9	0.0%
Totals for Area of Interest		38,682.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

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

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

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

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

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

Custom Soil Resource Report

The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 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. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Sanilac County, Michigan

CcA0—Carlisle muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69w9

Elevation: 740 to 770 feet

Mean annual precipitation: 30 to 31 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Carlisle and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carlisle

Setting

Landform: Moraines, flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material and/or woody organic material

Typical profile

Oa1 - 0 to 15 inches: muck

Oa2 - 15 to 25 inches: muck

Oa3 - 25 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

CdA0—Carlisle and Linwood mucks, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69wb

Elevation: 600 to 840 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Carlisle and similar soils: 60 percent

Linwood and similar soils: 40 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carlisle

Setting

Landform: Flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material and/or woody organic material

Typical profile

Oa1 - 0 to 15 inches: muck

Oa2 - 15 to 25 inches: muck

Oa3 - 25 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Description of Linwood

Setting

Landform: Flats on glacial drainage channels

Custom Soil Resource Report

Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Woody organic material over loamy till

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 25 inches: muck
Oa3 - 25 to 29 inches: muck
Cg - 29 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very high (about 17.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

CgA1—Covert loamy sand, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3l
Elevation: 580 to 790 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 137 to 179 days
Farmland classification: Not prime farmland

Map Unit Composition

Covert and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Covert

Setting

Landform: Beach ridges on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bs1 - 6 to 12 inches: sand

Bs2 - 12 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

CvrabA—Conover loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2y14k

Elevation: 580 to 850 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 135 to 210 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Conover and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conover

Setting

Landform: Recessionial moraines, deltas, glacial drainage channels, wave-worked till plains

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Loamy till over dense loamy till

Typical profile

Ap - 0 to 8 inches: loam

Bw - 8 to 12 inches: loam

Bt - 12 to 26 inches: clay loam

BC - 26 to 31 inches: loam

C - 31 to 40 inches: loam

Cd - 40 to 79 inches: loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 29 to 64 inches to densic material

Drainage class: Somewhat poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)

Depth to water table: About 7 to 14 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Gypsum, maximum content: 1 percent

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 9 percent

Landform: Glacial drainage channels, deltas, recessional moraines, wave-worked till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Interfluve

Microfeatures of landform position: Open depressions

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Metamora, dense subsoil

Percent of map unit: 7 percent

Landform: Deltas, glacial drainage channels, wave-worked till plains, recessional moraines

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Williamstown

Percent of map unit: 4 percent

Landform: Glacial drainage channels, deltas, recessional moraines, wave-worked till plains

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Interfluve

Microfeatures of landform position: Rises

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

CvracB—Conover-Williamstown loams, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2y14l

Elevation: 580 to 870 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 135 to 210 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Conover and similar soils: 55 percent

Williamstown and similar soils: 25 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conover

Setting

Landform: Wave-worked till plains, glacial drainage channels, deltas, recessional moraines

Landform position (two-dimensional): Footslope, backslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy till over dense loamy till

Typical profile

Ap - 0 to 8 inches: loam

Bw - 8 to 12 inches: loam

Bt - 12 to 26 inches: clay loam

BC - 26 to 31 inches: loam

C - 31 to 40 inches: loam

Cd - 40 to 79 inches: loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 29 to 64 inches to densic material

Custom Soil Resource Report

Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: About 7 to 14 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Williamstown

Setting

Landform: Recessionial moraines, deltas, glacial drainage channels, wave-worked till plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Rises
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till over dense loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bw - 7 to 13 inches: loam
Bt - 13 to 27 inches: clay loam
C - 27 to 37 inches: loam
Cd - 37 to 79 inches: loam

Properties and qualities

Slope: 4 to 6 percent
Depth to restrictive feature: 24 to 55 inches to densic material
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 14 to 25 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D

Custom Soil Resource Report

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 13 percent

Landform: Recessionial moraines, deltas, glacial drainage channels, wave-worked till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Interfluve

Microfeatures of landform position: Open depressions

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Metamora, dense subsoil

Percent of map unit: 7 percent

Landform: Glacial drainage channels, deltas, recessionial moraines, wave-worked till plains

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

EeA0—Epoufette and Ronald sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69ws

Elevation: 590 to 840 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Epoufette and similar soils: 55 percent

Ronald and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Epoufette

Setting

Landform: End moraines, deltas, beaches

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

Bg - 7 to 16 inches: gravelly loamy sand

Btg - 16 to 20 inches: gravelly sandy loam

BC - 20 to 30 inches: gravelly sand

2Cg - 30 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

Description of Ronald

Setting

Landform: Deltas, end moraines, beaches

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 10 inches: sandy loam

Btg1 - 10 to 18 inches: clay loam

Btg2 - 18 to 29 inches: clay loam

BC - 29 to 35 inches: sandy clay loam

2Cg - 35 to 80 inches: stratified coarse sand to gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

GbA0—Gladwin and Palo sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69wy

Elevation: 610 to 860 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Gladwin and similar soils: 60 percent

Palo and similar soils: 40 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gladwin

Setting

Landform: Beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

E1 - 7 to 12 inches: loamy sand

E2 - 12 to 28 inches: sand

Bt - 28 to 36 inches: gravelly sandy loam

2Cg - 36 to 80 inches: stratified very gravelly sand to gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)*

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Palo

Setting

Landform: Beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

Eg - 7 to 11 inches: gravelly sandy loam

Bw - 11 to 14 inches: gravelly sandy loam

Btg - 14 to 27 inches: gravelly sandy clay loam

C - 27 to 35 inches: gravelly sandy loam

2C - 35 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 6.90 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Gc—Gravel pit

Map Unit Setting

National map unit symbol: 69x0

Elevation: 470 to 900 feet

Custom Soil Resource Report

Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 45 to 51 degrees F
Frost-free period: 128 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Gravel pit: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Water

Percent of map unit: 5 percent

IbA0—losco and Winegars sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69xz
Elevation: 580 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

losco and similar soils: 55 percent
Winegars and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Drainageways on till plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Winegars

Setting

Landform: Drainageways on till plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: sandy loam
E1 - 7 to 10 inches: loamy sand
E2 - 10 to 15 inches: loamy sand
Bt1 - 15 to 43 inches: gravelly sand
Bt2 - 43 to 47 inches: gravelly fine sandy loam
C1 - 47 to 54 inches: stratified coarse sand to gravelly sand
2C2 - 54 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

IcA0—losco sandy loam and Covert loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2qz3n
Elevation: 580 to 820 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

losco and similar soils: 55 percent
Covert and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Swales on till plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C1 - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w

Custom Soil Resource Report

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Covert

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bs1 - 6 to 12 inches: sand

Bs2 - 12 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

IcB1—losco sandy loam and Covert loamy sand, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3p

Elevation: 600 to 810 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

losco and similar soils: 55 percent

Covert and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Swales on till plains

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)*

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Covert

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Custom Soil Resource Report

Bs1 - 6 to 12 inches: sand
Bs2 - 12 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

JaA0—Jeddo silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69y5
Elevation: 600 to 830 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Jeddo and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jeddo

Setting

Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey till

Typical profile

Ap - 0 to 7 inches: silty clay loam
Bg - 7 to 12 inches: silty clay loam
Btg1 - 12 to 15 inches: clay loam
Btg2 - 15 to 25 inches: silty clay loam

Custom Soil Resource Report

BCg - 25 to 36 inches: silty clay loam

C - 36 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Jd—Jeddo silt loam

Map Unit Setting

National map unit symbol: 690q

Elevation: 610 to 860 feet

Mean annual precipitation: 31 to 31 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 151 to 204 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Jeddo and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jeddo

Setting

Landform: Flats on till plains, ground moraines, drainageways on till plains, depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey till

Typical profile

Ap - 0 to 8 inches: silt loam

Btg1 - 8 to 17 inches: silty clay loam

Btg2 - 17 to 27 inches: silty clay

Custom Soil Resource Report

Bt1 - 27 to 35 inches: silty clay
Bt2 - 35 to 46 inches: silty clay
C - 46 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Blount

Percent of map unit: 5 percent
Landform: Knolls on till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Parkhill

Percent of map unit: 5 percent
Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

LdA0—Linwood muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69yf
Elevation: 730 to 830 feet
Mean annual precipitation: 30 to 32 inches

Custom Soil Resource Report

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Linwood and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Linwood

Setting

Landform: Depressions on ground moraines, depressions on drainageways

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Woody organic material over loamy till

Typical profile

Oa1 - 0 to 15 inches: muck

Oa2 - 15 to 24 inches: muck

Oa3 - 24 to 28 inches: muck

Cg - 28 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very high (about 16.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

LeA0—Linwood and Timakwa mucks, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2qz3s

Elevation: 590 to 870 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Linwood and similar soils: 51 percent

Timakwa and similar soils: 49 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Linwood

Setting

Landform: Depressions on ground moraines, depressions on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Woody organic material over loamy till

Typical profile

Oa1 - 0 to 15 inches: muck

Oa2 - 15 to 24 inches: muck

Oa3 - 24 to 28 inches: muck

Cg - 28 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very high (about 16.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Description of Timakwa

Setting

Landform: Depressions on till plains, flats on ground moraines, depressions on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Woody organic material over sandy glaciofluvial deposits

Typical profile

Oa1 - 0 to 12 inches: muck

Oa2 - 12 to 24 inches: muck

Oa3 - 24 to 30 inches: muck

Cg - 30 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 13.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Lm—Lamson fine sandy loam

Map Unit Setting

National map unit symbol: 690s
Elevation: 570 to 840 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 47 to 49 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Lamson and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lamson

Setting

Landform: Drainageways on lake plains, depressions on lake plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified coarse-loamy glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: fine sandy loam
Bg1 - 9 to 18 inches: very fine sandy loam
Bg2 - 18 to 29 inches: very fine sandy loam
Bg3 - 29 to 33 inches: stratified very fine sandy loam to silt loam
Cg - 33 to 49 inches: very fine sandy loam

Custom Soil Resource Report

C1 - 49 to 55 inches: loamy very fine sand

C2 - 55 to 80 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minor Components

Bach

Percent of map unit: 4 percent

Landform: Drainageways on lake plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minoa

Percent of map unit: 3 percent

Landform: Knolls on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Lenawee

Percent of map unit: 3 percent

Landform: Drainageways on lake plains, depressions on lake plains, flats

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

MaB1—McBride fine sandy loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69yr
Elevation: 650 to 890 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Mcbride and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MbA1—McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69yz

Elevation: 680 to 820 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mcbride and similar soils: 55 percent

Montcalm and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Custom Soil Resource Report

Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Montcalm

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MbB1—McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z0
Elevation: 610 to 830 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days

Custom Soil Resource Report

Farmland classification: Farmland of local importance

Map Unit Composition

Mcbride and similar soils: 55 percent

Montcalm and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcbride

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Custom Soil Resource Report

Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MbB3—McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69z1
Elevation: 780 to 790 feet
Mean annual precipitation: 30 to 30 inches
Mean annual air temperature: 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

McBride, severely eroded, and similar soils: 55 percent
Montcalm, severely eroded, and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride, Severely Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Montcalm, Severely Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MbC1—McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z2
Elevation: 740 to 820 feet
Mean annual precipitation: 30 to 31 inches
Mean annual air temperature: 47 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mcbride and similar soils: 55 percent
Montcalm and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MbC2—McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, moderately or severely eroded

Map Unit Setting

National map unit symbol: 69z3

Elevation: 720 to 790 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

McBride, moderately eroded, and similar soils: 55 percent

Montcalm, moderately eroded, and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MbD1—McBride sandy loam and Montcalm loamy sand, 15 to 25 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z4

Elevation: 760 to 820 feet

Mean annual precipitation: 31 to 31 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Mcbride and similar soils: 55 percent

Montcalm and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MbE3—McBride sandy loam and Montcalm loamy sand, 15+ percent slopes, moderately or severely eroded

Map Unit Setting

National map unit symbol: 69z5

Elevation: 770 to 830 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

McBride, severely eroded, and similar soils: 55 percent

Montcalm, severely eroded, and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride, Severely Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm, Severely Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MeA1—Mancelona loamy sand, 0 to 3 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z9
Elevation: 610 to 810 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona

Setting

Landform: Deltas, beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 5 inches: loamy sand
E - 5 to 7 inches: sand
Bs - 7 to 14 inches: sand
E' - 14 to 26 inches: sand
2Bt - 26 to 29 inches: sandy loam
3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 8.04 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MeB1—Mancelona loamy sand, 3 to 8 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zb
Elevation: 600 to 860 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona

Setting

Landform: Deltas, beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 5 inches: loamy sand
E - 5 to 7 inches: sand
Bs - 7 to 14 inches: sand
E' - 14 to 26 inches: sand
2Bt - 26 to 29 inches: sandy loam
3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 8.04 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MeB2—Mancelona loamy sand, 3 to 8 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zc
Elevation: 730 to 820 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona, Moderately Eroded

Setting

Landform: Deltas, beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 5 inches: loamy sand
E - 5 to 7 inches: sand
Bs - 7 to 14 inches: sand
E' - 14 to 26 inches: sand
2Bt - 26 to 29 inches: sandy loam
3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 8.04 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MeC1—Mancelona loamy sand, 8 to 15 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zd

Elevation: 620 to 840 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona

Setting

Landform: Kames, beach ridges

Landform position (two-dimensional): Footslope, backslope, toeslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 5 inches: loamy sand

E - 5 to 7 inches: sand

Bs - 7 to 14 inches: sand

E' - 14 to 26 inches: sand

2Bt - 26 to 29 inches: sandy loam

3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 8.04 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Custom Soil Resource Report

Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MfA1—Marlette loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zk
Elevation: 760 to 830 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

MfB1—Marlette loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zl
Elevation: 730 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Custom Soil Resource Report

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Depressions on ground moraines
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

MfB2—Marlette loam, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zm
Elevation: 770 to 810 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam

Custom Soil Resource Report

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MfB3—Marlette loam, 2 to 6 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69zn

Elevation: 770 to 840 feet

Mean annual precipitation: 31 to 31 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, severely eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Severely Eroded

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MfC1—Marlette loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zp
Elevation: 770 to 830 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 47 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on end moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam

Custom Soil Resource Report

C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MfC2—Marlette loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zq

Elevation: 770 to 820 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Knolls on end moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Custom Soil Resource Report

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MfC3—Marlette loam, 6 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69zr

Elevation: 710 to 730 feet

Mean annual precipitation: 31 inches

Mean annual air temperature: 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, severely eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Severely Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Interfluve, crest, base slope, side slope, nose slope, head slope

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 6 inches: loam

Custom Soil Resource Report

B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MfD1—Marlette loam, 12 to 18 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zs
Elevation: 770 to 870 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

Custom Soil Resource Report

E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MfD2—Marlette loam, 12 to 18 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zt
Elevation: 720 to 730 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MfD3—Marlette loam, 12 to 18 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69zv
Elevation: 740 to 890 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Severely Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex

Custom Soil Resource Report

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MgA1—Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zx

Elevation: 730 to 820 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Custom Soil Resource Report

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

MgB1—Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zy
Elevation: 730 to 820 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

MgB2—Marlette silt loam and loam, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zz
Elevation: 730 to 830 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette, moderately eroded, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

MgC1—Marlette silt loam and loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b00
Elevation: 730 to 800 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Ground moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Custom Soil Resource Report

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MgC2—Marlette silt loam and loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b01

Elevation: 780 to 890 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Ground moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MhA1—Melita and Arenac loamy sands, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b02
Elevation: 580 to 800 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Melita and similar soils: 55 percent
Arenac and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melita

Setting

Landform: Beaches on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 2 inches: loamy sand
E - 2 to 6 inches: sand
Bhs - 6 to 10 inches: loamy sand
Bs - 10 to 16 inches: sand
C1 - 16 to 30 inches: sand
C2 - 30 to 45 inches: sand
2C3 - 45 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Description of Arenac

Setting

Landform: Beaches on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

A - 0 to 2 inches: sand
E - 2 to 7 inches: sand
Bhs - 7 to 12 inches: sand
Bs - 12 to 24 inches: sand
C1 - 24 to 54 inches: sand
2C2 - 54 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

MIA—Metamora sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6913
Elevation: 630 to 860 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Metamora and similar soils: 86 percent
Minor components: 14 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Metamora

Setting

Landform: Knolls on till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 10 inches: sandy loam
E - 10 to 18 inches: sandy loam
Bt1 - 18 to 23 inches: sandy loam
2Bt2 - 23 to 31 inches: clay loam
2Cg1 - 31 to 39 inches: clay loam
2Cg2 - 39 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D

Custom Soil Resource Report

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Corunna

Percent of map unit: 3 percent

Landform: Depressions on till plains, drainageways on till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Conover

Percent of map unit: 3 percent

Landform: Flats on till plains

Landform position (two-dimensional): Summit, toeslope, footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Blount

Percent of map unit: 3 percent

Landform: Knolls on till plains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Parkhill

Percent of map unit: 2 percent

Landform: Drainageways on till plains, depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Lamson

Percent of map unit: 2 percent

Landform: Depressions on till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Metea

Percent of map unit: 1 percent

Landform: Ridges on till plains, knolls on till plains

Custom Soil Resource Report

Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MnA1—Montcalm loamy sand, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b08
Elevation: 690 to 810 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MnB1—Montcalm loamy sand, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b09
Elevation: 580 to 840 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MnC1—Montcalm loamy sand, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0c

Elevation: 760 to 810 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Nose slope, crest, base slope, side slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MnC2—Montcalm loamy sand, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b0d
Elevation: 760 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm, Moderately Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Nose slope, crest, base slope, side slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MnD1—Montcalm loamy sand, 12 to 18 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0f

Elevation: 780 to 840 feet

Mean annual precipitation: 31 to 31 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Montcalm and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Nose slope, crest, base slope, side slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 12 to 18 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MoB—Miami-Dighton sandy loams, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6919

Elevation: 720 to 860 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 151 to 204 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Miami and similar soils: 51 percent

Dighton and similar soils: 49 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Miami

Setting

Landform: Knolls on moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Ap - 0 to 9 inches: sandy loam

E - 9 to 13 inches: clay loam

Bt1 - 13 to 23 inches: clay loam

Bt2 - 23 to 30 inches: silty clay loam

C - 30 to 80 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Dighton

Setting

Landform: Knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till over sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: sandy loam
B/E - 8 to 18 inches: clay loam
Bt - 18 to 29 inches: clay loam
BC - 29 to 36 inches: fine sandy loam
2E and Bt - 36 to 57 inches: stratified fine sand to loamy fine sand
2C - 57 to 80 inches: sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

NaA1—Newaygo sandy loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0h
Elevation: 580 to 830 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Newaygo and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newaygo

Setting

Landform: Knolls on beach ridges, outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
Bs - 7 to 9 inches: sandy loam
Bt1 - 9 to 14 inches: sandy loam
Bt2 - 14 to 24 inches: sandy clay loam
2C - 24 to 80 inches: very gravelly sand, gravelly sand, sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

OaA0—Otisco loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0m
Elevation: 740 to 820 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Otisco and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Otisco

Setting

Landform: Knolls on glacial drainage channels
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy and/or loamy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
E - 8 to 11 inches: loamy sand
Bs - 11 to 18 inches: loamy sand
E' - 18 to 24 inches: loamy sand
Bt1 - 24 to 32 inches: sandy loam
Bt2 - 32 to 44 inches: coarse sandy loam
C - 44 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY007MI - Lake Plain Flats

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Edmore

Percent of map unit: 10 percent
Landform: Depressions on glacial drainage channels
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

PcA0—Parkhill loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tx84
Elevation: 580 to 890 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 150 to 230 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Parkhill and similar soils: 87 percent
Minor components: 13 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkhill

Setting

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Loamy lodgment till

Typical profile

Ap - 0 to 9 inches: loam
Bg - 9 to 29 inches: clay loam
C - 29 to 57 inches: loam
2Cd - 57 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 36 to 63 inches to densic material
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Custom Soil Resource Report

Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.1 to 0.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Crosier

Percent of map unit: 7 percent
Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Corunna

Percent of map unit: 5 percent
Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Ziegenfuss

Percent of map unit: 1 percent
Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

PdA0—Parkhill loam and clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0t

Custom Soil Resource Report

Elevation: 600 to 890 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Parkhill and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkhill

Setting

Landform: Flats on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: clay loam
Bg1 - 7 to 12 inches: clay loam
Bg2 - 12 to 16 inches: loam
Bg3 - 16 to 30 inches: loam
BCg - 30 to 36 inches: loam
Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

PeA0—Parkhill loam and mucky loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0v
Elevation: 640 to 850 feet

Custom Soil Resource Report

Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Parkhill and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkhill

Setting

Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: mucky loam
Bg1 - 7 to 12 inches: loam
Bg2 - 12 to 16 inches: loam
Bg3 - 16 to 30 inches: loam
BCg - 30 to 36 inches: loam
Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

RdA0—Roscommon mucky loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b11
Elevation: 580 to 810 feet
Mean annual precipitation: 30 to 32 inches

Custom Soil Resource Report

Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Roscommon and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Roscommon

Setting

Landform: Flats on outwash plains, flats on drainageways
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 4 inches: mucky loamy sand
Bw - 4 to 25 inches: sand
C1 - 25 to 45 inches: sand
C2 - 45 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

ReA1—Grattan sand, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3t
Elevation: 750 to 820 feet
Mean annual precipitation: 30 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Grattan and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Knolls on outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand

E - 2 to 8 inches: sand

Bs - 8 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

ReB1—Grattan sand, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3v

Elevation: 670 to 840 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Grattan and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Stream terraces on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand
E - 2 to 8 inches: sand
Bs - 8 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

ReC1—Grattan sand, 7 to 14 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3x
Elevation: 760 to 820 feet
Mean annual precipitation: 30 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Grattan and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Stream terraces on outwash plains

Custom Soil Resource Report

Landform position (two-dimensional): Toeslope, backslope, summit

Landform position (three-dimensional): Side slope, base slope, crest

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand

E - 2 to 8 inches: sand

Bs - 8 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 7 to 14 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

ReD1—Grattan sand, 14+ percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3z

Elevation: 760 to 840 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Grattan and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Stream terraces on outwash plains

Landform position (two-dimensional): Toeslope, backslope, summit

Landform position (three-dimensional): Crest, side slope, base slope

Down-slope shape: Concave, linear

Custom Soil Resource Report

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand

E - 2 to 8 inches: sand

Bs - 8 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 14 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

SbA0—Saverine and losco fine sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1c

Elevation: 580 to 820 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Saverine and similar soils: 55 percent

losco and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine

Setting

Landform: Flats on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam
E1 - 7 to 9 inches: fine sandy loam
E2 - 9 to 12 inches: fine sandy loam
Bt - 12 to 19 inches: fine sandy loam
Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam
2C - 30 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of losco

Setting

Landform: Depressions on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

SbB1—Saverine and losco fine sandy loams, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b1d

Elevation: 580 to 800 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Saverine and similar soils: 55 percent

losco and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam

E1 - 7 to 9 inches: fine sandy loam

E2 - 9 to 12 inches: fine sandy loam

Bt - 12 to 19 inches: fine sandy loam

Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam

2C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)

Depth to water table: About 6 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of losco

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

SbB2—Saverine and losco fine sandy loams, 2 to 7 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b1f

Elevation: 680 to 780 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Saverine, moderately eroded, and similar soils: 55 percent

losco, moderately eroded, and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine, Moderately Eroded

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam

E1 - 7 to 9 inches: fine sandy loam

E2 - 9 to 12 inches: fine sandy loam

Bt - 12 to 19 inches: fine sandy loam

Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam

2C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Custom Soil Resource Report

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Iosco, Moderately Eroded

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

SloacA—Sloan, frequently flooded, and Ceresco, occasionally flooded, soils, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 31b27

Elevation: 580 to 810 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 135 to 210 days

Custom Soil Resource Report

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Sloan and similar soils: 45 percent

Ceresco and similar soils: 35 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sloan

Setting

Landform: Meander scars on flood plains, oxbows on flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Loamy alluvium

Typical profile

A - 0 to 11 inches: loam

Bg1 - 11 to 17 inches: silty clay loam

Bg2 - 17 to 45 inches: silt loam

Cg - 45 to 79 inches: stratified silt loam to silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: Frequent

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D

Ecological site: F099XY009MI - Wet Floodplain

Hydric soil rating: Yes

Description of Ceresco

Setting

Landform: Flood plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy alluvium

Typical profile

A - 0 to 12 inches: loam

Custom Soil Resource Report

Bw - 12 to 21 inches: sandy loam

Bg - 21 to 30 inches: sandy loam

Cg - 30 to 79 inches: stratified sandy loam to loamy fine sand to sand to loamy sand to loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F098XA003MI - Moist Floodplains

Hydric soil rating: No

Minor Components

Landes

Percent of map unit: 10 percent

Landform: Terraces on flood plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY008MI - Moist Floodplain

Hydric soil rating: No

Abscota

Percent of map unit: 5 percent

Landform: Terraces on flood plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear, convex

Ecological site: F099XY008MI - Moist Floodplain

Hydric soil rating: No

Glendora

Percent of map unit: 3 percent

Landform: Flats on flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA004MI - Wet Floodplains

Hydric soil rating: Yes

Adrian

Percent of map unit: 1 percent
Landform: Backswamps on flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Saranac

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA004MI - Wet Floodplains
Hydric soil rating: Yes

TbA0—Tappan mucky loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1n
Elevation: 750 to 810 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Tappan and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tappan

Setting

Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: mucky loam
Bg1 - 8 to 15 inches: loam
Bg2 - 15 to 25 inches: loam
Cg - 25 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

TgA0—Tonkey and Bach fine sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1t
Elevation: 580 to 870 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Tonkey and similar soils: 55 percent
Bach and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tonkey

Setting

Landform: Deltas on lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified sandy and/or loamy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
E - 7 to 14 inches: loamy sand
Bw - 14 to 28 inches: loam
C - 28 to 80 inches: stratified gravelly sand to sand to sandy loam to loam

Properties and qualities

Slope: 0 to 2 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Description of Bach

Setting

Landform: Deltas on lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bg1 - 7 to 20 inches: very fine sandy loam
Bg2 - 20 to 34 inches: very fine sandy loam
C - 34 to 80 inches: stratified fine sand to very fine sand to silt

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

W—Water

Map Unit Setting

National map unit symbol: 2n9rr
Elevation: 670 to 890 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

WaA0—Wallkill loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b20
Elevation: 600 to 830 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 137 to 179 days
Farmland classification: Not prime farmland

Map Unit Composition

Wallkill and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wallkill

Setting

Landform: Depressions on glacial drainage channels
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy colluvium over herbaceous organic material

Typical profile

A - 0 to 7 inches: loam
Cg - 7 to 15 inches: loam
2Oa - 15 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 20.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

WcA0—Washtenaw loam and silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b22

Elevation: 580 to 890 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained and either protected from flooding
or not frequently flooded during the growing season

Map Unit Composition

Washtenaw and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Washtenaw

Setting

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine-loamy colluvium

Typical profile

Ap - 0 to 7 inches: silt loam

Cg - 7 to 20 inches: stratified loam to silt loam

2Ab - 20 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

WdA0—Washtenaw sandy loam and loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b24

Elevation: 580 to 880 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Washtenaw and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Washtenaw

Setting

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine-loamy colluvium

Typical profile

Ap - 0 to 7 inches: sandy loam

Cg - 7 to 20 inches: stratified loam to silt loam

2Ab - 20 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

WpB—Wasepi-Boyer complex, loamy substratum, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6927
Elevation: 580 to 820 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Farmland of local importance

Map Unit Composition

Wasepi, loamy substratum, and similar soils: 62 percent
Boyer, loamy substratum, and similar soils: 35 percent
Minor components: 3 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wasepi, Loamy Substratum

Setting

Landform: Stream terraces
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy over sandy and gravelly glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 9 inches: sandy loam
Bt - 9 to 14 inches: sandy loam
Btg - 14 to 18 inches: sandy loam
BCg - 18 to 29 inches: loamy sand
2C1 - 29 to 38 inches: stratified sand to coarse sand
2C2 - 38 to 47 inches: gravelly sand
3C3 - 47 to 80 inches: silty clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Boyer, Loamy Substratum

Setting

Landform: Ridges on stream terraces

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy over sandy and gravelly glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 10 inches: loamy sand

E1 - 10 to 17 inches: loamy sand

E2 - 17 to 22 inches: loamy sand

Bt - 22 to 29 inches: gravelly sandy loam

BC - 29 to 38 inches: loamy sand

2C1 - 38 to 50 inches: sand

3C2 - 50 to 80 inches: silty clay loam

Properties and qualities

Slope: 4 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: B

Ecological site: F099XY004MI - Warm Dry Sandy Ridge

Hydric soil rating: No

Minor Components

Gilford

Percent of map unit: 3 percent

Landform: Depressions on drainageways

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

St. Clair County, Michigan

Pc—Parkhill loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tx84
Elevation: 580 to 890 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 150 to 230 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Parkhill and similar soils: 87 percent
Minor components: 13 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkhill

Setting

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Loamy lodgment till

Typical profile

Ap - 0 to 9 inches: loam
Bg - 9 to 29 inches: clay loam
C - 29 to 57 inches: loam
2Cd - 57 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 36 to 63 inches to densic material
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.1 to 0.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Crosier

Percent of map unit: 7 percent

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains

Landform position (two-dimensional): Footslope, backslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Corunna

Percent of map unit: 5 percent

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear, concave

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Ziegenfuss

Percent of map unit: 1 percent

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear, concave

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- 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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



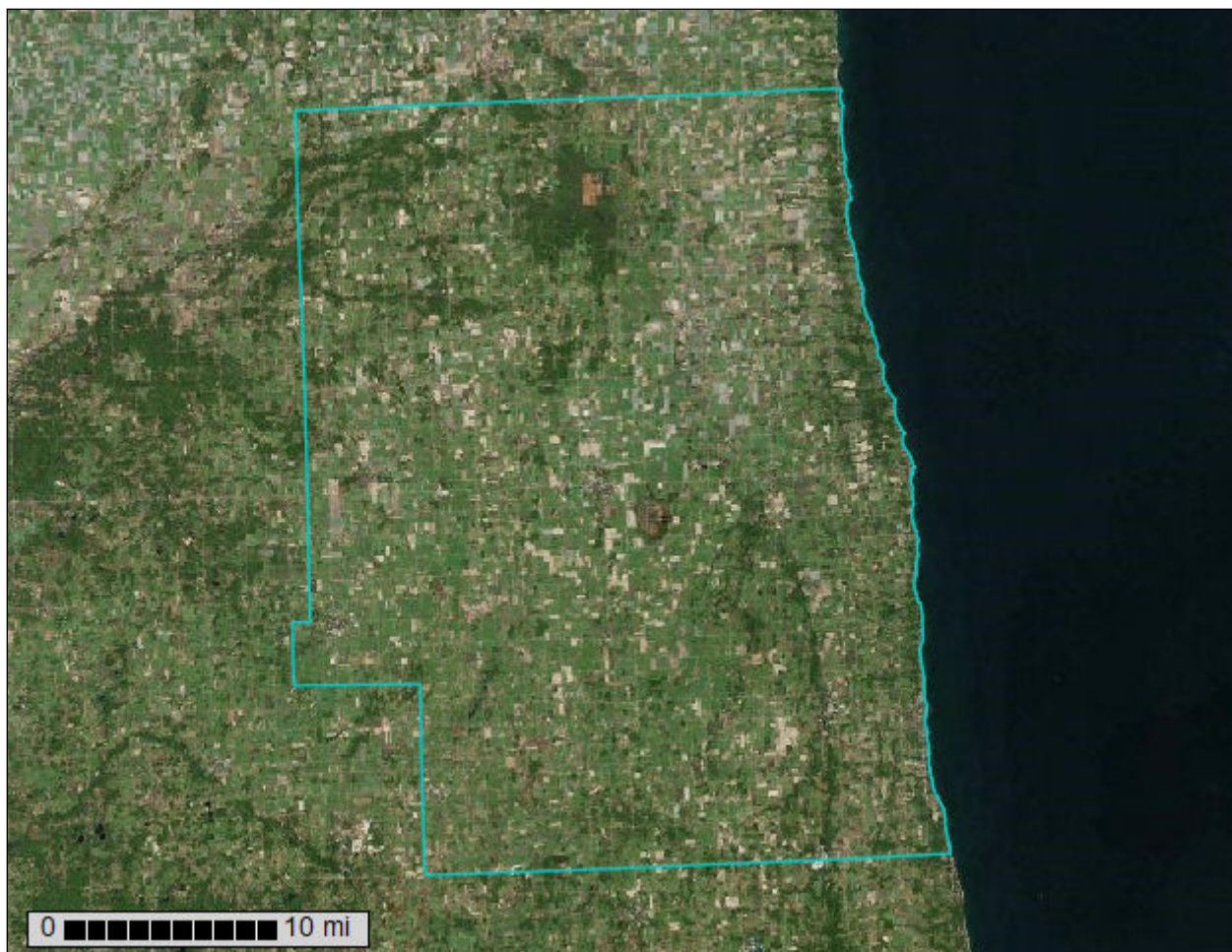
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Sanilac County, Michigan**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

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

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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 a 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.

Contents

Preface	2
How Soil Surveys Are Made	11
Soil Map	14
Soil Map.....	15
Legend.....	16
Map Unit Legend.....	17
Map Unit Descriptions.....	29
Sanilac County, Michigan.....	32
AdrabA—Adrian muck, Erie-Huron lake plain, 0 to 1 percent slopes.....	32
AeA0—Pipestone and Saugatuck loamy sands, 0 to 2 percent slopes.....	33
AeB1—Pipestone and Saugatuck loamy sands, 2 to 6 percent slopes, slightly eroded.....	35
AgA—Pipestone loamy sand, loamy substratum, 0 to 2 percent slopes.....	37
AuA—Avoca loamy sand, 0 to 2 percent slopes.....	38
AvA—Avoca loamy sand, 0 to 3 percent slopes.....	40
AwA—Avoca loamy fine sand, 0 to 3 percent slopes.....	41
BaA0—Bach silt loam, 0 to 2 percent slopes.....	43
Bc—Bach very fine sandy loam.....	44
BeB—Belding sandy loam, 2 to 6 percent slopes.....	45
BIA—Blount loam, Erie-Huron Lake Plain, 0 to 2 percent slopes.....	46
BoB—Boyer loamy sand, 0 to 6 percent slopes.....	48
BrB—Boyer loamy sand, 1 to 6 percent slopes.....	49
BsB—Boyer sandy loam, 0 to 6 percent slopes.....	51
BsC—Boyer sandy loam, 6 to 12 percent slopes.....	52
Bv—Brevort loamy sand.....	54
Bw—Brookston loam.....	55
CaA0—Capac loam and fine sandy loam, 0 to 2 percent slopes.....	56
CaB1—Capac loam and fine sandy loam, 2 to 6 percent slopes, slightly eroded.....	57
CarabA—Carlisle muck, 0 to 2 percent slopes.....	58
CbA0—Capac silt loam and loam, 0 to 2 percent slopes.....	60
CbB1—Capac silt loam and loam, 2 to 6 percent slopes, slightly eroded...	61
CcA0—Carlisle muck, 0 to 2 percent slopes.....	62
CdA0—Carlisle and Linwood mucks, 0 to 2 percent slopes.....	63
Ce—Clay pit.....	65
CfA0—Coral fine sandy loam, 0 to 2 percent slopes.....	65
CfB1—Coral fine sandy loam, 2 to 6 percent slopes, slightly eroded.....	66
CgA1—Covert loamy sand, 0 to 2 percent slopes, slightly eroded.....	67
CgB1—Covert loamy sand, 2 to 7 percent slopes, slightly eroded.....	68
ChB—Chelsea loamy sand, 0 to 6 percent slopes.....	69
CiC—Chelsea fine sand, 6 to 12 percent slopes.....	70
CkB—Capac loam, 1 to 5 percent slopes.....	72
Cl—Colwood loam.....	73
CnB—Covert sand, 0 to 6 percent slopes.....	74

Custom Soil Resource Report

CoA—Covert sand, loamy substratum, 0 to 2 percent slopes.....	76
CpA—Capac fine sandy loam, 0 to 2 percent slopes.....	77
CpB—Capac fine sandy loam, 2 to 6 percent slopes.....	78
Ct—Cohoctah sandy loam.....	80
CvrabA—Conover loam, 0 to 3 percent slopes.....	81
CvracB—Conover-Williamstown loams, 0 to 6 percent slopes.....	82
Cx—Corunna sandy loam.....	85
De—Deford fine sand.....	86
EaA1—Eastport, Arenac, and Kalkaska sands, 0 to 2 percent slopes, slightly eroded.....	87
EaB1—Eastport, Arenac, and Kalkaska sands, 2 to 7 percent slopes, slightly eroded.....	90
EaC1—Eastport, Arenac, and Kalkaska sands, 7 to 14 percent slopes, slightly eroded.....	92
EbA0—Eastport fine sand and beach sand, 0 to 2 percent slopes.....	94
EbC0—Eastport fine sand and beach sand, 2 to 18 percent slopes.....	96
EcA0—Edmore and Ensley sandy loams, 0 to 2 percent slopes.....	97
EcB1—Edmore and Ensley sandy loams, 2 to 6 percent slopes, slightly eroded.....	99
EdA0—Edwards muck, 0 to 2 percent slopes.....	100
EeA0—Epoufette and Ronald sandy loams, 0 to 2 percent slopes.....	102
EeB1—Epoufette and Ronald sandy loams, 2 to 6 percent slopes, slightly eroded.....	103
EsB—Eastport sand, 0 to 6 percent slopes.....	105
FaA—Fabius-Wasepi sandy loams, 0 to 2 percent slopes.....	106
Fn—Fluvaquents, loamy.....	108
GaC1—Gagetown silt loam, 6 to 12 percent slopes, slightly eroded.....	110
GaC2—Gagetown silt loam, 6 to 12 percent slopes, moderately eroded..	111
GaD2—Gagetown silt loam, 12 to 18 percent slopes, moderately eroded.....	112
GbA0—Gladwin and Palo sandy loams, 0 to 2 percent slopes.....	113
GbB1—Gladwin and Palo sandy loams, 2 to 7 percent slopes, slightly eroded.....	114
Gc—Gravel pit.....	116
GdA0—Greenwood peat, 0 to 2 percent slopes.....	117
GeA1—Guelph loam, 0 to 2 percent slopes, slightly eroded.....	118
GeB1—Guelph loam, 2 to 6 percent slopes, slightly eroded.....	119
GeB2—Guelph loam, 2 to 6 percent slopes, moderately eroded.....	120
GeC0—Guelph loam, 6 to 12 percent slopes.....	121
GeC1—Guelph loam, 6 to 12 percent slopes, slightly eroded.....	122
GeC2—Guelph loam, 6 to 12 percent slopes, moderately eroded.....	123
GeC3—Guelph loam, 6 to 12 percent slopes, severely eroded.....	124
GeD0—Guelph loam, 12 to 18 percent slopes.....	125
GeD1—Guelph loam, 12 to 18 percent slopes, slightly eroded.....	126
GeD2—Guelph loam, 12 to 18 percent slopes, moderately eroded.....	127
GeD3—Guelph loam, 12 to 18 percent slopes, severely eroded.....	128
GfA1—Guelph loam and silt loam, 0 to 2 percent slopes, slightly eroded	129
GfA2—Guelph loam and silt loam, 0 to 2 percent slopes, moderately eroded.....	130
GfB1—Guelph loam and silt loam, 2 to 6 percent slopes, slightly eroded	131
GfB2—Guelph loam and silt loam, 2 to 6 percent slopes, moderately eroded.....	132
GfB3—Guelph loam and silt loam, 2 to 6 percent slopes, severely eroded.....	133

Custom Soil Resource Report

GfC1—Guelph loam and silt loam, 6 to 12 percent slopes, slightly eroded.....	134
GfC2—Guelph loam and silt loam, 6 to 12 percent slopes, moderately eroded.....	135
GfC3—Guelph loam and silt loam, 6 to 12 percent slopes, severely eroded.....	136
GfD1—Guelph loam and silt loam, 12 to 18 percent slopes, slightly eroded.....	137
GfD2—Guelph loam and silt loam, 12 to 18 percent slopes, moderately eroded.....	138
GfD3—Guelph loam and silt loam, 12 to 18 percent slopes, severely eroded.....	139
GfE1—Guelph loam and silt loam, 18+ percent slopes, slightly eroded...	140
GfE2—Guelph loam and silt loam, 18+ percent slopes, moderately eroded.....	141
GfE3—Guelph loam and silt loam, 18+ percent slopes, severely eroded.	142
GgB—Guelph-Londo loams, 2 to 6 percent slopes.....	143
GhB—Guelph-Londo loams, 0 to 6 percent slopes.....	145
GkB—Grindstone-Kilmanagh loams, 0 to 4 percent slopes.....	147
Gm—Gilford sandy loam.....	149
Gn—Granby loamy fine sand.....	150
HbA0—Houghton and Palms mucks, 0 to 2 percent slopes.....	152
HcB1—Huron silt loam, 2 to 6 percent slopes, slightly eroded.....	153
HgtahA—Houghton muck, 0 to 1 percent slopes.....	154
HgtaiA—Houghton muck, Erie-Huron lake plain, 0 to 1 percent slopes....	156
IaA0—Iosco and Menominee loamy sands, 0 to 2 percent slopes.....	158
IaB1—Iosco and Menominee loamy sands, 2 to 6 percent slopes, slightly eroded.....	160
IbA0—Iosco and Winegars sandy loams, 0 to 2 percent slopes.....	162
IbB1—Iosco and Winegars sandy loams, 2 to 6 percent slopes, slightly eroded.....	163
IcA0—Iosco sandy loam and Covert loamy sand, 0 to 2 percent slopes..	165
IcB1—Iosco sandy loam and Covert loamy sand, 2 to 7 percent slopes, slightly eroded.....	167
IcC1—Iosco sandy loam and Covert loamy sand, 7 to 14 percent slopes, slightly eroded.....	169
IcD1—Iosco sandy loam and Covert loamy sand, 14+ percent slopes, slightly eroded.....	170
JaA0—Jeddo silty clay loam, 0 to 2 percent slopes.....	172
Jd—Jeddo silt loam.....	173
KaA1—Kalkaska and Wallace fine sands, 0 to 2 percent slopes, slightly eroded.....	175
KaB1—Kalkaska and Wallace fine sands, 2 to 8 percent slopes, slightly eroded.....	176
KaC1—Kalkaska and Wallace fine sands, 8 to 18 percent slopes, slightly eroded.....	178
KbA0—Kerston muck, 0 to 2 percent slopes.....	180
KcA—Kibbie loam, 0 to 2 percent slopes.....	181
KcB—Kibbie loam, 2 to 6 percent slopes.....	182
Kd—Kilmanagh loam.....	183
La—Lake beach, sandy.....	185
Lb—Lake beach, rocky.....	185
Lc—Lake beach, stony.....	186
LdA0—Linwood muck, 0 to 2 percent slopes.....	187

Custom Soil Resource Report

LeA0—Linwood and Timakwa mucks, 0 to 2 percent slopes.....	188
LgB2—Londo loam, 0 to 5 percent slopes, moderately eroded.....	189
LkA—Londo loam, 0 to 3 percent slopes.....	191
Lm—Lamson fine sandy loam.....	192
Ln—Linwood muck.....	194
LpA—Londo complex, 0 to 2 percent slopes.....	195
MaA1—McBride fine sandy loam, 0 to 2 percent slopes, slightly eroded.	197
MaB1—McBride fine sandy loam, 2 to 6 percent slopes, slightly eroded.	198
MaB2—McBride fine sandy loam, 2 to 6 percent slopes, moderately eroded.....	199
MaC1—McBride fine sandy loam, 6 to 12 percent slopes, slightly eroded.....	200
MaC2—McBride fine sandy loam, 6 to 12 percent slopes, moderately eroded.....	201
MaD1—McBride fine sandy loam, 12 to 18 percent slopes, slightly eroded.....	202
MaD2—McBride fine sandy loam, 12 to 18 percent slopes, moderately eroded.....	203
MaD3—McBride fine sandy loam, 12 to 18 percent slopes, severely eroded.....	205
MbA1—McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded.....	206
MbB1—McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, slightly eroded.....	207
MbB3—McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, severely eroded.....	209
MbC1—McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, slightly eroded.....	211
MbC2—McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, moderately or severely eroded.....	213
MbD1—McBride sandy loam and Montcalm loamy sand, 15 to 25 percent slopes, slightly eroded.....	215
MbE3—McBride sandy loam and Montcalm loamy sand, 15+ percent slopes, moderately or severely eroded.....	217
McA0—Mcgregor sandy loam, 0 to 2 percent slopes.....	219
McB1—Mcgregor sandy loam, 2 to 6 percent slopes, slightly eroded.....	220
Md—Made land.....	221
MeA1—Mancelona loamy sand, 0 to 3 percent slopes, slightly eroded....	221
MeB1—Mancelona loamy sand, 3 to 8 percent slopes, slightly eroded....	222
MeB2—Mancelona loamy sand, 3 to 8 percent slopes, moderately eroded.....	223
MeC1—Mancelona loamy sand, 8 to 15 percent slopes, slightly eroded..	224
MeC2—Mancelona loamy sand, 8 to 15 percent slopes, moderately eroded.....	225
MeD1—Mancelona loamy sand, 15+ percent slopes, slightly eroded.....	226
MeD2—Mancelona loamy sand, 15+ percent slopes, moderately eroded	227
MeD3—Mancelona loamy sand, 15+ percent slopes, severely eroded....	228
MfA1—Marlette loam, 0 to 2 percent slopes, slightly eroded.....	229
MfB1—Marlette loam, 2 to 6 percent slopes, slightly eroded.....	231
MfB2—Marlette loam, 2 to 6 percent slopes, moderately eroded.....	232
MfB3—Marlette loam, 2 to 6 percent slopes, severely eroded.....	233
MfC1—Marlette loam, 6 to 12 percent slopes, slightly eroded.....	234
MfC2—Marlette loam, 6 to 12 percent slopes, moderately eroded.....	235
MfC3—Marlette loam, 6 to 12 percent slopes, severely eroded.....	236

Custom Soil Resource Report

MfD1—Marlette loam, 12 to 18 percent slopes, slightly eroded.....	237
MfD2—Marlette loam, 12 to 18 percent slopes, moderately eroded.....	238
MfD3—Marlette loam, 12 to 18 percent slopes, severely eroded.....	239
MfE2—Marlette loam, 18 to 25 percent slopes, moderately eroded.....	240
MgA1—Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded.....	241
MgB1—Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded.....	242
MgB2—Marlette silt loam and loam, 2 to 6 percent slopes, moderately eroded.....	243
MgC1—Marlette silt loam and loam, 6 to 12 percent slopes, slightly eroded.....	245
MgC2—Marlette silt loam and loam, 6 to 12 percent slopes, moderately eroded.....	246
MhA1—Melita and Arenac loamy sands, 0 to 2 percent slopes, slightly eroded.....	247
MhB1—Melita and Arenac loamy sands, 2 to 7 percent slopes, slightly eroded.....	249
MkC1—Melita loamy sand, 7 to 14 percent slopes, slightly eroded.....	250
MkD2—Melita loamy sand, 14+ percent slopes, slightly to severely eroded.....	251
MIA—Metamora sandy loam, 0 to 2 percent slopes.....	252
MmB—Menominee loamy sand, 2 to 6 percent slopes.....	255
MmC1—Menominee loamy sand, 6 to 12 percent slopes, slightly eroded.....	256
MmC2—Menominee loamy sand, 6 to 12 percent slopes, moderately eroded.....	257
MnA0—Montcalm loamy sand, 0 to 2 percent slopes.....	258
MnA1—Montcalm loamy sand, 0 to 2 percent slopes, slightly eroded.....	259
MnB0—Montcalm loamy sand, 2 to 6 percent slopes.....	260
MnB1—Montcalm loamy sand, 2 to 6 percent slopes, slightly eroded.....	261
MnB2—Montcalm loamy sand, 2 to 6 percent slopes, moderately eroded.....	262
MnC1—Montcalm loamy sand, 6 to 12 percent slopes, slightly eroded....	263
MnC2—Montcalm loamy sand, 6 to 12 percent slopes, moderately eroded.....	264
MnD1—Montcalm loamy sand, 12 to 18 percent slopes, slightly eroded..	265
MnD2—Montcalm loamy sand, 12 to 18 percent slopes, moderately eroded.....	266
MoB—Miami-Dighton sandy loams, 2 to 6 percent slopes.....	267
MpB—Marlette sandy loam, 2 to 6 percent slopes.....	269
MpB2—Marlette sandy loam, 2 to 6 percent slopes, moderately eroded..	270
MpC—Marlette sandy loam, 6 to 12 percent slopes.....	271
MpC2—Marlette sandy loam, 6 to 12 percent slopes, moderately eroded.....	272
MrA—Minoa fine sandy loam, clay substratum, 0 to 3 percent slopes.....	273
MsB—Mancelona loamy sand, moderately fine substratum, 0 to 6 percent slopes.....	275
MtB—Marlette-Capac complex, 0 to 6 percent slopes.....	276
MvB—Metamora sandy loam, 0 to 4 percent slopes.....	278
Mw—Mussey-Gilford sandy loams.....	280
MxB—Metea loamy fine sand, 1 to 6 percent slopes.....	282
NaA1—Newaygo sandy loam, 0 to 2 percent slopes, slightly eroded.....	284
NaB1—Newaygo sandy loam, 2 to 6 percent slopes, slightly eroded.....	285

Custom Soil Resource Report

NaC1—Newaygo sandy loam, 6 to 12 percent slopes, slightly eroded.....	286
NaC2—Newaygo sandy loam, 6 to 12 percent slopes, moderately eroded.....	287
OaA0—Otisco loamy sand, 0 to 2 percent slopes.....	288
OaB1—Otisco loamy sand, 2 to 6 percent slopes, slightly eroded.....	289
PaA0—Palms muck, 0 to 2 percent slopes.....	290
PbA0—Palms and Adrian mucks, 0 to 2 percent slopes.....	291
PcA0—Parkhill loam, 0 to 1 percent slopes.....	293
PcB1—Parkhill loam, 2 to 6 percent slopes, slightly eroded.....	294
PdA0—Parkhill loam and clay loam, 0 to 2 percent slopes.....	295
PeA0—Parkhill loam and mucky loam, 0 to 2 percent slopes.....	296
PfA0—Perth silt loam, 0 to 2 percent slopes.....	297
PIB—Pert-Sims loams, 0 to 6 percent slopes.....	298
Pm—Palms muck.....	301
Pn—Pinnebog muck.....	303
PoB—Perrin loamy sand, 0 to 4 percent slopes.....	304
PrB—Pert loam, 2 to 6 percent slopes.....	305
RaA0—Richter and Tonkey bouldery sandy loam and loam, 0 to 2 percent slopes.....	307
RaB1—Richter and Tonkey bouldery sandy loam and loam, 2 to 6 percent slopes, slightly eroded.....	308
RbA0—Rifle peat, 0 to 2 percent slopes.....	310
RcA0—Roscommon loamy sand, 0 to 2 percent slopes.....	311
RdA0—Roscommon mucky loamy sand, 0 to 2 percent slopes.....	312
ReA1—Grattan sand, 0 to 2 percent slopes, slightly eroded.....	313
ReB1—Grattan sand, 2 to 7 percent slopes, slightly eroded.....	314
ReB3—Grattan sand, 2 to 7 percent slopes, moderately or severely eroded.....	315
ReC1—Grattan sand, 7 to 14 percent slopes, slightly eroded.....	316
ReC2—Grattan sand, 7 to 14 percent slopes, moderately or severely eroded.....	317
ReD1—Grattan sand, 14+ percent slopes, slightly eroded.....	318
ReD3—Grattan sand, 14+ percent slopes, moderately or severely eroded.....	319
RpA—Rapson loamy sand, 0 to 2 percent slopes.....	320
SaA0—Sanilac silt loam, 0 to 2 percent slopes.....	321
SaB1—Sanilac silt loam, 2 to 6 percent slopes, slightly eroded.....	322
SbA0—Saverine and losco fine sandy loams, 0 to 2 percent slopes.....	324
SbB1—Saverine and losco fine sandy loams, 2 to 7 percent slopes, slightly eroded.....	325
SbB2—Saverine and losco fine sandy loams, 2 to 7 percent slopes, moderately eroded.....	327
SbC1—Saverine and losco fine sandy loams, 7 to 14 percent slopes, slightly eroded.....	329
SbC2—Saverine and losco fine sandy loams, 7 to 14 percent slopes, moderately eroded.....	331
SbD1—Saverine and losco fine sandy loams, 14+ percent slopes, slightly eroded.....	332
SbD2—Saverine and losco fine sandy loams, 14+ percent slopes, moderately eroded.....	334
ScA0—Spalding peat, 0 to 2 percent slopes.....	336
SfA—Selfridge loamy sand, 0 to 3 percent slopes.....	337
ShA—Shebeon loam, 0 to 2 percent slopes.....	339

Custom Soil Resource Report

SloacA—Sloan, frequently flooded, and Ceresco, occasionally flooded, soils, 0 to 3 percent slopes.....	340
Sn—Sloan loam.....	343
SpB—Spinks loamy fine sand, 0 to 6 percent slopes.....	344
TaA0—Tappan loam, 0 to 1 percent slopes.....	345
TbA0—Tappan mucky loam, 0 to 2 percent slopes.....	347
TcA0—Timakwa muck, 0 to 2 percent slopes.....	348
TdA0—Thomas mucky silt loam, 0 to 2 percent slopes.....	349
TeA0—Tobico mucky loamy sand, 0 to 2 percent slopes.....	350
TfA0—Tonkey sandy loam, 0 to 2 percent slopes.....	351
TgA0—Tonkey and Bach fine sandy loams, 0 to 2 percent slopes.....	352
TgB1—Tonkey and Bach fine sandy loams, 2 to 7 percent slopes, slightly eroded.....	353
ThA0—Tyre loamy sand and sandy loam, 0 to 2 percent slopes.....	355
ThB1—Tyre loamy sand and sandy loam, 2 to 6 percent slopes, slightly eroded.....	356
ThC1—Tyre loamy sand and sandy loam, 6 to 12 percent slopes, slightly eroded.....	357
Tk—Tonkey fine sandy loam.....	358
To—Tobico mucky sandy loam.....	359
TrA—Tedrow loamy sand, 0 to 2 percent slopes.....	360
W—Water.....	361
WaA0—Wallkill loam, 0 to 2 percent slopes.....	362
WbA0—Warners muck and marl, 0 to 2 percent slopes.....	363
WcA0—Washtenaw loam and silt loam, 0 to 2 percent slopes.....	364
WcB0—Washtenaw loam and silt loam, 2 to 6 percent slopes.....	365
WdA0—Washtenaw sandy loam and loam, 0 to 2 percent slopes.....	366
WdB0—Washtenaw sandy loam and loam, 2 to 6 percent slopes.....	367
WeA0—Willette muck, 0 to 2 percent slopes.....	368
WfA—Wainola-Deford fine sands, 0 to 2 percent slopes.....	369
WgA—Wasepi loamy sand, 0 to 2 percent slopes.....	371
WkA—Wixom-Belleville loamy fine sands, 0 to 3 percent slopes.....	372
Wo—Wolcott loam.....	374
WpB—Wasepi-Boyer complex, loamy substratum, 0 to 6 percent slopes.....	375
WrA—Wasepi sandy loam, 0 to 3 percent slopes.....	377
WsA—Wasepi loamy sand, loamy substratum, 0 to 2 percent slopes.....	379
WtA—Wasepi sandy loam, clay subsoil variant, 0 to 3 percent slopes.....	380
References	382

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various 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 observed and described many soil profiles. A soil profile 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 or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

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

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

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

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

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

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

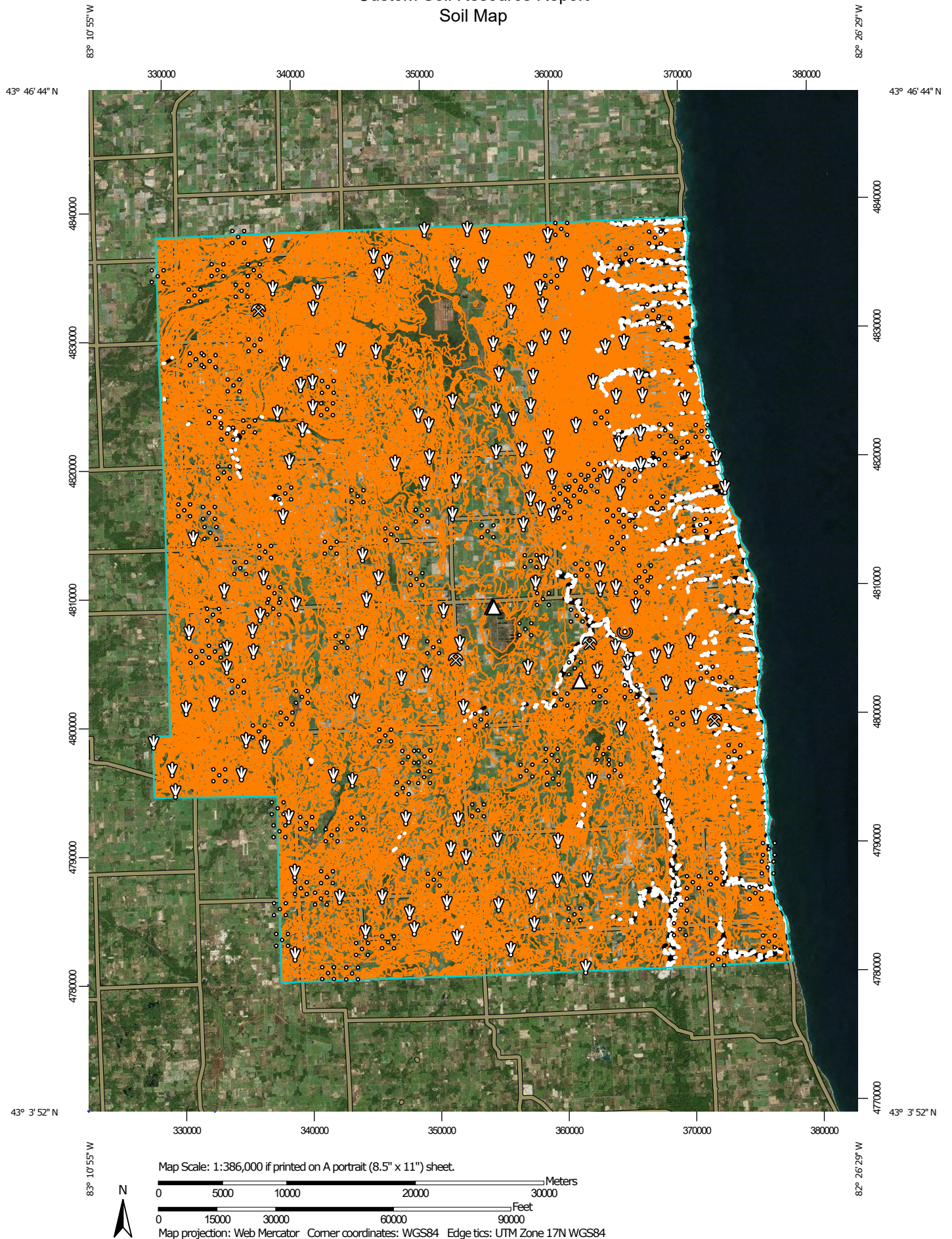
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sanilac County, Michigan

Survey Area Data: Version 21, Aug 28, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdrabA	Adrian muck, Erie-Huron lake plain, 0 to 1 percent slopes	220.4	0.0%
AeA0	Pipestone and Saugatuck loamy sands, 0 to 2 percent slopes	717.3	0.1%
AeB1	Pipestone and Saugatuck loamy sands, 2 to 6 percent slopes, slightly eroded	115.0	0.0%
AgA	Pipestone loamy sand, loamy substratum, 0 to 2 percent slopes	22.0	0.0%
AuA	Avoca loamy sand, 0 to 2 percent slopes	199.0	0.0%
AvA	Avoca loamy sand, 0 to 3 percent slopes	52.4	0.0%
AwA	Avoca loamy fine sand, 0 to 3 percent slopes	11.5	0.0%
BaA0	Bach silt loam, 0 to 2 percent slopes	237.8	0.0%
Bc	Bach very fine sandy loam	6.0	0.0%
BeB	Belding sandy loam, 2 to 6 percent slopes	29.4	0.0%
BIA	Blount loam, Erie-Huron Lake Plain, 0 to 2 percent slopes	1.2	0.0%
BoB	Boyer loamy sand, 0 to 6 percent slopes	44.4	0.0%
BrB	Boyer loamy sand, 1 to 6 percent slopes	1.0	0.0%
BsB	Boyer sandy loam, 0 to 6 percent slopes	29.1	0.0%
BsC	Boyer sandy loam, 6 to 12 percent slopes	8.3	0.0%
Bv	Brevort loamy sand	22.3	0.0%
Bw	Brookston loam	7.1	0.0%
CaA0	Capac loam and fine sandy loam, 0 to 2 percent slopes	1,653.0	0.3%
CaB1	Capac loam and fine sandy loam, 2 to 6 percent slopes, slightly eroded	41.5	0.0%
CarabA	Carlisle muck, 0 to 2 percent slopes	6.7	0.0%
CbA0	Capac silt loam and loam, 0 to 2 percent slopes	2,530.4	0.4%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CbB1	Capac silt loam and loam, 2 to 6 percent slopes, slightly eroded	19.5	0.0%
CcA0	Carlisle muck, 0 to 2 percent slopes	993.5	0.2%
CdA0	Carlisle and Linwood mucks, 0 to 2 percent slopes	6,648.6	1.1%
Ce	Clay pit	3.6	0.0%
CfA0	Coral fine sandy loam, 0 to 2 percent slopes	6,361.6	1.0%
CfB1	Coral fine sandy loam, 2 to 6 percent slopes, slightly eroded	5,724.3	0.9%
CgA1	Covert loamy sand, 0 to 2 percent slopes, slightly eroded	593.0	0.1%
CgB1	Covert loamy sand, 2 to 7 percent slopes, slightly eroded	566.0	0.1%
ChB	Chelsea loamy sand, 0 to 6 percent slopes	2.9	0.0%
CiC	Chelsea fine sand, 6 to 12 percent slopes	4.4	0.0%
CkB	Capac loam, 1 to 5 percent slopes	161.8	0.0%
Cl	Colwood loam	0.2	0.0%
CnB	Covert sand, 0 to 6 percent slopes	12.9	0.0%
CoA	Covert sand, loamy substratum, 0 to 2 percent slopes	15.7	0.0%
CpA	Capac fine sandy loam, 0 to 2 percent slopes	82.5	0.0%
CpB	Capac fine sandy loam, 2 to 6 percent slopes	147.5	0.0%
Ct	Cohoctah sandy loam	50.7	0.0%
CvrabA	Conover loam, 0 to 3 percent slopes	77,271.9	12.5%
CvracB	Conover-Williamstown loams, 0 to 6 percent slopes	2,263.3	0.4%
Cx	Corunna sandy loam	71.2	0.0%
De	Deford fine sand	2.9	0.0%
EaA1	Eastport, Arenac, and Kalkaska sands, 0 to 2 percent slopes, slightly eroded	182.4	0.0%
EaB1	Eastport, Arenac, and Kalkaska sands, 2 to 7 percent slopes, slightly eroded	350.0	0.1%
EaC1	Eastport, Arenac, and Kalkaska sands, 7 to 14 percent slopes, slightly eroded	105.7	0.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EbA0	Eastport fine sand and beach sand, 0 to 2 percent slopes	155.7	0.0%
EbC0	Eastport fine sand and beach sand, 2 to 18 percent slopes	153.9	0.0%
EcA0	Edmore and Ensley sandy loams, 0 to 2 percent slopes	5,091.0	0.8%
EcB1	Edmore and Ensley sandy loams, 2 to 6 percent slopes, slightly eroded	38.0	0.0%
EdA0	Edwards muck, 0 to 2 percent slopes	869.9	0.1%
EeA0	Epoufette and Ronald sandy loams, 0 to 2 percent slopes	1,894.7	0.3%
EeB1	Epoufette and Ronald sandy loams, 2 to 6 percent slopes, slightly eroded	49.5	0.0%
EsB	Eastport sand, 0 to 6 percent slopes	56.1	0.0%
FaA	Fabius-Wasepi sandy loams, 0 to 2 percent slopes	1.2	0.0%
Fn	Fluvaquents, loamy	25.0	0.0%
GaC1	Gagetown silt loam, 6 to 12 percent slopes, slightly eroded	64.3	0.0%
GaC2	Gagetown silt loam, 6 to 12 percent slopes, moderately eroded	45.6	0.0%
GaD2	Gagetown silt loam, 12 to 18 percent slopes, moderately eroded	21.9	0.0%
GbA0	Gladwin and Palo sandy loams, 0 to 2 percent slopes	3,591.1	0.6%
GbB1	Gladwin and Palo sandy loams, 2 to 7 percent slopes, slightly eroded	1,374.0	0.2%
Gc	Gravel pit	538.2	0.1%
GdA0	Greenwood peat, 0 to 2 percent slopes	2,535.9	0.4%
GeA1	Guelph loam, 0 to 2 percent slopes, slightly eroded	3,026.1	0.5%
GeB1	Guelph loam, 2 to 6 percent slopes, slightly eroded	11,858.0	1.9%
GeB2	Guelph loam, 2 to 6 percent slopes, moderately eroded	1,166.4	0.2%
GeC0	Guelph loam, 6 to 12 percent slopes	113.1	0.0%
GeC1	Guelph loam, 6 to 12 percent slopes, slightly eroded	1,416.3	0.2%
GeC2	Guelph loam, 6 to 12 percent slopes, moderately eroded	2,880.9	0.5%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GeC3	Guelph loam, 6 to 12 percent slopes, severely eroded	134.4	0.0%
GeD0	Guelph loam, 12 to 18 percent slopes	11.7	0.0%
GeD1	Guelph loam, 12 to 18 percent slopes, slightly eroded	118.3	0.0%
GeD2	Guelph loam, 12 to 18 percent slopes, moderately eroded	204.9	0.0%
GeD3	Guelph loam, 12 to 18 percent slopes, severely eroded	117.1	0.0%
GfA1	Guelph loam and silt loam, 0 to 2 percent slopes, slightly eroded	6,850.3	1.1%
GfA2	Guelph loam and silt loam, 0 to 2 percent slopes, moderately eroded	477.8	0.1%
GfB1	Guelph loam and silt loam, 2 to 6 percent slopes, slightly eroded	14,617.8	2.4%
GfB2	Guelph loam and silt loam, 2 to 6 percent slopes, moderately eroded	8,642.2	1.4%
GfB3	Guelph loam and silt loam, 2 to 6 percent slopes, severely eroded	285.1	0.0%
GfC1	Guelph loam and silt loam, 6 to 12 percent slopes, slightly eroded	1,197.8	0.2%
GfC2	Guelph loam and silt loam, 6 to 12 percent slopes, moderately eroded	6,310.9	1.0%
GfC3	Guelph loam and silt loam, 6 to 12 percent slopes, severely eroded	1,797.3	0.3%
GfD1	Guelph loam and silt loam, 12 to 18 percent slopes, slightly eroded	184.4	0.0%
GfD2	Guelph loam and silt loam, 12 to 18 percent slopes, moderately eroded	872.7	0.1%
GfD3	Guelph loam and silt loam, 12 to 18 percent slopes, severely eroded	800.2	0.1%
GfE1	Guelph loam and silt loam, 18+ percent slopes, slightly eroded	96.8	0.0%
GfE2	Guelph loam and silt loam, 18+ percent slopes, moderately eroded	168.0	0.0%
GfE3	Guelph loam and silt loam, 18+ percent slopes, severely eroded	278.6	0.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
GgB	Guelph-Londo loams, 2 to 6 percent slopes	940.7	0.2%
GhB	Guelph-Londo loams, 0 to 6 percent slopes	36.4	0.0%
GkB	Grindstone-Kilmanagh loams, 0 to 4 percent slopes	210.4	0.0%
Gm	Gilford sandy loam	48.0	0.0%
Gn	Granby loamy fine sand	62.9	0.0%
HbA0	Houghton and Palms mucks, 0 to 2 percent slopes	6,714.0	1.1%
HcB1	Huron silt loam, 2 to 6 percent slopes, slightly eroded	22.5	0.0%
HgtahA	Houghton muck, 0 to 1 percent slopes	134.7	0.0%
HgtaiA	Houghton muck, Erie-Huron lake plain, 0 to 1 percent slopes	110.7	0.0%
IaA0	Iosco and Menominee loamy sands, 0 to 2 percent slopes	848.5	0.1%
IaB1	Iosco and Menominee loamy sands, 2 to 6 percent slopes, slightly eroded	652.1	0.1%
IbA0	Iosco and Winegars sandy loams, 0 to 2 percent slopes	5,624.9	0.9%
IbB1	Iosco and Winegars sandy loams, 2 to 6 percent slopes, slightly eroded	40.3	0.0%
IcA0	Iosco sandy loam and Covert loamy sand, 0 to 2 percent slopes	6,577.4	1.1%
IcB1	Iosco sandy loam and Covert loamy sand, 2 to 7 percent slopes, slightly eroded	973.6	0.2%
IcC1	Iosco sandy loam and Covert loamy sand, 7 to 14 percent slopes, slightly eroded	177.7	0.0%
IcD1	Iosco sandy loam and Covert loamy sand, 14+ percent slopes, slightly eroded	11.8	0.0%
JaA0	Jeddo silty clay loam, 0 to 2 percent slopes	4,577.2	0.7%
Jd	Jeddo silt loam	29.1	0.0%
KaA1	Kalkaska and Wallace fine sands, 0 to 2 percent slopes, slightly eroded	121.7	0.0%
KaB1	Kalkaska and Wallace fine sands, 2 to 8 percent slopes, slightly eroded	377.0	0.1%
KaC1	Kalkaska and Wallace fine sands, 8 to 18 percent slopes, slightly eroded	72.7	0.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KbA0	Kerston muck, 0 to 2 percent slopes	188.8	0.0%
KcA	Kibbie loam, 0 to 2 percent slopes	20.4	0.0%
KcB	Kibbie loam, 2 to 6 percent slopes	0.8	0.0%
Kd	Kilmanagh loam	148.5	0.0%
La	Lake beach, sandy	242.2	0.0%
Lb	Lake beach, rocky	48.5	0.0%
Lc	Lake beach, stony	73.4	0.0%
LdA0	Linwood muck, 0 to 2 percent slopes	6,150.7	1.0%
LeA0	Linwood and Timakwa mucks, 0 to 2 percent slopes	2,154.8	0.3%
LgB2	Londo loam, 0 to 5 percent slopes, moderately eroded	919.4	0.1%
LkA	Londo loam, 0 to 3 percent slopes	24,086.9	3.9%
Lm	Lamson fine sandy loam	55.0	0.0%
Ln	Linwood muck	215.9	0.0%
LpA	Londo complex, 0 to 2 percent slopes	93.6	0.0%
MaA1	McBride fine sandy loam, 0 to 2 percent slopes, slightly eroded	616.4	0.1%
MaB1	McBride fine sandy loam, 2 to 6 percent slopes, slightly eroded	7,878.3	1.3%
MaB2	McBride fine sandy loam, 2 to 6 percent slopes, moderately eroded	485.1	0.1%
MaC1	McBride fine sandy loam, 6 to 12 percent slopes, slightly eroded	589.9	0.1%
MaC2	McBride fine sandy loam, 6 to 12 percent slopes, moderately eroded	2,218.7	0.4%
MaD1	McBride fine sandy loam, 12 to 18 percent slopes, slightly eroded	76.0	0.0%
MaD2	McBride fine sandy loam, 12 to 18 percent slopes, moderately eroded	180.4	0.0%
MaD3	McBride fine sandy loam, 12 to 18 percent slopes, severely eroded	81.2	0.0%
MbA1	McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded	1,236.5	0.2%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MbB1	McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, slightly eroded	3,582.3	0.6%
MbB3	McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, severely eroded	26.3	0.0%
MbC1	McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, slightly eroded	974.5	0.2%
MbC2	McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, moderately or severely eroded	84.1	0.0%
MbD1	McBride sandy loam and Montcalm loamy sand, 15 to 25 percent slopes, slightly eroded	165.5	0.0%
MbE3	McBride sandy loam and Montcalm loamy sand, 15+ percent slopes, moderately or severely eroded	70.8	0.0%
McA0	Mcgregor sandy loam, 0 to 2 percent slopes	1,095.7	0.2%
McB1	Mcgregor sandy loam, 2 to 6 percent slopes, slightly eroded	43.9	0.0%
Md	Made land	143.9	0.0%
MeA1	Mancelona loamy sand, 0 to 3 percent slopes, slightly eroded	1,856.0	0.3%
MeB1	Mancelona loamy sand, 3 to 8 percent slopes, slightly eroded	4,568.4	0.7%
MeB2	Mancelona loamy sand, 3 to 8 percent slopes, moderately eroded	78.6	0.0%
MeC1	Mancelona loamy sand, 8 to 15 percent slopes, slightly eroded	844.8	0.1%
MeC2	Mancelona loamy sand, 8 to 15 percent slopes, moderately eroded	512.6	0.1%
MeD1	Mancelona loamy sand, 15+ percent slopes, slightly eroded	364.5	0.1%
MeD2	Mancelona loamy sand, 15+ percent slopes, moderately eroded	69.8	0.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MeD3	Manelona loamy sand, 15+ percent slopes, severely eroded	123.3	0.0%
MfA1	Marlette loam, 0 to 2 percent slopes, slightly eroded	4,767.0	0.8%
MfB1	Marlette loam, 2 to 6 percent slopes, slightly eroded	7,391.3	1.2%
MfB2	Marlette loam, 2 to 6 percent slopes, moderately eroded	231.3	0.0%
MfB3	Marlette loam, 2 to 6 percent slopes, severely eroded	30.6	0.0%
MfC1	Marlette loam, 6 to 12 percent slopes, slightly eroded	1,153.5	0.2%
MfC2	Marlette loam, 6 to 12 percent slopes, moderately eroded	743.2	0.1%
MfC3	Marlette loam, 6 to 12 percent slopes, severely eroded	30.2	0.0%
MfD1	Marlette loam, 12 to 18 percent slopes, slightly eroded	149.6	0.0%
MfD2	Marlette loam, 12 to 18 percent slopes, moderately eroded	72.7	0.0%
MfD3	Marlette loam, 12 to 18 percent slopes, severely eroded	55.2	0.0%
MfE2	Marlette loam, 18 to 25 percent slopes, moderately eroded	31.6	0.0%
MgA1	Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded	4,666.4	0.8%
MgB1	Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded	3,876.6	0.6%
MgB2	Marlette silt loam and loam, 2 to 6 percent slopes, moderately eroded	197.5	0.0%
MgC1	Marlette silt loam and loam, 6 to 12 percent slopes, slightly eroded	410.6	0.1%
MgC2	Marlette silt loam and loam, 6 to 12 percent slopes, moderately eroded	53.3	0.0%
MhA1	Melita and Arenac loamy sands, 0 to 2 percent slopes, slightly eroded	9,069.2	1.5%
MhB1	Melita and Arenac loamy sands, 2 to 7 percent slopes, slightly eroded	2,927.1	0.5%
MkC1	Melita loamy sand, 7 to 14 percent slopes, slightly eroded	352.5	0.1%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MkD2	Melita loamy sand, 14+ percent slopes, slightly to severely eroded	39.8	0.0%
MIA	Metamora sandy loam, 0 to 2 percent slopes	11.7	0.0%
MmB	Menominee loamy sand, 2 to 6 percent slopes	23.7	0.0%
MmC1	Menominee loamy sand, 6 to 12 percent slopes, slightly eroded	39.9	0.0%
MmC2	Menominee loamy sand, 6 to 12 percent slopes, moderately eroded	71.8	0.0%
MnA0	Montcalm loamy sand, 0 to 2 percent slopes	4.1	0.0%
MnA1	Montcalm loamy sand, 0 to 2 percent slopes, slightly eroded	178.4	0.0%
MnB0	Montcalm loamy sand, 2 to 6 percent slopes	34.0	0.0%
MnB1	Montcalm loamy sand, 2 to 6 percent slopes, slightly eroded	3,672.5	0.6%
MnB2	Montcalm loamy sand, 2 to 6 percent slopes, moderately eroded	358.3	0.1%
MnC1	Montcalm loamy sand, 6 to 12 percent slopes, slightly eroded	442.5	0.1%
MnC2	Montcalm loamy sand, 6 to 12 percent slopes, moderately eroded	651.2	0.1%
MnD1	Montcalm loamy sand, 12 to 18 percent slopes, slightly eroded	110.7	0.0%
MnD2	Montcalm loamy sand, 12 to 18 percent slopes, moderately eroded	92.7	0.0%
MoB	Miami-Dighton sandy loams, 2 to 6 percent slopes	1.1	0.0%
MpB	Marlette sandy loam, 2 to 6 percent slopes	52.8	0.0%
MpB2	Marlette sandy loam, 2 to 6 percent slopes, moderately eroded	25.7	0.0%
MpC	Marlette sandy loam, 6 to 12 percent slopes	21.3	0.0%
MpC2	Marlette sandy loam, 6 to 12 percent slopes, moderately eroded	1.5	0.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MrA	Minoa fine sandy loam, clay substratum, 0 to 3 percent slopes	2.9	0.0%
MsB	Mancelona loamy sand, moderately fine substratum, 0 to 6 percent slopes	2.8	0.0%
MtB	Marlette-Capac complex, 0 to 6 percent slopes	192.8	0.0%
MvB	Metamora sandy loam, 0 to 4 percent slopes	78.8	0.0%
Mw	Mussey-Gilford sandy loams	6.2	0.0%
MxB	Metea loamy fine sand, 1 to 6 percent slopes	12.3	0.0%
NaA1	Newaygo sandy loam, 0 to 2 percent slopes, slightly eroded	1,147.6	0.2%
NaB1	Newaygo sandy loam, 2 to 6 percent slopes, slightly eroded	808.6	0.1%
NaC1	Newaygo sandy loam, 6 to 12 percent slopes, slightly eroded	70.2	0.0%
NaC2	Newaygo sandy loam, 6 to 12 percent slopes, moderately eroded	33.8	0.0%
OaA0	Otisco loamy sand, 0 to 2 percent slopes	1,284.6	0.2%
OaB1	Otisco loamy sand, 2 to 6 percent slopes, slightly eroded	691.4	0.1%
PaA0	Palms muck, 0 to 2 percent slopes	3,166.2	0.5%
PbA0	Palms and Adrian mucks, 0 to 2 percent slopes	6,151.5	1.0%
PcA0	Parkhill loam, 0 to 1 percent slopes	69,756.6	11.3%
PcB1	Parkhill loam, 2 to 6 percent slopes, slightly eroded	209.6	0.0%
PdA0	Parkhill loam and clay loam, 0 to 2 percent slopes	101,008.0	16.4%
PeA0	Parkhill loam and mucky loam, 0 to 2 percent slopes	26,852.5	4.4%
PfA0	Perth silt loam, 0 to 2 percent slopes	5.7	0.0%
PIB	Pert-Sims loams, 0 to 6 percent slopes	20.8	0.0%
Pm	Palms muck	21.8	0.0%
Pn	Pinnebog muck	2.8	0.0%
PoB	Perrin loamy sand, 0 to 4 percent slopes	15.5	0.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PrB	Pert loam, 2 to 6 percent slopes	4.7	0.0%
RaA0	Richter and Tonkey bouldery sandy loam and loam, 0 to 2 percent slopes	2,584.1	0.4%
RaB1	Richter and Tonkey bouldery sandy loam and loam, 2 to 6 percent slopes, slightly eroded	70.0	0.0%
RbA0	Rifle peat, 0 to 2 percent slopes	2,296.8	0.4%
RcA0	Roscommon loamy sand, 0 to 2 percent slopes	2,279.0	0.4%
RdA0	Roscommon mucky loamy sand, 0 to 2 percent slopes	3,314.7	0.5%
ReA1	Grattan sand, 0 to 2 percent slopes, slightly eroded	433.4	0.1%
ReB1	Grattan sand, 2 to 7 percent slopes, slightly eroded	1,747.3	0.3%
ReB3	Grattan sand, 2 to 7 percent slopes, moderately or severely eroded	10.6	0.0%
ReC1	Grattan sand, 7 to 14 percent slopes, slightly eroded	948.4	0.2%
ReC2	Grattan sand, 7 to 14 percent slopes, moderately or severely eroded	105.4	0.0%
ReD1	Grattan sand, 14+ percent slopes, slightly eroded	231.5	0.0%
ReD3	Grattan sand, 14+ percent slopes, moderately or severely eroded	102.7	0.0%
RpA	Rapson loamy sand, 0 to 2 percent slopes	47.2	0.0%
SaA0	Sanilac silt loam, 0 to 2 percent slopes	1,312.1	0.2%
SaB1	Sanilac silt loam, 2 to 6 percent slopes, slightly eroded	903.9	0.1%
SbA0	Saverine and losco fine sandy loams, 0 to 2 percent slopes	22,053.8	3.6%
SbB1	Saverine and losco fine sandy loams, 2 to 7 percent slopes, slightly eroded	2,710.8	0.4%
SbB2	Saverine and losco fine sandy loams, 2 to 7 percent slopes, moderately eroded	56.4	0.0%
SbC1	Saverine and losco fine sandy loams, 7 to 14 percent slopes, slightly eroded	336.6	0.1%
SbC2	Saverine and losco fine sandy loams, 7 to 14 percent slopes, moderately eroded	143.4	0.0%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SbD1	Saverine and losco fine sandy loams, 14+ percent slopes, slightly eroded	70.3	0.0%
SbD2	Saverine and losco fine sandy loams, 14+ percent slopes, moderately eroded	41.3	0.0%
ScA0	Spalding peat, 0 to 2 percent slopes	2,220.1	0.4%
SfA	Selfridge loamy sand, 0 to 3 percent slopes	189.8	0.0%
ShA	Shebeon loam, 0 to 2 percent slopes	120.0	0.0%
SloacA	Sloan, frequently flooded, and Ceresco, occasionally flooded, soils, 0 to 3 percent slopes	11,669.6	1.9%
Sn	Sloan loam	15.9	0.0%
SpB	Spinks loamy fine sand, 0 to 6 percent slopes	39.5	0.0%
TaA0	Tappan loam, 0 to 1 percent slopes	1,089.9	0.2%
TbA0	Tappan mucky loam, 0 to 2 percent slopes	1,616.0	0.3%
TcA0	Timakwa muck, 0 to 2 percent slopes	1,454.2	0.2%
TdA0	Thomas mucky silt loam, 0 to 2 percent slopes	777.9	0.1%
TeA0	Tobico mucky loamy sand, 0 to 2 percent slopes	95.8	0.0%
TfA0	Tonkey sandy loam, 0 to 2 percent slopes	644.3	0.1%
TgA0	Tonkey and Bach fine sandy loams, 0 to 2 percent slopes	14,255.5	2.3%
TgB1	Tonkey and Bach fine sandy loams, 2 to 7 percent slopes, slightly eroded	28.4	0.0%
ThA0	Tyre loamy sand and sandy loam, 0 to 2 percent slopes	137.3	0.0%
ThB1	Tyre loamy sand and sandy loam, 2 to 6 percent slopes, slightly eroded	50.8	0.0%
ThC1	Tyre loamy sand and sandy loam, 6 to 12 percent slopes, slightly eroded	46.3	0.0%
Tk	Tonkey fine sandy loam	6.3	0.0%
To	Tobico mucky sandy loam	24.6	0.0%
TrA	Tedrow loamy sand, 0 to 2 percent slopes	4.0	0.0%
W	Water	530.5	0.1%

Custom Soil Resource Report

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WaA0	Wallkill loam, 0 to 2 percent slopes	540.6	0.1%
WbA0	Warners muck and marl, 0 to 2 percent slopes	57.0	0.0%
WcA0	Washtenaw loam and silt loam, 0 to 2 percent slopes	4,632.6	0.8%
WcB0	Washtenaw loam and silt loam, 2 to 6 percent slopes	479.9	0.1%
WdA0	Washtenaw sandy loam and loam, 0 to 2 percent slopes	1,647.3	0.3%
WdB0	Washtenaw sandy loam and loam, 2 to 6 percent slopes	83.5	0.0%
WeA0	Willette muck, 0 to 2 percent slopes	510.4	0.1%
WfA	Wainola-Deford fine sands, 0 to 2 percent slopes	25.9	0.0%
WgA	Wasepi loamy sand, 0 to 2 percent slopes	1.5	0.0%
WkA	Wixom-Belleville loamy fine sands, 0 to 3 percent slopes	13.4	0.0%
Wo	Wolcott loam	75.1	0.0%
WpB	Wasepi-Boyer complex, loamy substratum, 0 to 6 percent slopes	51.3	0.0%
WrA	Wasepi sandy loam, 0 to 3 percent slopes	11.2	0.0%
WsA	Wasepi loamy sand, loamy substratum, 0 to 2 percent slopes	28.3	0.0%
WtA	Wasepi sandy loam, clay subsoil variant, 0 to 3 percent slopes	5.7	0.0%
Totals for Area of Interest		617,026.4	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

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

including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

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

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

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, 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. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

Custom Soil Resource Report

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. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Sanilac County, Michigan

AdrabA—Adrian muck, Erie-Huron lake plain, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2zdk1
Elevation: 610 to 800 feet
Mean annual precipitation: 30 to 37 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 130 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Adrian and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adrian

Setting

Landform: Depressions on drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear
Parent material: Herbaceous organic material over sandy and gravelly glaciofluvial deposits

Typical profile

Oa - 0 to 34 inches: muck
Cg - 34 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 22 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.4 to 2.4 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Very high (about 15.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Minor Components

Granby

Percent of map unit: 5 percent
Landform: Depressions on drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

Edwards

Percent of map unit: 1 percent
Landform: Depressions on drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Houghton

Percent of map unit: 1 percent
Landform: Depressions on drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

AeA0—Pipestone and Saugatuck loamy sands, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2qz3j
Elevation: 610 to 800 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Pipestone and similar soils: 55 percent
Saugatuck and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pipestone

Setting

Landform: Lake plains, knolls on outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 5 inches: loamy sand

E - 5 to 9 inches: sand

Bhs - 9 to 13 inches: sand

Bs - 13 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: A/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Saugatuck

Setting

Landform: Lake plains, knolls on outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 5 inches: loamy sand

E - 5 to 8 inches: sand

Bhsm1 - 8 to 11 inches: sand

Bhsm2 - 11 to 15 inches: sand

Bs1 - 15 to 22 inches: sand

Bs2 - 22 to 26 inches: sand

BC - 26 to 55 inches: sand

C - 55 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

AeB1—Pipestone and Saugatuck loamy sands, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3k
Elevation: 610 to 800 feet
Mean annual precipitation: 32 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Pipestone and similar soils: 55 percent
Saugatuck and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pipestone

Setting

Landform: Lake plains, knolls on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 5 inches: loamy sand
E - 5 to 9 inches: sand
Bhs - 9 to 13 inches: sand
Bs - 13 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Saugatuck

Setting

Landform: Lake plains, knolls on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 5 inches: loamy sand
E - 5 to 8 inches: sand
Bhsm1 - 8 to 11 inches: sand
Bhsm2 - 11 to 15 inches: sand
Bs1 - 15 to 22 inches: sand
Bs2 - 22 to 26 inches: sand
BC - 26 to 55 inches: sand
C - 55 to 80 inches: sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 0.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

AgA—Pipestone loamy sand, loamy substratum, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2qz49
Elevation: 760 to 840 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Pipestone, loamy substratum, and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pipestone, Loamy Substratum

Setting

Landform: Outwash plains, swales on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 11 inches: loamy sand
E - 11 to 13 inches: sand
Bhs - 13 to 15 inches: sand
Bs - 15 to 19 inches: sand
BC - 19 to 24 inches: sand
C1 - 24 to 42 inches: sand
2C2 - 42 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D

Custom Soil Resource Report

Ecological site: F098XA017MI - Moist Acidic Drift Flats

Hydric soil rating: No

Minor Components

Granby

Percent of map unit: 3 percent

Landform: Depressions on lake plains, drainageways on outwash plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA020MI - Wet Sandy Drift Depressions

Hydric soil rating: Yes

Pipestone

Percent of map unit: 2 percent

Landform: Outwash plains, knolls on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F098XA017MI - Moist Acidic Drift Flats

Hydric soil rating: No

AuA—Avoca loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 68d7

Elevation: 580 to 830 feet

Mean annual precipitation: 31 to 35 inches

Mean annual air temperature: 45 to 47 degrees F

Frost-free period: 135 to 184 days

Farmland classification: Farmland of local importance

Map Unit Composition

Avoca and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Avoca

Setting

Landform: Ridges on till plains, knolls on till plains, flats on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear, convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 4 inches: loamy sand

E - 4 to 6 inches: fine sand

Bs1 - 6 to 15 inches: sand

Custom Soil Resource Report

Bs2 - 15 to 24 inches: sand
C1 - 24 to 39 inches: fine sand
2C2 - 39 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Minor Components

Shebeon

Percent of map unit: 7 percent
Landform: Ridges on till plains, knolls on till plains, flats on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Badaxe

Percent of map unit: 4 percent
Landform: Knolls on till plains, ridges on till plains, flats on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Kilmanagh

Percent of map unit: 3 percent
Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Belleville

Percent of map unit: 1 percent
Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

AvA—Avoca loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 6905
Elevation: 580 to 830 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Farmland of local importance

Map Unit Composition

Avoca and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Avoca

Setting

Landform: Knolls on water-lain moraines, ridges on water-lain moraines
Landform position (two-dimensional): Backslope, shoulder, summit, footslope, toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 10 inches: loamy sand
E - 10 to 12 inches: sand
Bhs - 12 to 18 inches: fine sand
Bs - 18 to 26 inches: fine sand
Cg1 - 26 to 33 inches: fine sand
2Cg2 - 33 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 3 percent

Landform: Drainageways on water-lain moraines, depressions on water-lain moraines

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Londo

Percent of map unit: 2 percent

Landform: Swales on water-lain moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

AwA—Avoca loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 692f

Elevation: 580 to 860 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 146 to 188 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Avoca and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Avoca

Setting

Landform: Knolls, ridges, flats

Landform position (three-dimensional): Rise, talf

Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Convex, linear

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 11 inches: loamy fine sand

Bs - 11 to 20 inches: loamy fine sand

2C1 - 20 to 24 inches: loam

2C2 - 24 to 80 inches: loam

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Minor Components

Metamora

Percent of map unit: 3 percent

Landform: Knolls, flats, ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex, linear

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Londo

Percent of map unit: 3 percent

Landform: Knolls, flats, ridges

Landform position (three-dimensional): Rise, talf

Down-slope shape: Linear

Across-slope shape: Convex, linear

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Tappan

Percent of map unit: 2 percent

Landform: Depressions, drainageways

Landform position (three-dimensional): Dip, talf

Down-slope shape: Linear

Across-slope shape: Concave, linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Corunna

Percent of map unit: 2 percent
Landform: Drainageways, depressions
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

BaA0—Bach silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69w2
Elevation: 580 to 820 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Bach and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bach

Setting

Landform: Deltas on lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: silt loam
Bg1 - 7 to 20 inches: very fine sandy loam
Bg2 - 20 to 34 inches: very fine sandy loam
C - 34 to 80 inches: stratified fine sand to very fine sand to silt

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Bc—Bach very fine sandy loam

Map Unit Setting

National map unit symbol: 693s

Elevation: 610 to 890 feet

Mean annual precipitation: 31 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 146 to 188 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Bach and similar soils: 96 percent

Minor components: 4 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bach

Setting

Landform: Depressions, flats, drainageways

Landform position (three-dimensional): Dip, tal

Down-slope shape: Linear

Across-slope shape: Concave, linear

Parent material: Calcareous loamy glaciolacustrine deposits

Typical profile

Ap - 0 to 14 inches: very fine sandy loam

Bg - 14 to 23 inches: very fine sandy loam

Cg - 23 to 35 inches: very fine sandy loam

C1 - 35 to 41 inches: very fine sandy loam

C2 - 41 to 80 inches: very fine sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 11.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minor Components

Sanilac

Percent of map unit: 4 percent

Landform: Knolls

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

BeB—Belding sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6ft

Elevation: 760 to 950 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 108 to 178 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Belding and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Belding

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: sandy loam

Bs - 7 to 17 inches: sandy loam

E - 17 to 23 inches: sandy loam

Bt1 - 23 to 36 inches: loam

2Bt2 - 36 to 40 inches: clay loam

2C - 40 to 80 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Minor Components

Breckenridge

Percent of map unit: 5 percent
Landform: Swales on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

BIA—Blount loam, Erie-Huron Lake Plain, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2wb29
Elevation: 540 to 850 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 135 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Blount and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blount

Setting

Landform: Nearshore zones (relict), wave-worked till plains

Custom Soil Resource Report

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Moderately fine-textured lodgment till

Typical profile

Ap - 0 to 9 inches: loam
Bt - 9 to 27 inches: clay
BC - 27 to 37 inches: clay loam
Cd - 37 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 19 to 49 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Pewamo

Percent of map unit: 7 percent
Landform: Nearshore zones (relict), wave-worked till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Microfeatures of landform position: Open depressions
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Metamora

Percent of map unit: 5 percent
Landform: Nearshore zones (relict), wave-worked till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Microfeatures of landform position: Rises
Down-slope shape: Linear
Across-slope shape: Convex, linear
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Selfridge

Percent of map unit: 3 percent
Landform: Nearshore zones (relict), wave-worked till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Rises
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Ecological site: F099XY003MI - Warm Moist Sandy Depression
Hydric soil rating: No

BoB—Boyer loamy sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 68c2
Elevation: 630 to 850 feet
Mean annual precipitation: 32 to 34 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Not prime farmland

Map Unit Composition

Boyer and similar soils: 89 percent
Minor components: 11 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boyer

Setting

Landform: Ridges on outwash plains, knolls on outwash plains, flats on outwash plains, deltas on outwash plains, valley trains on outwash plains
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Sandy and/or loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: loamy sand
E - 7 to 17 inches: sand
Bt1 - 17 to 23 inches: gravelly loam
Bt2 - 23 to 27 inches: loamy sand
2C - 27 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 7.50 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Minor Components

Covert

Percent of map unit: 5 percent

Landform: Swales on outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Riverdale

Percent of map unit: 5 percent

Landform: Outwash plains, drainageways, depressions, ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Pipestone

Percent of map unit: 1 percent

Landform: Drainageways on outwash plains, depressions on outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Convex, linear

Across-slope shape: Linear

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

BrB—Boyer loamy sand, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2t6l4

Elevation: 700 to 1,250 feet

Mean annual precipitation: 32 to 40 inches

Mean annual air temperature: 46 to 50 degrees F

Custom Soil Resource Report

Frost-free period: 120 to 180 days

Farmland classification: Farmland of local importance

Map Unit Composition

Boyer and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boyer

Setting

Landform: Terraces, moraines

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Head slope, tread

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy outwash and/or sandy outwash over sandy and gravelly outwash

Typical profile

Ap - 0 to 9 inches: loamy sand

E - 9 to 17 inches: loamy sand

Bt - 17 to 30 inches: sandy loam

2C - 30 to 79 inches: stratified coarse sand to gravelly sand to very gravelly sand

Properties and qualities

Slope: 1 to 6 percent

Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 40 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F098XA014MI - Dry Sandy Drift Plains

Hydric soil rating: No

Minor Components

Oshtemo

Percent of map unit: 9 percent

Landform: Moraines, stream terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, tread

Down-slope shape: Linear

Across-slope shape: Linear, convex

Ecological site: F098XA015MI - Dry Loamy Drift Plains

Hydric soil rating: No

Bronson

Percent of map unit: 6 percent

Landform: Stream terraces, moraines

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope, tread

Down-slope shape: Linear

Across-slope shape: Concave

Ecological site: F098XA011MI - Moist Loamy Drift Plains

Hydric soil rating: No

BsB—Boyer sandy loam, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 692q

Elevation: 590 to 920 feet

Mean annual precipitation: 31 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 146 to 188 days

Farmland classification: Farmland of local importance

Map Unit Composition

Boyer and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boyer

Setting

Landform: Flats, ridges, knolls

Landform position (three-dimensional): Talf, rise

Down-slope shape: Linear

Across-slope shape: Linear, convex

Parent material: Loamy and/or sandy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: sandy loam

E - 8 to 18 inches: loamy sand

Bt - 18 to 28 inches: gravelly sandy loam

2C - 28 to 80 inches: gravelly sand

Properties and qualities

Slope: 0 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 9.00 in/hr)

Depth to water table: More than 80 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Minor Components

Wasepi

Percent of map unit: 10 percent
Landform: Depressions
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

BsC—Boyer sandy loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2t6l8
Elevation: 700 to 1,250 feet
Mean annual precipitation: 32 to 40 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 120 to 180 days
Farmland classification: Farmland of local importance

Map Unit Composition

Boyer and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Boyer

Setting

Landform: Moraines, stream terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Loamy outwash and/or sandy outwash over sandy and gravelly outwash

Typical profile

Ap - 0 to 9 inches: sandy loam

Custom Soil Resource Report

E - 9 to 17 inches: sandy loam

Bt - 17 to 30 inches: sandy loam

2C - 30 to 79 inches: stratified coarse sand to gravelly sand to very gravelly sand

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 40 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F098XA015MI - Dry Loamy Drift Plains

Hydric soil rating: No

Minor Components

Oshtemo

Percent of map unit: 9 percent

Landform: Moraines, stream terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, riser

Down-slope shape: Linear

Across-slope shape: Linear, convex

Ecological site: F098XA015MI - Dry Loamy Drift Plains

Hydric soil rating: No

Spinks

Percent of map unit: 6 percent

Landform: Stream terraces, moraines

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, riser

Down-slope shape: Linear

Across-slope shape: Convex, linear

Ecological site: F098XA014MI - Dry Sandy Drift Plains

Hydric soil rating: No

Bv—Brevort loamy sand

Map Unit Setting

National map unit symbol: 6fsh
Elevation: 770 to 920 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Brevort and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brevort

Setting

Landform: Flats on lake plains, depressions on outwash plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 10 inches: loamy sand
Bg1 - 10 to 15 inches: loamy fine sand
Bg2 - 15 to 22 inches: loamy sand
2Bg3 - 22 to 28 inches: coarse sandy loam
3C1 - 28 to 34 inches: coarse sand
4C2 - 34 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

Bw—Brookston loam

Map Unit Setting

National map unit symbol: 6fsj
Elevation: 770 to 1,130 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Brookston and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brookston

Setting

Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: loam
A - 8 to 12 inches: loam
Btg1 - 12 to 38 inches: clay loam
Btg2 - 38 to 48 inches: clay loam
Cg - 48 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

CaA0—Capac loam and fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69w3
Elevation: 710 to 830 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Capac and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Capac

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: loam
B/E - 8 to 10 inches: loam
Btg1 - 10 to 14 inches: loam
Btg2 - 14 to 22 inches: clay loam
Bt3 - 22 to 35 inches: loam
Cg - 35 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

CaB1—Capac loam and fine sandy loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69w4
Elevation: 720 to 810 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Capac and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Capac

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: loam
B/E - 8 to 10 inches: loam
Btg1 - 10 to 14 inches: loam
Btg2 - 14 to 22 inches: clay loam
Bt - 22 to 35 inches: loam
Cg - 35 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C/D

Ecological site: F098XA011MI - Moist Loamy Drift Plains

Hydric soil rating: No

Minor Components

Marlette

Percent of map unit: 5 percent

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F098XA015MI - Dry Loamy Drift Plains

Hydric soil rating: No

Parkhill

Percent of map unit: 3 percent

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA012MI - Wet Loamy Depressions

Hydric soil rating: Yes

CarabA—Carlisle muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2zdk5

Elevation: 740 to 990 feet

Mean annual precipitation: 31 to 41 inches

Mean annual air temperature: 45 to 50 degrees F

Frost-free period: 135 to 170 days

Farmland classification: Not prime farmland

Map Unit Composition

Carlisle and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carlisle

Setting

Landform: Depressions on till plains, depressions on outwash plains, depressions on glacial drainage channels, depressions on moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Woody organic material

Typical profile

Oa1 - 0 to 13 inches: muck
Oa2 - 13 to 37 inches: muck
Oa3 - 37 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 0.6
Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F098XA006MI - Mucky Depressions
Hydric soil rating: Yes

Minor Components

Wallkill

Percent of map unit: 4 percent
Landform: Depressions on till plains, depressions on moraines, depressions on glacial drainage channels
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

Linwood

Percent of map unit: 4 percent
Landform: Depressions on till plains, depressions on moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear

Custom Soil Resource Report

Across-slope shape: Concave, linear
Ecological site: F098XA006MI - Mucky Depressions
Hydric soil rating: Yes

Adrian

Percent of map unit: 2 percent
Landform: Depressions on outwash plains, depressions on outwash plains, drainageways on outwash plains, drainageways on glacial drainage channels, drainageways on moraines, depressions on moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F098XA006MI - Mucky Depressions
Hydric soil rating: Yes

CbA0—Capac silt loam and loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69w6
Elevation: 650 to 830 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Capac and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Capac

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: loam
B/E - 8 to 10 inches: loam
Btg1 - 10 to 14 inches: loam
Btg2 - 14 to 22 inches: clay loam
Bt - 22 to 35 inches: loam
Cg - 35 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

CbB1—Capac silt loam and loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69w7
Elevation: 720 to 820 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Capac and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Capac

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex

Custom Soil Resource Report

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: loam
B/E - 8 to 10 inches: loam
Btg1 - 10 to 14 inches: loam
Btg2 - 14 to 22 inches: clay loam
Bt - 22 to 35 inches: loam
Cg - 35 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Minor Components

Marlette

Percent of map unit: 5 percent
Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F098XA015MI - Dry Loamy Drift Plains
Hydric soil rating: No

CcA0—Carlisle muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69w9
Elevation: 740 to 770 feet
Mean annual precipitation: 30 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Carlisle and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carlisle

Setting

Landform: Moraines, flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material and/or woody organic material

Typical profile

Oa1 - 0 to 15 inches: muck

Oa2 - 15 to 25 inches: muck

Oa3 - 25 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)*

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

CdA0—Carlisle and Linwood mucks, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69wb

Elevation: 600 to 840 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Carlisle and similar soils: 60 percent

Linwood and similar soils: 40 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carlisle

Setting

Landform: Flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material and/or woody organic material

Typical profile

Oa1 - 0 to 15 inches: muck

Oa2 - 15 to 25 inches: muck

Oa3 - 25 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Description of Linwood

Setting

Landform: Flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Woody organic material over loamy till

Typical profile

Oa1 - 0 to 12 inches: muck

Oa2 - 12 to 25 inches: muck

Oa3 - 25 to 29 inches: muck

Cg - 29 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very high (about 17.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Ce—Clay pit

Map Unit Setting

National map unit symbol: 2mdjp

Elevation: 470 to 900 feet

Mean annual precipitation: 30 to 38 inches

Mean annual air temperature: 45 to 51 degrees F

Frost-free period: 128 to 205 days

Farmland classification: Not prime farmland

Map Unit Composition

Clay pit: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Clay Pit

Setting

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydric soil rating: Unranked

CfA0—Coral fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69wd

Elevation: 750 to 830 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Coral and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Coral

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 4 inches: fine sandy loam

E - 4 to 6 inches: fine sandy loam

Bs - 6 to 11 inches: fine sandy loam

E' - 11 to 14 inches: fine sandy loam

Bt - 14 to 23 inches: sandy clay loam

C - 23 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)*

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 20 percent

Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

CfB1—Coral fine sandy loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69wf

Elevation: 680 to 820 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Coral and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Coral

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 4 inches: fine sandy loam

E - 4 to 6 inches: fine sandy loam

Bs - 6 to 11 inches: fine sandy loam

E' - 11 to 14 inches: fine sandy loam

Bt - 14 to 23 inches: sandy clay loam

C - 23 to 80 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Medium

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)*

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 20 percent

Available water supply, 0 to 60 inches: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

CgA1—Covert loamy sand, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3l

Elevation: 580 to 790 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 137 to 179 days

Farmland classification: Not prime farmland

Map Unit Composition

Covert and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Covert

Setting

Landform: Beach ridges on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bs1 - 6 to 12 inches: sand

Bs2 - 12 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

CgB1—Covert loamy sand, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3m

Elevation: 610 to 790 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 137 to 179 days

Farmland classification: Not prime farmland

Map Unit Composition

Covert and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Covert

Setting

Landform: Beach ridges on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: sand
Bs1 - 6 to 12 inches: sand
Bs2 - 12 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

ChB—Chelsea loamy sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6fss
Elevation: 750 to 1,100 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Chelsea and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chelsea

Setting

Landform: Outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
Bw - 8 to 18 inches: sand
E - 18 to 44 inches: sand
E and Bt - 44 to 80 inches: sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F098XA014MI - Dry Sandy Drift Plains
Hydric soil rating: No

CiC—Chelsea fine sand, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 693c
Elevation: 630 to 880 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Not prime farmland

Map Unit Composition

Chelsea and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chelsea

Setting

Landform: Knolls on beach ridges

Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope

Landform position (three-dimensional): Interfluve, head slope, nose slope, side slope, base slope, crest

Down-slope shape: Linear

Across-slope shape: Convex, linear

Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 5 inches: fine sand

Bw1 - 5 to 18 inches: fine sand

Bw2 - 18 to 38 inches: fine sand

E - 38 to 50 inches: fine sand

E and Bt - 50 to 80 inches: fine sand

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Minor Components

Ottokee

Percent of map unit: 4 percent

Landform: Knolls on beach ridges

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Thetford

Percent of map unit: 3 percent

Landform: Drainageways on beach ridges, depressions on beach ridges

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Base slope, side slope

Down-slope shape: Linear

Across-slope shape: Convex, linear

Custom Soil Resource Report

Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

CkB—Capac loam, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: 693k
Elevation: 660 to 970 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 47 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Capac and similar soils: 93 percent
Minor components: 7 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Capac

Setting

Landform: Knolls on moraines, ridges, flats
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Loamy till

Typical profile

Ap - 0 to 10 inches: loam
B/E - 10 to 13 inches: loam
Bt1 - 13 to 26 inches: clay loam
Bt2 - 26 to 32 inches: clay loam
C - 32 to 80 inches: loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D

Custom Soil Resource Report

Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Minor Components

Wolcott

Percent of map unit: 3 percent
Landform: Depressions on moraines, drainageways on moraines
Landform position (three-dimensional): Rise, dip, talf
Down-slope shape: Linear
Across-slope shape: Convex, concave, linear
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

Marlette

Percent of map unit: 2 percent
Landform: Ridges on moraines, knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F098XA015MI - Dry Loamy Drift Plains
Hydric soil rating: No

Wixom

Percent of map unit: 2 percent
Landform: Knolls on moraines, ridges, flats
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear
Across-slope shape: Convex, linear
Ecological site: F098XA017MI - Moist Acidic Drift Flats
Hydric soil rating: No

CI—Colwood loam

Map Unit Setting

National map unit symbol: 6fsx
Elevation: 760 to 1,130 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Colwood and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colwood

Setting

Landform: Lake plains, outwash plains
Landform position (three-dimensional): Talf

Custom Soil Resource Report

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy glaciolacustrine deposits and/or glaciofluvial deposits

Typical profile

Ap - 0 to 9 inches: loam

A - 9 to 11 inches: loam

Bg - 11 to 18 inches: loam

Btg - 18 to 32 inches: silty clay loam

2Cg1 - 32 to 39 inches: stratified silt to fine sand to silt loam

3Cg2 - 39 to 80 inches: stratified silt to fine sand to very fine sand

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Very high (about 12.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F098XA012MI - Wet Loamy Depressions

Hydric soil rating: Yes

CnB—Covert sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 693g

Elevation: 580 to 850 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 146 to 188 days

Farmland classification: Not prime farmland

Map Unit Composition

Covert and similar soils: 91 percent

Minor components: 9 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Covert

Setting

Landform: Knolls, flats

Landform position (three-dimensional): Rise

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sand
Bs1 - 7 to 14 inches: sand
Bs2 - 14 to 24 inches: sand
BC - 24 to 41 inches: sand
C - 41 to 80 inches: sand

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Minor Components

Chelsea

Percent of map unit: 3 percent
Landform: Beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Wixom

Percent of map unit: 3 percent
Landform: Knolls, flats
Landform position (three-dimensional): Rise, tal
Down-slope shape: Linear
Across-slope shape: Convex, linear
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Pipestone

Percent of map unit: 3 percent
Landform: Knolls, flats
Landform position (three-dimensional): Rise, tal
Down-slope shape: Linear
Across-slope shape: Convex, linear
Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

CoA—Covert sand, loamy substratum, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 68br
Elevation: 580 to 860 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Not prime farmland

Map Unit Composition

Covert, loamy substratum, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Covert, Loamy Substratum

Setting

Landform: Flats on till plains, knolls on till plains, ridges on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear, convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

A - 0 to 4 inches: sand
E - 4 to 10 inches: sand
Bs - 10 to 13 inches: sand
BC - 13 to 16 inches: sand
C1 - 16 to 47 inches: sand
2C2 - 47 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A

Custom Soil Resource Report

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Minor Components

Pipestone

Percent of map unit: 5 percent

Landform: Flats on till plains, ridges on till plains, knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear, convex

Across-slope shape: Linear

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Avoca

Percent of map unit: 5 percent

Landform: Flats on till plains, knolls on till plains, ridges on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

CpA—Capac fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6fsk

Elevation: 760 to 1,010 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 108 to 178 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Capac and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Capac

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material

A - 2 to 7 inches: fine sandy loam

Bw - 7 to 10 inches: sandy loam

Custom Soil Resource Report

Eg - 10 to 14 inches: sandy loam

Btg - 14 to 20 inches: clay loam

Bt - 20 to 31 inches: clay loam

BCg - 31 to 36 inches: clay loam

Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F098XA011MI - Moist Loamy Drift Plains

Hydric soil rating: No

Minor Components

Brookston

Percent of map unit: 5 percent

Landform: Drainageways on till plains, depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA012MI - Wet Loamy Depressions

Hydric soil rating: Yes

CpB—Capac fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6fsl

Elevation: 750 to 1,010 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 108 to 178 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Capac and similar soils: 95 percent

Minor components: 5 percent

Custom Soil Resource Report

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Capac

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 7 inches: fine sandy loam
Bw - 7 to 10 inches: sandy loam
Eg - 10 to 14 inches: sandy loam
Btg - 14 to 20 inches: clay loam
Bt - 20 to 31 inches: clay loam
BCg - 31 to 36 inches: clay loam
Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Minor Components

Brookston

Percent of map unit: 3 percent
Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

Belding

Percent of map unit: 2 percent
Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Convex
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Ct—Cohoctah sandy loam

Map Unit Setting

National map unit symbol: 693I
Elevation: 580 to 900 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Cohoctah and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cohoctah

Setting

Landform: Meander scars
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy alluvium

Typical profile

A1 - 0 to 18 inches: sandy loam
A2 - 18 to 23 inches: sandy loam
Cg1 - 23 to 31 inches: loamy sand
Cg2 - 31 to 35 inches: sandy loam
Cg3 - 35 to 57 inches: gravelly sandy loam
C - 57 to 80 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (0.60 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY009MI - Wet Floodplain
Hydric soil rating: Yes

CvrabA—Conover loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2y14k
Elevation: 580 to 850 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 135 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Conover and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conover

Setting

Landform: Recessional moraines, deltas, glacial drainage channels, wave-worked till plains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till over dense loamy till

Typical profile

Ap - 0 to 8 inches: loam
Bw - 8 to 12 inches: loam
Bt - 12 to 26 inches: clay loam
BC - 26 to 31 inches: loam
C - 31 to 40 inches: loam
Cd - 40 to 79 inches: loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 29 to 64 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: About 7 to 14 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 9 percent

Landform: Glacial drainage channels, deltas, recessional moraines, wave-worked till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Interfluve

Microfeatures of landform position: Open depressions

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Metamora, dense subsoil

Percent of map unit: 7 percent

Landform: Deltas, glacial drainage channels, wave-worked till plains, recessional moraines

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Williamstown

Percent of map unit: 4 percent

Landform: Glacial drainage channels, deltas, recessional moraines, wave-worked till plains

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Interfluve

Microfeatures of landform position: Rises

Down-slope shape: Convex

Across-slope shape: Linear

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

CvracB—Conover-Williamstown loams, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2y14l

Elevation: 580 to 870 feet

Custom Soil Resource Report

Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 135 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Conover and similar soils: 55 percent
Williamstown and similar soils: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Conover

Setting

Landform: Wave-worked till plains, glacial drainage channels, deltas, recessional moraines
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till over dense loamy till

Typical profile

Ap - 0 to 8 inches: loam
Bw - 8 to 12 inches: loam
Bt - 12 to 26 inches: clay loam
BC - 26 to 31 inches: loam
C - 31 to 40 inches: loam
Cd - 40 to 79 inches: loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 29 to 64 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: About 7 to 14 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Williamstown

Setting

Landform: Recessional moraines, deltas, glacial drainage channels, wave-worked till plains

Custom Soil Resource Report

Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Rises
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till over dense loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bw - 7 to 13 inches: loam
Bt - 13 to 27 inches: clay loam
C - 27 to 37 inches: loam
Cd - 37 to 79 inches: loam

Properties and qualities

Slope: 4 to 6 percent
Depth to restrictive feature: 24 to 55 inches to densic material
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 14 to 25 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 13 percent
Landform: Recessionial moraines, deltas, glacial drainage channels, wave-worked till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Open depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Metamora, dense subsoil

Percent of map unit: 7 percent
Landform: Glacial drainage channels, deltas, recessionial moraines, wave-worked till plains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Cx—Corunna sandy loam

Map Unit Setting

National map unit symbol: 690h
Elevation: 620 to 830 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Corunna and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Corunna

Setting

Landform: Drainageways on till plains, flats on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 10 inches: sandy loam
Bg1 - 10 to 17 inches: sandy loam
Bg2 - 17 to 22 inches: sandy loam
Bg3 - 22 to 31 inches: gravelly sandy loam
2Cg1 - 31 to 34 inches: clay loam
2Cg2 - 34 to 51 inches: clay loam
2Cg3 - 51 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minor Components

Parkhill

Percent of map unit: 5 percent

Landform: Drainageways on till plains, depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

De—Deford fine sand

Map Unit Setting

National map unit symbol: 690k

Elevation: 630 to 830 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 151 to 204 days

Farmland classification: Farmland of local importance

Map Unit Composition

Deford and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deford

Setting

Landform: Flats on lake plains, depressions on lake plains, drainageways on lake plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: fine sand

Bw1 - 9 to 19 inches: fine sand

Bw2 - 19 to 26 inches: sand

Bw3 - 26 to 33 inches: fine sand

Cg1 - 33 to 49 inches: fine sand

Custom Soil Resource Report

Cg2 - 49 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

Minor Components

Minoa

Percent of map unit: 5 percent

Landform: Knolls on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Wainola

Percent of map unit: 5 percent

Landform: Beaches, knolls on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear, convex

Across-slope shape: Convex, linear

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

EaA1—Eastport, Arenac, and Kalkaska sands, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69wj

Elevation: 580 to 780 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 127 to 174 days

Custom Soil Resource Report

Farmland classification: Not prime farmland

Map Unit Composition

Eastport and similar soils: 40 percent

Arenac and similar soils: 32 percent

Kalkaska and similar soils: 28 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eastport

Setting

Landform: Knolls on beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 3 inches: sand

E - 3 to 18 inches: fine sand

Bs - 18 to 30 inches: fine sand

C - 30 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Description of Arenac

Setting

Landform: Swales on beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

A - 0 to 2 inches: sand

E - 2 to 7 inches: sand

Bhs - 7 to 12 inches: sand

Bs - 12 to 24 inches: sand

C1 - 24 to 54 inches: sand

Custom Soil Resource Report

2C2 - 54 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Kalkaska

Setting

Landform: Knolls on beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: fine sand

E - 8 to 11 inches: sand

Bhs - 11 to 13 inches: loamy sand

Bs - 13 to 20 inches: loamy sand

C - 20 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

EaB1—Eastport, Arenac, and Kalkaska sands, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69wk
Elevation: 580 to 790 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Eastport and similar soils: 40 percent
Arenac and similar soils: 32 percent
Kalkaska and similar soils: 28 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eastport

Setting

Landform: Knolls on dunes, knolls on beaches
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 3 inches: sand
E - 3 to 18 inches: fine sand
Bs - 18 to 30 inches: fine sand
C - 30 to 80 inches: fine sand

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A

Custom Soil Resource Report

Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Description of Arenac

Setting

Landform: Beaches on till-floored lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

A - 0 to 2 inches: sand
E - 2 to 7 inches: sand
Bhs - 7 to 12 inches: sand
Bs - 12 to 24 inches: sand
C1 - 24 to 54 inches: sand
2C2 - 54 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Kalkaska

Setting

Landform: Knolls on strand plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: fine sand
E - 8 to 11 inches: sand
Bhs - 11 to 13 inches: loamy sand
Bs - 13 to 20 inches: loamy sand
C - 20 to 80 inches: sand

Properties and qualities

Slope: 2 to 7 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

EaC1—Eastport, Arenac, and Kalkaska sands, 7 to 14 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69wl

Elevation: 580 to 780 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Eastport and similar soils: 41 percent

Arenac and similar soils: 33 percent

Kalkaska and similar soils: 26 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eastport

Setting

Landform: Dunes

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 3 inches: sand

E - 3 to 18 inches: fine sand

Custom Soil Resource Report

Bs - 18 to 30 inches: fine sand

C - 30 to 80 inches: fine sand

Properties and qualities

Slope: 7 to 14 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Description of Arenac

Setting

Landform: Beaches on till-floored lake plains

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Base slope, side slope

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

A - 0 to 2 inches: sand

E - 2 to 7 inches: sand

Bhs - 7 to 12 inches: sand

Bs - 12 to 24 inches: sand

C1 - 24 to 54 inches: sand

2C2 - 54 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Custom Soil Resource Report

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Kalkaska

Setting

Landform: Strand plains

Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluve

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: fine sand

E - 8 to 11 inches: sand

Bhs - 11 to 13 inches: loamy sand

Bs - 13 to 20 inches: loamy sand

C - 20 to 80 inches: sand

Properties and qualities

Slope: 7 to 14 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

EbA0—Eastport fine sand and beach sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69wm

Elevation: 580 to 610 feet

Mean annual precipitation: 32 to 34 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Eastport and similar soils: 60 percent

Beaches: 40 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eastport

Setting

Landform: Knolls on beach plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 3 inches: fine sand

E - 3 to 18 inches: fine sand

Bs - 18 to 30 inches: fine sand

C - 30 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Description of Beaches

Setting

Landform: Beach plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Properties and qualities

Slope: 0 to 2 percent

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Depth to water table: About 6 inches

Interpretive groups

Land capability classification (irrigated): None specified

Ecological site: F099XY001MI - Coastal Dune Complex

Hydric soil rating: No

EbC0—Eastport fine sand and beach sand, 2 to 18 percent slopes

Map Unit Setting

National map unit symbol: 69wn
Elevation: 580 to 620 feet
Mean annual precipitation: 32 to 34 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Eastport and similar soils: 60 percent
Beaches: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eastport

Setting

Landform: Beach ridges on beaches
Landform position (two-dimensional): Toeslope, footslope, backslope, summit
Landform position (three-dimensional): Crest, base slope, side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 3 inches: fine sand
E - 3 to 18 inches: fine sand
Bs - 18 to 30 inches: fine sand
C - 30 to 80 inches: fine sand

Properties and qualities

Slope: 2 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Description of Beaches

Setting

Landform: Beaches
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Concave

Properties and qualities

Slope: 0 to 2 percent
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Depth to water table: About 6 inches

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: F099XY001MI - Coastal Dune Complex
Hydric soil rating: No

EcA0—Edmore and Ensley sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69wp
Elevation: 640 to 820 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Edmore and similar soils: 55 percent
Ensley and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edmore

Setting

Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified loamy and sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: sandy loam
Bg - 8 to 18 inches: loamy sand
Bw - 18 to 26 inches: sandy loam
2Bg - 26 to 44 inches: sand
3Cg - 44 to 80 inches: stratified loamy sand to fine sand to sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

Description of Ensley

Setting

Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: sandy loam
Bg1 - 8 to 18 inches: sandy loam
Bg2 - 18 to 26 inches: sandy clay loam
C - 26 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

EcB1—Edmore and Ensley sandy loams, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69wq
Elevation: 730 to 740 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Edmore and similar soils: 55 percent
Ensley and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edmore

Setting

Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified loamy and sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: sandy loam
Bg - 8 to 18 inches: loamy sand
Bw - 18 to 26 inches: sandy loam
2Bg - 26 to 44 inches: sand
3Cg - 44 to 80 inches: stratified loamy sand to fine sand to sand to sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

Description of Ensley

Setting

Landform: Drainageways on till plains, depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: sandy loam

Bg1 - 8 to 18 inches: sandy loam

Bg2 - 18 to 26 inches: sandy clay loam

C - 26 to 80 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

EdA0—Edwards muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69wr

Elevation: 590 to 850 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Edwards and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Edwards

Setting

Landform: Depressions on ground moraines, depressions on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material over marl

Typical profile

Oa1 - 0 to 6 inches: muck
Oa2 - 6 to 20 inches: muck
Lma - 20 to 80 inches: marly material

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 90 percent
Available water supply, 0 to 60 inches: Very high (about 16.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Minor Components

Martisco

Percent of map unit: 5 percent
Landform: Depressions on ground moraines, depressions on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Carlisle

Percent of map unit: 5 percent
Landform: Depressions on ground moraines, depressions on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

EeA0—Epoufette and Ronald sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69ws
Elevation: 590 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Epoufette and similar soils: 55 percent
Ronald and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Epoufette

Setting

Landform: End moraines, deltas, beaches
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
Bg - 7 to 16 inches: gravelly loamy sand
Btg - 16 to 20 inches: gravelly sandy loam
BC - 20 to 30 inches: gravelly sand
2Cg - 30 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

Description of Ronald

Setting

Landform: Deltas, end moraines, beaches
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 10 inches: sandy loam
Btg1 - 10 to 18 inches: clay loam
Btg2 - 18 to 29 inches: clay loam
BC - 29 to 35 inches: sandy clay loam
2Cg - 35 to 80 inches: stratified coarse sand to gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

EeB1—Epoufette and Ronald sandy loams, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69wt
Elevation: 590 to 770 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Epoufette and similar soils: 55 percent
Ronald and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Epoufette

Setting

Landform: Beaches

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

Bg - 7 to 16 inches: gravelly loamy sand

Btg - 16 to 20 inches: gravelly sandy loam

BC - 20 to 30 inches: gravelly sand

2Cg - 30 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

Description of Ronald

Setting

Landform: Beaches

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 10 inches: sandy loam

Btg1 - 10 to 18 inches: clay loam

Btg2 - 18 to 29 inches: clay loam

BC - 29 to 35 inches: sandy clay loam

2Cg - 35 to 80 inches: stratified coarse sand to gravelly sand to sand

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Custom Soil Resource Report

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

EsB—Eastport sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 690I

Elevation: 570 to 610 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 48 to 48 degrees F

Frost-free period: 151 to 204 days

Farmland classification: Not prime farmland

Map Unit Composition

Eastport and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eastport

Setting

Landform: Ridges on beaches, flats on beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: sand

Bhs - 7 to 9 inches: sand

Bs1 - 9 to 14 inches: sand

Bs2 - 14 to 24 inches: sand

C1 - 24 to 42 inches: sand

C2 - 42 to 80 inches: sand

Properties and qualities

Slope: 0 to 6 percent

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Minor Components

Wainola

Percent of map unit: 5 percent

Landform: Swales on beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Tobico

Percent of map unit: 5 percent

Landform: Swales on beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear, convex

Across-slope shape: Convex, linear

Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

FaA—Fabius-Wasepi sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6ft5

Elevation: 750 to 1,130 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 108 to 178 days

Farmland classification: Farmland of local importance

Map Unit Composition

Fabius and similar soils: 50 percent

Wasepi and similar soils: 45 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fabius

Setting

Landform: Lake plains, outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
Eg - 7 to 10 inches: sandy loam
Bt1 - 10 to 12 inches: sandy loam
Bt2 - 12 to 18 inches: sandy clay loam
2C - 18 to 80 inches: stratified coarse sand to gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.60 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Description of Wasepi

Setting

Landform: Drainageways on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: loamy sand
E - 7 to 11 inches: loamy sand
Bt - 11 to 14 inches: sandy loam
Btg - 14 to 24 inches: sandy loam
BCg - 24 to 32 inches: sandy loam
2Cg - 32 to 80 inches: gravelly sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: B/D
Ecological site: F098XA019MI - Moist Sandy Drift Plains
Hydric soil rating: No

Minor Components

Gilford

Percent of map unit: 5 percent
Landform: Drainageways on outwash plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

F_n—Fluvaquents, loamy

Map Unit Setting

National map unit symbol: 68c0
Elevation: 580 to 770 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Not prime farmland

Map Unit Composition

Fluvaquents, loamy, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fluvaquents, Loamy

Setting

Landform: Flats on flood plains, meander scars on flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Loamy alluvium over sandy and gravelly alluvium

Typical profile

A - 0 to 6 inches: loam

Bg - 6 to 25 inches: loam

Cg - 25 to 80 inches: stratified sand to gravelly sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: Frequent

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY009MI - Wet Floodplain

Hydric soil rating: Yes

Minor Components

Riverdale

Percent of map unit: 8 percent

Landform: Knolls on flood plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY008MI - Moist Floodplain

Hydric soil rating: No

Avoca

Percent of map unit: 5 percent

Landform: Knolls on flood plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY008MI - Moist Floodplain

Hydric soil rating: No

Linwood

Percent of map unit: 1 percent

Landform: Bogs on flood plains

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY009MI - Wet Floodplain

Hydric soil rating: Yes

Shebeon

Percent of map unit: 1 percent
Landform: Knolls on flood plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY008MI - Moist Floodplain
Hydric soil rating: No

GaC1—Gagetown silt loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69wv
Elevation: 600 to 680 feet
Mean annual precipitation: 32 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Gagetown and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gagetown

Setting

Landform: Deltas on lake plains
Landform position (two-dimensional): Footslope, backslope, summit, shoulder
Landform position (three-dimensional): Head slope, interfluvium, crest, base slope, side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Coarse-silty glaciofluvial deposits and/or glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam
Bw - 9 to 17 inches: silt loam
C1 - 17 to 42 inches: stratified silt loam
C2 - 42 to 80 inches: stratified fine sand to very fine sand to silt loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 18 inches
Frequency of flooding: None
Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very high (about 12.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GaC2—Gagetown silt loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69ww

Elevation: 590 to 780 feet

Mean annual precipitation: 32 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Gagetown, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gagetown, Moderately Eroded

Setting

Landform: Deltas on lake plains

Landform position (two-dimensional): Footslope, backslope, summit, shoulder

Landform position (three-dimensional): Base slope, side slope, head slope, interfluvium, crest

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Coarse-silty glaciofluvial deposits and/or glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam

Bw - 9 to 17 inches: silt loam

C1 - 17 to 42 inches: stratified silt loam

C2 - 42 to 80 inches: stratified fine sand to very fine sand to silt loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: About 18 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very high (about 12.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GaD2—Gagetown silt loam, 12 to 18 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69wx

Elevation: 590 to 630 feet

Mean annual precipitation: 33 to 33 inches

Mean annual air temperature: 46 to 46 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Gagetown, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gagetown, Moderately Eroded

Setting

Landform: Deltas on lake plains

Landform position (two-dimensional): Footslope, backslope, summit, shoulder

Landform position (three-dimensional): Base slope, side slope, head slope, interfluvium, crest

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Coarse-silty glaciofluvial deposits and/or glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: silt loam

Bw - 9 to 17 inches: silt loam

C1 - 17 to 42 inches: stratified silt loam

C2 - 42 to 80 inches: stratified fine sand to very fine sand to silt loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: About 18 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very high (about 12.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GbA0—Gladwin and Palo sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69wy

Elevation: 610 to 860 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Gladwin and similar soils: 60 percent

Palo and similar soils: 40 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gladwin

Setting

Landform: Beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

E1 - 7 to 12 inches: loamy sand

E2 - 12 to 28 inches: sand

Bt - 28 to 36 inches: gravelly sandy loam

2Cg - 36 to 80 inches: stratified very gravelly sand to gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Palo

Setting

Landform: Beaches
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
Eg - 7 to 11 inches: gravelly sandy loam
Bw - 11 to 14 inches: gravelly sandy loam
Btg - 14 to 27 inches: gravelly sandy clay loam
C - 27 to 35 inches: gravelly sandy loam
2C - 35 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 6.90 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GbB1—Gladwin and Palo sandy loams, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69wz
Elevation: 640 to 860 feet

Custom Soil Resource Report

Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Gladwin and similar soils: 60 percent
Palo and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gladwin

Setting

Landform: Beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
E1 - 7 to 12 inches: loamy sand
E2 - 12 to 28 inches: sand
Bt - 28 to 36 inches: gravelly sandy loam
2Cg - 36 to 80 inches: stratified very gravelly sand to gravelly sand to sand

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Palo

Setting

Landform: Beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

Custom Soil Resource Report

Eg - 7 to 11 inches: gravelly sandy loam
Bw - 11 to 14 inches: gravelly sandy loam
Btg - 14 to 27 inches: gravelly sandy clay loam
C - 27 to 35 inches: gravelly sandy loam
2C - 35 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 6.90 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Gc—Gravel pit

Map Unit Setting

National map unit symbol: 69x0
Elevation: 470 to 900 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 45 to 51 degrees F
Frost-free period: 128 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Gravel pit: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Water

Percent of map unit: 5 percent

GdA0—Greenwood peat, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69x1

Elevation: 750 to 790 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Greenwood and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greenwood

Setting

Landform: Flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material and/or woody organic material

Typical profile

Oi - 0 to 10 inches: peat

Oe1 - 10 to 30 inches: muck

Oe2 - 30 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8w

Hydrologic Soil Group: A/D

Ecological site: F099XY015MI - Acidic Peaty Depression

Hydric soil rating: Yes

GeA1—Guelph loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69x2
Elevation: 620 to 840 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Guelph and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GeB1—Guelph loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69x3
Elevation: 590 to 890 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Guelph and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GeB2—Guelph loam, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69x4
Elevation: 640 to 860 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Guelph, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Moderately Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GeC0—Guelph loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 68cv

Elevation: 620 to 870 feet

Mean annual precipitation: 32 to 32 inches

Mean annual air temperature: 45 to 47 degrees F

Frost-free period: 135 to 184 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Drainageways on moraines, knolls on moraines

Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope

Landform position (three-dimensional): Head slope, nose slope, side slope, base slope, crest, interfluve

Down-slope shape: Linear

Across-slope shape: Convex, linear

Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: loam

B/E - 7 to 13 inches: clay loam

Bt - 13 to 19 inches: clay loam

C1 - 19 to 29 inches: loam

C2 - 29 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Custom Soil Resource Report

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Londo

Percent of map unit: 5 percent

Landform: Depressions on moraines, drainageways on moraines

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Side slope, base slope

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GeC1—Guelph loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69x5

Elevation: 580 to 860 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Recessionial moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 5 inches: loam

B/E - 5 to 11 inches: loam

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GeC2—Guelph loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69x6

Elevation: 580 to 880 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 5 inches: loam

B/E - 5 to 11 inches: loam

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GeC3—Guelph loam, 6 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69x7
Elevation: 620 to 820 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Severely Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GeD0—Guelph loam, 12 to 18 percent slopes

Map Unit Setting

National map unit symbol: 68cw
Elevation: 750 to 870 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Farmland of local importance

Map Unit Composition

Guelph and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Drainageways, knolls on moraines
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Interfluve, head slope, nose slope, side slope, base slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

A - 0 to 7 inches: loam
B/E - 7 to 13 inches: clay loam
Bt - 13 to 16 inches: clay loam
C1 - 16 to 29 inches: loam

C2 - 29 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GeD1—Guelph loam, 12 to 18 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69x8

Elevation: 590 to 850 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Convex, linear

Across-slope shape: Concave, convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 5 inches: loam

B/E - 5 to 11 inches: loam

Custom Soil Resource Report

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GeD2—Guelph loam, 12 to 18 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69x9

Elevation: 590 to 870 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Convex, linear

Across-slope shape: Concave, convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 5 inches: loam

Custom Soil Resource Report

B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GeD3—Guelph loam, 12 to 18 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69xb
Elevation: 640 to 870 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Severely Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

B/E - 0 to 11 inches: clay loam

Custom Soil Resource Report

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GfA1—Guelph loam and silt loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69xc

Elevation: 700 to 830 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Guelph and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 5 inches: loam

B/E - 5 to 11 inches: loam

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GfA2—Guelph loam and silt loam, 0 to 2 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69xd
Elevation: 700 to 810 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Guelph, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Moderately Eroded

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GfB1—Guelph loam and silt loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69xf
Elevation: 600 to 890 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Guelph and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GfB2—Guelph loam and silt loam, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69xg
Elevation: 630 to 880 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Guelph, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Moderately Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GfB3—Guelph loam and silt loam, 2 to 6 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69xh

Elevation: 700 to 820 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, severely eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Severely Eroded

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

B/E - 0 to 11 inches: clay loam

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GfC1—Guelph loam and silt loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69xj

Elevation: 690 to 850 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 5 inches: loam

B/E - 5 to 11 inches: loam

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GfC2—Guelph loam and silt loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69xk

Elevation: 590 to 890 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 5 inches: loam

B/E - 5 to 11 inches: loam

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GfC3—Guelph loam and silt loam, 6 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69xl
Elevation: 650 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Severely Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

B/E - 0 to 11 inches: clay loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GfD1—Guelph loam and silt loam, 12 to 18 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69xm
Elevation: 600 to 850 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Guelph and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam

Custom Soil Resource Report

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GfD2—Guelph loam and silt loam, 12 to 18 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69xn

Elevation: 590 to 890 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Convex, linear

Across-slope shape: Concave, convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

Custom Soil Resource Report

E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GfD3—Guelph loam and silt loam, 12 to 18 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69xp
Elevation: 610 to 870 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Guelph, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Severely Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

B/E - 0 to 11 inches: clay loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GfE1—Guelph loam and silt loam, 18+ percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69xq
Elevation: 580 to 850 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Guelph and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Interfluvium, crest, base slope, side slope, nose slope, head slope
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 5 inches: loam
B/E - 5 to 11 inches: loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 18 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GfE2—Guelph loam and silt loam, 18+ percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69xr
Elevation: 580 to 850 feet
Mean annual precipitation: 31 to 34 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Guelph, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Moderately Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear

Custom Soil Resource Report

Across-slope shape: Concave, convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 5 inches: loam

B/E - 5 to 11 inches: loam

Bt - 11 to 20 inches: clay loam

C - 20 to 80 inches: loam

Properties and qualities

Slope: 18 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

GfE3—Guelph loam and silt loam, 18+ percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69xs

Elevation: 580 to 860 feet

Mean annual precipitation: 31 to 34 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Guelph, severely eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph, Severely Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Custom Soil Resource Report

Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

B/E - 0 to 11 inches: clay loam
Bt - 11 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 18 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

GgB—Guelph-Londo loams, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 68ct
Elevation: 690 to 870 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Guelph and similar soils: 55 percent
Londo and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Swales on moraines, knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Loamy till

Typical profile

Ap - 0 to 9 inches: loam
B/E - 9 to 13 inches: clay loam
Bt - 13 to 21 inches: clay loam
C1 - 21 to 29 inches: loam
C2 - 29 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Londo

Setting

Landform: Flats on moraines, knolls on moraines
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 9 inches: loam
B/E - 9 to 14 inches: loam
Bt - 14 to 20 inches: clay loam
C - 20 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 11.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent

Landform: Drainageways on moraines, depressions on moraines

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

GhB—Guelph-Londo loams, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 692j

Elevation: 580 to 820 feet

Mean annual precipitation: 31 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 146 to 188 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Guelph and similar soils: 65 percent

Londo and similar soils: 30 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guelph

Setting

Landform: Moraines, knolls

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: loam

B/E - 8 to 12 inches: loam

Bt - 12 to 23 inches: loam

C - 23 to 80 inches: loam

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Londo

Setting

Landform: Moraines, swales
Landform position (three-dimensional): Dip, rise
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy till

Typical profile

Ap - 0 to 10 inches: loam
B/E - 10 to 14 inches: loam
Bt - 14 to 20 inches: clay loam
C1 - 20 to 40 inches: loam
C2 - 40 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Avoca

Percent of map unit: 3 percent
Landform: Swales, moraines
Landform position (three-dimensional): Rise, dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Tappan

Percent of map unit: 2 percent
Landform: Moraines, drainageways, depressions
Landform position (three-dimensional): Dip, tal
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

GkB—Grindstone-Kilmanagh loams, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 68cp
Elevation: 740 to 840 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Grindstone and similar soils: 55 percent
Kilmanagh and similar soils: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grindstone

Setting

Landform: Knolls on moraines, till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous, dense loamy till

Typical profile

Ap - 0 to 9 inches: loam
B/E - 9 to 11 inches: clay loam
Bt - 11 to 20 inches: clay loam

Custom Soil Resource Report

BC - 20 to 27 inches: silt loam

Cd1 - 27 to 55 inches: loam

Cd2 - 55 to 80 inches: loam

Properties and qualities

Slope: 0 to 4 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 12 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Kilmanagh

Setting

Landform: Drainageways on moraines, depressions on moraines

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Dense loamy till

Typical profile

Ap - 0 to 9 inches: loam

Bg - 9 to 26 inches: loam

Bw - 26 to 29 inches: loam

C - 29 to 44 inches: loam

Cd - 44 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Custom Soil Resource Report

Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Shebeon

Percent of map unit: 15 percent
Landform: Swales on moraines, knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Avoca

Percent of map unit: 5 percent
Landform: Swales on moraines, flats on moraines, knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Gm—Gilford sandy loam

Map Unit Setting

National map unit symbol: 693d
Elevation: 610 to 920 feet
Mean annual precipitation: 32 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Gilford and similar soils: 94 percent
Minor components: 6 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilford

Setting

Landform: Flats, drainageways, depressions
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 11 inches: sandy loam
Bg1 - 11 to 15 inches: sandy loam

Custom Soil Resource Report

Bg2 - 15 to 29 inches: sandy loam

2C - 29 to 80 inches: stratified fine sand to gravelly sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)*

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minor Components

Wasepi

Percent of map unit: 6 percent

Landform: Knolls

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Gn—Granby loamy fine sand

Map Unit Setting

National map unit symbol: 6933

Elevation: 610 to 840 feet

Mean annual precipitation: 32 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 146 to 188 days

Farmland classification: Farmland of local importance

Map Unit Composition

Granby and similar soils: 86 percent

Minor components: 14 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Granby

Setting

Landform: Flats, drainageways, depressions
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 11 inches: loamy fine sand
Bg1 - 11 to 16 inches: loamy fine sand
Bg2 - 16 to 40 inches: loamy fine sand
C - 40 to 45 inches: fine sand
Cg - 45 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

Minor Components

Avoca

Percent of map unit: 7 percent
Landform: Knolls, ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Pipestone

Percent of map unit: 7 percent
Landform: Knolls, ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

HbA0—Houghton and Palms mucks, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69xv
Elevation: 730 to 820 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 179 days
Farmland classification: Farmland of local importance

Map Unit Composition

Houghton and similar soils: 55 percent
Palms and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton

Setting

Landform: Ground moraines, depressions on glacial drainage channels
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material

Typical profile

Oa1 - 0 to 10 inches: muck
Oa2 - 10 to 30 inches: muck
Oa3 - 30 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Description of Palms

Setting

Landform: Depressions on glacial drainage channels
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material over loamy till

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 25 inches: muck
Lco - 25 to 30 inches: coprogenous material
Cg - 30 to 80 inches: stratified loam to fine sandy loam to silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very high (about 17.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

HcB1—Huron silt loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69xw
Elevation: 780 to 810 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Huron and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Huron

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey till

Typical profile

A - 0 to 3 inches: silt loam
E - 3 to 6 inches: loam
B/E - 6 to 12 inches: loam
Bt - 12 to 24 inches: silty clay loam
C - 24 to 80 inches: silty clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.66 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

HgtahA—Houghton muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2zdlc
Elevation: 720 to 1,100 feet
Mean annual precipitation: 31 to 41 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 135 to 170 days
Farmland classification: Farmland of local importance

Map Unit Composition

Houghton and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton

Setting

Landform: Depressions on moraines on outwash plains, depressions on outwash plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, dip

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Herbaceous organic material

Typical profile

Oa1 - 0 to 12 inches: muck

Oa2 - 12 to 35 inches: muck

Oa3 - 35 to 80 inches: muck

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 3 percent

Maximum salinity: Nonsaline to very slightly saline (0.4 to 2.7 mmhos/cm)

Sodium adsorption ratio, maximum: 0.8

Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: R098XA002MI - Inland Salt Marshes, F098XA006MI - Mucky Depressions

Hydric soil rating: Yes

Minor Components

Adrian

Percent of map unit: 4 percent

Landform: Depressions on moraines on outwash plains, depressions on outwash plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, dip

Down-slope shape: Concave

Across-slope shape: Linear

Ecological site: F098XA006MI - Mucky Depressions

Hydric soil rating: Yes

Edwards

Percent of map unit: 3 percent

Landform: Depressions on moraines on outwash plains, depressions on outwash plains

Custom Soil Resource Report

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: F098XA006MI - Mucky Depressions
Hydric soil rating: Yes

Palms

Percent of map unit: 2 percent
Landform: Swamps on till plains, swamps on outwash plains, depressions on till plains, depressions on outwash plains, drainageways on outwash plains, drainageways on moraines, drainageways on till plains, swamps on moraines, depressions on moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F098XA006MI - Mucky Depressions
Hydric soil rating: Yes

Gilford, gravelly subsoil

Percent of map unit: 1 percent
Landform: Glacial drainage channels, glacial drainage channels
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA020MI - Wet Sandy Drift Depressions
Hydric soil rating: Yes

HgtaiA—Houghton muck, Erie-Huron lake plain, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2zdk6
Elevation: 630 to 820 feet
Mean annual precipitation: 30 to 37 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 130 to 185 days
Farmland classification: Farmland of local importance

Map Unit Composition

Houghton and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Houghton

Setting

Landform: Depressions on moraines on outwash plains, depressions on outwash plains

Custom Soil Resource Report

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Herbaceous organic material

Typical profile

Oa1 - 0 to 12 inches: muck
Oa2 - 12 to 35 inches: muck
Oa3 - 35 to 80 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (0.4 to 2.7 mmhos/cm)
Sodium adsorption ratio, maximum: 0.8
Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Minor Components

Adrian

Percent of map unit: 4 percent
Landform: Depressions on moraines on outwash plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Edwards

Percent of map unit: 3 percent
Landform: Depressions on moraines on outwash plains, depressions on outwash plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Concave, linear
Across-slope shape: Linear
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Palms

Percent of map unit: 2 percent

Landform: Drainageways on till plains, swamps on moraines, depressions on moraines, swamps on till plains, swamps on outwash plains, depressions on till plains, depressions on outwash plains, drainageways on outwash plains, drainageways on moraines

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Gilford, gravelly subsoil

Percent of map unit: 1 percent

Landform: Glacial drainage channels, glacial drainage channels

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA020MI - Wet Sandy Drift Depressions, F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

laA0—losco and Menominee loamy sands, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69xx

Elevation: 600 to 850 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

losco and similar soils: 55 percent

Menominee and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Depressions on till plains

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Menominee

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: loamy sand
E1 - 7 to 14 inches: sand
E2 - 14 to 29 inches: sand
C1 - 29 to 39 inches: sand
2C2 - 39 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: B

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

laB1—losco and Menominee loamy sands, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69xy

Elevation: 630 to 880 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

losco and similar soils: 55 percent

Menominee and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Depressions on ground moraines

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Custom Soil Resource Report

Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Menominee

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: loamy sand
E1 - 7 to 14 inches: sand
E2 - 14 to 29 inches: sand
C1 - 29 to 39 inches: sand
2C2 - 39 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: B
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

IbA0—Iosco and Winegars sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69xz
Elevation: 580 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Iosco and similar soils: 55 percent
Winegars and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Iosco

Setting

Landform: Drainageways on till plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w

Custom Soil Resource Report

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Winegars

Setting

Landform: Drainageways on till plains

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: sandy loam

E1 - 7 to 10 inches: loamy sand

E2 - 10 to 15 inches: loamy sand

Bt1 - 15 to 43 inches: gravelly sand

Bt2 - 43 to 47 inches: gravelly fine sandy loam

C1 - 47 to 54 inches: stratified coarse sand to gravelly sand

2C2 - 54 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

IbB1—Iosco and Winegars sandy loams, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69y0

Elevation: 610 to 800 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 47 degrees F

Custom Soil Resource Report

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

losco and similar soils: 55 percent

Winegars and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Drainageways on ground moraines

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Winegars

Setting

Landform: Drainageways on ground moraines

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: sandy loam
E1 - 7 to 10 inches: loamy sand
E2 - 10 to 15 inches: loamy sand
Bt1 - 15 to 43 inches: gravelly sand
Bt2 - 43 to 47 inches: gravelly fine sandy loam
C1 - 47 to 54 inches: stratified coarse sand to gravelly sand
2C2 - 54 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

IcA0—losco sandy loam and Covert loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2qz3n
Elevation: 580 to 820 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

losco and similar soils: 55 percent
Covert and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Swales on till plains
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Rise

Custom Soil Resource Report

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C1 - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Covert

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bs1 - 6 to 12 inches: sand

Bs2 - 12 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 24 inches

Custom Soil Resource Report

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

IcB1—losco sandy loam and Covert loamy sand, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3p

Elevation: 600 to 810 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

losco and similar soils: 55 percent

Covert and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Swales on till plains

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Covert

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bs1 - 6 to 12 inches: sand

Bs2 - 12 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 2 to 7 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

lcC1—losco sandy loam and Covert loamy sand, 7 to 14 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3q

Elevation: 580 to 770 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

losco and similar soils: 55 percent

Covert and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Swales on till plains

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Base slope, side slope

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Covert

Setting

Landform: Knolls on till plains
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: sand
Bs1 - 6 to 12 inches: sand
Bs2 - 12 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 7 to 14 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

IcD1—losco sandy loam and Covert loamy sand, 14+ percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3r
Elevation: 620 to 650 feet
Mean annual precipitation: 32 inches
Mean annual air temperature: 48 degrees F

Custom Soil Resource Report

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

losco and similar soils: 55 percent

Covert and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of losco

Setting

Landform: Swales on till plains

Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Base slope, side slope

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Description of Covert

Setting

Landform: Ridges on till plains

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Convex, linear

Across-slope shape: Concave, convex

Custom Soil Resource Report

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bs1 - 6 to 12 inches: sand

Bs2 - 12 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 14 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

JaA0—Jeddo silty clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69y5

Elevation: 600 to 830 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Jeddo and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jeddo

Setting

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey till

Typical profile

Ap - 0 to 7 inches: silty clay loam
Bg - 7 to 12 inches: silty clay loam
Btg1 - 12 to 15 inches: clay loam
Btg2 - 15 to 25 inches: silty clay loam
BCg - 25 to 36 inches: silty clay loam
C - 36 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Jd—Jeddo silt loam

Map Unit Setting

National map unit symbol: 690q
Elevation: 610 to 860 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Jeddo and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Jeddo

Setting

Landform: Flats on till plains, ground moraines, drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Clayey till

Typical profile

Ap - 0 to 8 inches: silt loam
Btg1 - 8 to 17 inches: silty clay loam
Btg2 - 17 to 27 inches: silty clay
Bt1 - 27 to 35 inches: silty clay
Bt2 - 35 to 46 inches: silty clay
C - 46 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Blount

Percent of map unit: 5 percent
Landform: Knolls on till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Parkhill

Percent of map unit: 5 percent
Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

KaA1—Kalkaska and Wallace fine sands, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69y6
Elevation: 580 to 770 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 47 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Kalkaska and similar soils: 75 percent
Wallace and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kalkaska

Setting

Landform: Knolls on beach ridges, outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: fine sand
E - 8 to 11 inches: sand
Bhs - 11 to 13 inches: loamy sand
Bs - 13 to 20 inches: loamy sand
C - 20 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Description of Wallace

Setting

Landform: Outwash plains, knolls on beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: fine sand
E - 8 to 11 inches: sand
Bhsm - 11 to 13 inches: loamy sand
Bs - 13 to 20 inches: loamy sand
C - 20 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

KaB1—Kalkaska and Wallace fine sands, 2 to 8 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69y7
Elevation: 690 to 780 feet
Mean annual precipitation: 30 to 31 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Kalkaska and similar soils: 75 percent
Wallace and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kalkaska

Setting

Landform: Knolls on beach ridges, outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: fine sand
E - 8 to 11 inches: sand
Bhs - 11 to 13 inches: loamy sand
Bs - 13 to 20 inches: loamy sand
C - 20 to 80 inches: sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Description of Wallace

Setting

Landform: Outwash plains, knolls on beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: fine sand
E - 8 to 11 inches: sand
Bhsm - 11 to 13 inches: loamy sand
Bs - 13 to 20 inches: loamy sand
C - 20 to 80 inches: sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

KaC1—Kalkaska and Wallace fine sands, 8 to 18 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69y8

Elevation: 740 to 790 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Kalkaska and similar soils: 75 percent

Wallace and similar soils: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kalkaska

Setting

Landform: Outwash plains, beach ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: fine sand

E - 8 to 11 inches: sand

Bhs - 11 to 13 inches: loamy sand

Bs - 13 to 20 inches: loamy sand

C - 20 to 80 inches: sand

Properties and qualities

Slope: 8 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Description of Wallace

Setting

Landform: Beach ridges, outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: fine sand

E - 8 to 11 inches: sand

Bhsm - 11 to 13 inches: loamy sand

Bs - 13 to 20 inches: loamy sand

C - 20 to 80 inches: sand

Properties and qualities

Slope: 8 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 0.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

KbA0—Kerston muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69y9
Elevation: 600 to 790 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Kerston and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kerston

Setting

Landform: Oxbows on flood plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Organic material over alternating layers of loamy and/or sandy alluvium

Typical profile

Oa1 - 0 to 8 inches: muck
Oa2 - 8 to 22 inches: muck
Cg - 22 to 29 inches: sand
O'a - 29 to 34 inches: muck
C'g - 34 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Very high (about 12.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY009MI - Wet Floodplain
Hydric soil rating: Yes

KcA—Kibbie loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6ftp
Elevation: 760 to 1,130 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Kibbie and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kibbie

Setting

Landform: Flats on outwash plains, flats on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Silty and loamy glaciofluvial deposits and/or glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: loam
E - 7 to 11 inches: loam
Btg1 - 11 to 19 inches: silt loam
Btg2 - 19 to 34 inches: silty clay loam
C - 34 to 80 inches: stratified silt to very fine sand to fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Very high (about 12.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Minor Components

Colwood

Percent of map unit: 5 percent
Landform: Depressions on lake plains, drainageways on lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

KcB—Kibbie loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6ftq
Elevation: 750 to 1,090 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Kibbie and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kibbie

Setting

Landform: Knolls on outwash plains, knolls on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Silty and loamy glaciofluvial deposits and/or glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: loam
E - 7 to 11 inches: loam
Btg1 - 11 to 19 inches: silt loam
Btg2 - 19 to 34 inches: silty clay loam
C - 34 to 80 inches: stratified silt to very fine sand to fine sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Custom Soil Resource Report

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Very high (about 12.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C/D

Ecological site: F098XA011MI - Moist Loamy Drift Plains

Hydric soil rating: No

Minor Components

Colwood

Percent of map unit: 3 percent

Landform: Drainageways on lake plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA012MI - Wet Loamy Depressions

Hydric soil rating: Yes

Tuscola

Percent of map unit: 2 percent

Landform: Knolls on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F098XA011MI - Moist Loamy Drift Plains

Hydric soil rating: No

Kd—Kilmanagh loam

Map Unit Setting

National map unit symbol: 68cr

Elevation: 580 to 780 feet

Mean annual precipitation: 31 to 35 inches

Mean annual air temperature: 45 to 47 degrees F

Frost-free period: 135 to 184 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Kilmanagh and similar soils: 87 percent

Minor components: 13 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kilmanagh

Setting

Landform: Depressions on till plains, drainageways on till plains, flats on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Dense loamy till

Typical profile

Ap - 0 to 9 inches: loam
Bg - 9 to 26 inches: loam
Bw - 26 to 29 inches: loam
C - 29 to 44 inches: loam
Cd - 44 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Shebeon

Percent of map unit: 8 percent
Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Badaxe

Percent of map unit: 4 percent
Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Corunna

Percent of map unit: 1 percent
Landform: Flats on till plains, depressions on till plains, drainageways on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

La—Lake beach, sandy

Map Unit Setting

National map unit symbol: 2mdmz
Elevation: 470 to 900 feet
Mean annual precipitation: 30 to 38 inches
Mean annual air temperature: 45 to 51 degrees F
Frost-free period: 128 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Lake beach, sandy: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lake Beach, Sandy

Setting

Landform: Beaches
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Ecological site: F099XY001MI - Coastal Dune Complex
Hydric soil rating: Unranked

Lb—Lake beach, rocky

Map Unit Setting

National map unit symbol: 2mdnq
Elevation: 470 to 900 feet
Mean annual precipitation: 30 to 38 inches

Custom Soil Resource Report

Mean annual air temperature: 45 to 51 degrees F

Frost-free period: 128 to 205 days

Farmland classification: Not prime farmland

Map Unit Composition

Lake beach, rocky: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lake Beach, Rocky

Setting

Landform: Beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Ecological site: F099XY001MI - Coastal Dune Complex

Hydric soil rating: Unranked

Lc—Lake beach, stony

Map Unit Setting

National map unit symbol: 2mdng

Elevation: 470 to 900 feet

Mean annual precipitation: 30 to 38 inches

Mean annual air temperature: 45 to 51 degrees F

Frost-free period: 128 to 205 days

Farmland classification: Not prime farmland

Map Unit Composition

Lake beach, stony: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lake Beach, Stony

Setting

Landform: Beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Ecological site: F099XY001MI - Coastal Dune Complex

Hydric soil rating: Unranked

LdA0—Linwood muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69yf
Elevation: 730 to 830 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Linwood and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Linwood

Setting

Landform: Depressions on ground moraines, depressions on drainageways
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Woody organic material over loamy till

Typical profile

Oa1 - 0 to 15 inches: muck
Oa2 - 15 to 24 inches: muck
Oa3 - 24 to 28 inches: muck
Cg - 28 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very high (about 16.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

LeA0—Linwood and Timakwa mucks, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2qz3s
Elevation: 590 to 870 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Linwood and similar soils: 51 percent
Timakwa and similar soils: 49 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Linwood

Setting

Landform: Depressions on ground moraines, depressions on glacial drainage channels
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Woody organic material over loamy till

Typical profile

Oa1 - 0 to 15 inches: muck
Oa2 - 15 to 24 inches: muck
Oa3 - 24 to 28 inches: muck
Cg - 28 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very high (about 16.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Description of Timakwa

Setting

Landform: Depressions on till plains, flats on ground moraines, depressions on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Woody organic material over sandy glaciofluvial deposits

Typical profile

Oa1 - 0 to 12 inches: muck

Oa2 - 12 to 24 inches: muck

Oa3 - 24 to 30 inches: muck

Cg - 30 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 13.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

LgB2—Londo loam, 0 to 5 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 2wcf

Elevation: 580 to 1,110 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 135 to 210 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Londo, moderately eroded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Londo, Moderately Eroded

Setting

Landform: Lake terraces on end moraines
Down-slope shape: Convex, linear
Across-slope shape: Linear, concave, convex
Parent material: Loamy till

Typical profile

Ap - 0 to 4 inches: loam
B/E - 4 to 5 inches: sandy loam
B/E - 5 to 7 inches: loam
Bt - 7 to 13 inches: clay loam
BC - 13 to 21 inches: loam
C - 21 to 80 inches: loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.1 to 0.4 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Guelph, moderately eroded

Percent of map unit: 6 percent
Landform: Lake terraces on end moraines
Microfeatures of landform position: Rises
Down-slope shape: Convex, linear
Across-slope shape: Linear, concave, convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Parkhill

Percent of map unit: 2 percent
Landform: Lake terraces on end moraines
Microfeatures of landform position: Closed depressions
Down-slope shape: Convex, linear
Across-slope shape: Linear, concave, convex
Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Poseyville

Percent of map unit: 2 percent

Landform: Lake terraces on end moraines

Microfeatures of landform position: Rises

Down-slope shape: Convex, linear

Across-slope shape: Linear, concave, convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

LkA—Londo loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wcfb

Elevation: 580 to 1,110 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 135 to 210 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Londo and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Londo

Setting

Landform: Moraines, glacial drainage channels, water-lain moraines

Down-slope shape: Convex, linear

Across-slope shape: Linear, concave, convex

Parent material: Loamy till

Typical profile

Ap - 0 to 9 inches: loam

B/E - 9 to 10 inches: sandy loam

B/E - 10 to 12 inches: loam

Bt - 12 to 18 inches: clay loam

BC - 18 to 24 inches: loam

C - 24 to 79 inches: loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Depth to water table: About 7 to 10 inches

Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 5 percent
Landform: Water-lain moraines, moraines, glacial drainage channels
Microfeatures of landform position: Closed depressions
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex, concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Tappan

Percent of map unit: 3 percent
Landform: Water-lain moraines, wave-worked till plains
Microfeatures of landform position: Closed depressions
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Poseyville

Percent of map unit: 2 percent
Landform: Wave-worked till plains
Microfeatures of landform position: Rises
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Lm—Lamson fine sandy loam

Map Unit Setting

National map unit symbol: 690s
Elevation: 570 to 840 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 47 to 49 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Lamson and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lamson

Setting

Landform: Drainageways on lake plains, depressions on lake plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Stratified coarse-loamy glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: fine sandy loam

Bg1 - 9 to 18 inches: very fine sandy loam

Bg2 - 18 to 29 inches: very fine sandy loam

Bg3 - 29 to 33 inches: stratified very fine sandy loam to silt loam

Cg - 33 to 49 inches: very fine sandy loam

C1 - 49 to 55 inches: loamy very fine sand

C2 - 55 to 80 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minor Components

Bach

Percent of map unit: 4 percent

Landform: Drainageways on lake plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minoa

Percent of map unit: 3 percent
Landform: Knolls on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Lenawee

Percent of map unit: 3 percent
Landform: Drainageways on lake plains, depressions on lake plains, flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Ln—Linwood muck

Map Unit Setting

National map unit symbol: 68cn
Elevation: 590 to 840 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Farmland of local importance

Map Unit Composition

Linwood and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Linwood

Setting

Landform: Bogs on till plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Woody organic material over loamy till

Typical profile

Oa1 - 0 to 9 inches: muck
Oa2 - 9 to 18 inches: muck
Oa3 - 18 to 25 inches: muck
2Cg - 25 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very high (about 16.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Minor Components

Pinnebog

Percent of map unit: 5 percent
Landform: Bogs on till plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

LpA—Londo complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6911
Elevation: 580 to 710 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 48 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Londo, thin sandy surface layer, and similar soils: 50 percent
Londo and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Londo, Thin Sandy Surface Layer

Setting

Landform: Water-lain moraines, knolls on till plains
Landform position (three-dimensional): Rise

Custom Soil Resource Report

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 10 inches: loamy fine sand

E - 10 to 12 inches: sand

Bt - 12 to 17 inches: sandy loam

2Cg - 17 to 80 inches: loam

Properties and qualities

Slope: 1 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Londo

Setting

Landform: Water-lain moraines, flats on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: loam

B/E - 8 to 11 inches: clay loam

Bt - 11 to 18 inches: clay loam

C1 - 18 to 29 inches: loam

C2 - 29 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to
moderately high (0.06 to 0.60 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Custom Soil Resource Report

Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Avoca

Percent of map unit: 10 percent

Landform: Knolls on till plains, ridges on till plains

Landform position (two-dimensional): Footslope, toeslope, backslope, shoulder, summit

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Parkhill

Percent of map unit: 5 percent

Landform: Drainageways on till plains, depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

MaA1—McBride fine sandy loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69yq

Elevation: 720 to 830 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Mcbride and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcbride

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MaB1—McBride fine sandy loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69yr
Elevation: 650 to 890 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Mcbride and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MaB2—McBride fine sandy loam, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69ys
Elevation: 720 to 850 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Mcbride, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride, Moderately Eroded

Setting

Landform: Knolls on ground moraines

Custom Soil Resource Report

Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MaC1—McBride fine sandy loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69yt
Elevation: 700 to 860 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mcbride and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: Recessionial moraines

Custom Soil Resource Report

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MaC2—McBride fine sandy loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69yv

Elevation: 750 to 880 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

McBride, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride, Moderately Eroded

Setting

Landform: Recessionial moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MaD1—McBride fine sandy loam, 12 to 18 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69yw

Elevation: 780 to 850 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Mcbride and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcbride

Setting

Landform: Recessionial moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MaD2—McBride fine sandy loam, 12 to 18 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69yx

Elevation: 790 to 870 feet

Custom Soil Resource Report

Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Mcbride, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcbride, Moderately Eroded

Setting

Landform: Recessionial moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Concave, linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MaD3—McBride fine sandy loam, 12 to 18 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69yy

Elevation: 770 to 860 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Mcbride, severely eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride, Severely Eroded

Setting

Landform: Recessional moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: fine sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MbA1—McBride sandy loam and Montcalm loamy sand, 0 to 3 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69yz
Elevation: 680 to 820 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mcbride and similar soils: 55 percent
Montcalm and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MbB1—McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z0

Custom Soil Resource Report

Elevation: 610 to 830 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mcbride and similar soils: 55 percent

Montcalm and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcbride

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MbB3—McBride sandy loam and Montcalm loamy sand, 3 to 8 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69z1
Elevation: 780 to 790 feet
Mean annual precipitation: 30 to 30 inches
Mean annual air temperature: 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mcbride, severely eroded, and similar soils: 55 percent
Montcalm, severely eroded, and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride, Severely Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam
E - 2 to 5 inches: loamy sand
Bs - 5 to 10 inches: sandy loam
Ex - 10 to 16 inches: fine sand
Bt - 16 to 30 inches: sandy loam
BC - 30 to 45 inches: sandy loam
C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Montcalm, Severely Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MbC1—McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z2

Elevation: 740 to 820 feet

Mean annual precipitation: 30 to 31 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

McBride and similar soils: 55 percent

Montcalm and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

Custom Soil Resource Report

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MbC2—McBride sandy loam and Montcalm loamy sand, 8 to 15 percent slopes, moderately or severely eroded

Map Unit Setting

National map unit symbol: 69z3

Elevation: 720 to 790 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mcbride, moderately eroded, and similar soils: 55 percent

Montcalm, moderately eroded, and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcbride, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interflue

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MbD1—McBride sandy loam and Montcalm loamy sand, 15 to 25 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z4

Elevation: 760 to 820 feet

Mean annual precipitation: 31 to 31 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Mcbride and similar soils: 55 percent

Montcalm and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MbE3—McBride sandy loam and Montcalm loamy sand, 15+ percent slopes, moderately or severely eroded

Map Unit Setting

National map unit symbol: 69z5

Elevation: 770 to 830 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

McBride, severely eroded, and similar soils: 55 percent

Montcalm, severely eroded, and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of McBride, Severely Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 2 inches: sandy loam

E - 2 to 5 inches: loamy sand

Bs - 5 to 10 inches: sandy loam

Ex - 10 to 16 inches: fine sand

Bt - 16 to 30 inches: sandy loam

BC - 30 to 45 inches: sandy loam

C - 45 to 80 inches: sandy loam

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very low (about 1.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Montcalm, Severely Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

McA0—Mcgregor sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 69z6
Elevation: 780 to 810 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 46 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mcgregor and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcgregor

Setting

Landform: Outwash plains, beaches
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: sandy loam
E - 8 to 15 inches: gravelly sandy loam
Btg - 15 to 25 inches: gravelly sandy clay loam
2Cg - 25 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

McB1—Mcgregor sandy loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z7

Elevation: 730 to 850 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mcgregor and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mcgregor

Setting

Landform: Outwash plains, beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: sandy loam

E - 8 to 15 inches: gravelly sandy loam

Btg - 15 to 25 inches: gravelly sandy clay loam

2Cg - 25 to 80 inches: stratified gravelly sand to sand

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Md—Made land

Map Unit Setting

National map unit symbol: 2mdvk
Elevation: 630 to 750 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Made land: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Made Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

MeA1—Mancelona loamy sand, 0 to 3 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69z9
Elevation: 610 to 810 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona

Setting

Landform: Deltas, beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 5 inches: loamy sand
E - 5 to 7 inches: sand

Custom Soil Resource Report

Bs - 7 to 14 inches: sand
E' - 14 to 26 inches: sand
2Bt - 26 to 29 inches: sandy loam
3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 8.04 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MeB1—Mancelona loamy sand, 3 to 8 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zb
Elevation: 600 to 860 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona

Setting

Landform: Deltas, beach ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 5 inches: loamy sand
E - 5 to 7 inches: sand
Bs - 7 to 14 inches: sand

Custom Soil Resource Report

E' - 14 to 26 inches: sand

2Bt - 26 to 29 inches: sandy loam

3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 8.04 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MeB2—Mancelona loamy sand, 3 to 8 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zc

Elevation: 730 to 820 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona, Moderately Eroded

Setting

Landform: Deltas, beach ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 5 inches: loamy sand

E - 5 to 7 inches: sand

Bs - 7 to 14 inches: sand

Custom Soil Resource Report

E' - 14 to 26 inches: sand

2Bt - 26 to 29 inches: sandy loam

3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 8.04 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MeC1—Mancelona loamy sand, 8 to 15 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zd

Elevation: 620 to 840 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona

Setting

Landform: Kames, beach ridges

Landform position (two-dimensional): Footslope, backslope, toeslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 5 inches: loamy sand

Custom Soil Resource Report

E - 5 to 7 inches: sand

Bs - 7 to 14 inches: sand

E' - 14 to 26 inches: sand

2Bt - 26 to 29 inches: sandy loam

3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 8.04 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MeC2—Mancelona loamy sand, 8 to 15 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zf

Elevation: 640 to 860 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona, Moderately Eroded

Setting

Landform: Kames, beach ridges

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Custom Soil Resource Report

Parent material: Sandy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 5 inches: loamy sand

E - 5 to 7 inches: sand

Bs - 7 to 14 inches: sand

E' - 14 to 26 inches: sand

2Bt - 26 to 29 inches: sandy loam

3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 8.04 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MeD1—Mancelona loamy sand, 15+ percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zg

Elevation: 710 to 860 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Mancelona and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona

Setting

Landform: Kames, beach ridges

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Custom Soil Resource Report

Down-slope shape: Convex, linear

Across-slope shape: Concave, convex

Parent material: Sandy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 5 inches: loamy sand

E - 5 to 7 inches: sand

Bs - 7 to 14 inches: sand

E' - 14 to 26 inches: sand

2Bt - 26 to 29 inches: sandy loam

3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 8.04 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MeD2—Mancelona loamy sand, 15+ percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zh

Elevation: 730 to 810 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Mancelona, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona, Moderately Eroded

Setting

Landform: Kames

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Custom Soil Resource Report

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Sandy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 5 inches: loamy sand
E - 5 to 7 inches: sand
Bs - 7 to 14 inches: sand
E' - 14 to 26 inches: sand
2Bt - 26 to 29 inches: sandy loam
3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 8.04 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MeD3—Mancelona loamy sand, 15+ percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69zj
Elevation: 680 to 840 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Mancelona, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona, Severely Eroded

Setting

Landform: Kames

Custom Soil Resource Report

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Convex, linear

Across-slope shape: Concave, convex

Parent material: Sandy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 5 inches: loamy sand

E - 5 to 7 inches: sand

Bs - 7 to 14 inches: sand

E' - 14 to 26 inches: sand

2Bt - 26 to 29 inches: sandy loam

3C - 29 to 80 inches: stratified gravelly sand to very gravelly sand to sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 8.04 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MfA1—Marlette loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zk

Elevation: 760 to 830 feet

Mean annual precipitation: 31 to 31 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

MfB1—Marlette loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zl
Elevation: 730 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Depressions on ground moraines
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

MfB2—Marlette loam, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zm
Elevation: 770 to 810 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MfB3—Marlette loam, 2 to 6 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69zn
Elevation: 770 to 840 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 47 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Severely Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MfC1—Marlette loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zp

Elevation: 770 to 830 feet

Mean annual precipitation: 31 to 31 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on end moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MfC2—Marlette loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zq

Elevation: 770 to 820 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Knolls on end moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MfC3—Marlette loam, 6 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69zr
Elevation: 710 to 730 feet
Mean annual precipitation: 31 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Severely Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Interfluvium, crest, base slope, side slope, nose slope, head slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches

Custom Soil Resource Report

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MfD1—Marlette loam, 12 to 18 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zs
Elevation: 770 to 870 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Custom Soil Resource Report

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

MfD2—Marlette loam, 12 to 18 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zt
Elevation: 720 to 730 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Convex, linear
Across-slope shape: Concave, convex
Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam
E - 3 to 6 inches: loam
B/E - 6 to 15 inches: loam
Bt - 15 to 30 inches: clay loam
C - 30 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MfD3—Marlette loam, 12 to 18 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 69zv

Elevation: 740 to 890 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, severely eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Severely Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Convex, linear

Across-slope shape: Concave, convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 12 to 18 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Custom Soil Resource Report

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MfE2—Marlette loam, 18 to 25 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zw

Elevation: 780 to 850 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Convex, linear

Across-slope shape: Concave, convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 18 to 25 percent

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MgA1—Marlette silt loam and loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zx

Elevation: 730 to 820 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 1

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

MgB1—Marlette silt loam and loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 69zy

Elevation: 730 to 820 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

MgB2—Marlette silt loam and loam, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 69zz

Elevation: 730 to 830 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette, moderately eroded, and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

MgC1—Marlette silt loam and loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b00

Elevation: 730 to 800 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Ground moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interflue

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Custom Soil Resource Report

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MgC2—Marlette silt loam and loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b01

Elevation: 780 to 890 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Ground moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: silt loam

E - 3 to 6 inches: loam

B/E - 6 to 15 inches: loam

Bt - 15 to 30 inches: clay loam

C - 30 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MhA1—Melita and Arenac loamy sands, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b02

Elevation: 580 to 800 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Melita and similar soils: 55 percent

Arenac and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melita

Setting

Landform: Beaches on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bhs - 6 to 10 inches: loamy sand

Bs - 10 to 16 inches: sand

C1 - 16 to 30 inches: sand

C2 - 30 to 45 inches: sand

2C3 - 45 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Description of Arenac

Setting

Landform: Beaches on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

A - 0 to 2 inches: sand

E - 2 to 7 inches: sand

Bhs - 7 to 12 inches: sand

Bs - 12 to 24 inches: sand

C1 - 24 to 54 inches: sand

2C2 - 54 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

MhB1—Melita and Arenac loamy sands, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b03

Elevation: 580 to 830 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Melita and similar soils: 55 percent

Arenac and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melita

Setting

Landform: Beach ridges on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bhs - 6 to 10 inches: loamy sand

Bs - 10 to 16 inches: sand

C1 - 16 to 30 inches: sand

C2 - 30 to 45 inches: sand

2C3 - 45 to 80 inches: loam

Properties and qualities

Slope: 2 to 7 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Custom Soil Resource Report

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Description of Arenac

Setting

Landform: Beaches on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

A - 0 to 2 inches: sand

E - 2 to 7 inches: sand

Bhs - 7 to 12 inches: sand

Bs - 12 to 24 inches: sand

C1 - 24 to 54 inches: sand

2C2 - 54 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 4 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

MkC1—Melita loamy sand, 7 to 14 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b04

Elevation: 580 to 730 feet

Mean annual precipitation: 31 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Melita and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melita

Setting

Landform: Beach ridges

Landform position (two-dimensional): Footslope, backslope, summit, toeslope

Landform position (three-dimensional): Side slope, base slope, crest

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bhs - 6 to 10 inches: loamy sand

Bs - 10 to 16 inches: sand

C1 - 16 to 30 inches: sand

C2 - 30 to 45 inches: sand

2C3 - 45 to 80 inches: loam

Properties and qualities

Slope: 7 to 14 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)*

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MkD2—Melita loamy sand, 14+ percent slopes, slightly to severely eroded

Map Unit Setting

National map unit symbol: 6b05

Elevation: 580 to 780 feet

Mean annual precipitation: 31 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Custom Soil Resource Report

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Melita, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Melita, Moderately Eroded

Setting

Landform: Beach ridges

Landform position (two-dimensional): Footslope, backslope, summit, toeslope

Landform position (three-dimensional): Side slope, base slope, crest

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 2 inches: loamy sand

E - 2 to 6 inches: sand

Bhs - 6 to 10 inches: loamy sand

Bs - 10 to 16 inches: sand

C1 - 16 to 30 inches: sand

C2 - 30 to 45 inches: sand

2C3 - 45 to 80 inches: loam

Properties and qualities

Slope: 14 to 20 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MIA—Metamora sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6913

Elevation: 630 to 860 feet

Mean annual precipitation: 31 to 32 inches

Custom Soil Resource Report

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 151 to 204 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Metamora and similar soils: 86 percent

Minor components: 14 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Metamora

Setting

Landform: Knolls on till plains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 10 inches: sandy loam

E - 10 to 18 inches: sandy loam

Bt1 - 18 to 23 inches: sandy loam

2Bt2 - 23 to 31 inches: clay loam

2Cg1 - 31 to 39 inches: clay loam

2Cg2 - 39 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Corunna

Percent of map unit: 3 percent

Landform: Depressions on till plains, drainageways on till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Custom Soil Resource Report

Hydric soil rating: Yes

Conover

Percent of map unit: 3 percent

Landform: Flats on till plains

Landform position (two-dimensional): Summit, toeslope, footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Blount

Percent of map unit: 3 percent

Landform: Knolls on till plains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Parkhill

Percent of map unit: 2 percent

Landform: Drainageways on till plains, depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Lamson

Percent of map unit: 2 percent

Landform: Depressions on till plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Metea

Percent of map unit: 1 percent

Landform: Ridges on till plains, knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MmB—Menominee loamy sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6fwb
Elevation: 750 to 1,110 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Menominee and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Menominee

Setting

Landform: Moraines, knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits and/or glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 4 inches: loamy sand
E - 4 to 6 inches: sand
Bs - 6 to 14 inches: loamy sand
E' - 14 to 22 inches: sand
2Bt - 22 to 29 inches: clay loam
2C - 29 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: C

Custom Soil Resource Report

Ecological site: F098XA014MI - Dry Sandy Drift Plains
Hydric soil rating: No

Minor Components

losco

Percent of map unit: 5 percent
Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F098XA017MI - Moist Acidic Drift Flats
Hydric soil rating: No

MmC1—Menominee loamy sand, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b06
Elevation: 790 to 870 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Menominee and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Menominee

Setting

Landform: Recessional moraines
Landform position (two-dimensional): Toeslope, footslope, shoulder, backslope, summit
Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 7 inches: sand
Bs1 - 7 to 13 inches: sand
Bs2 - 13 to 24 inches: sand
BC - 24 to 27 inches: sand
2C - 27 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: B

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MmC2—Menominee loamy sand, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b07

Elevation: 770 to 810 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Menominee, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Menominee, Moderately Eroded

Setting

Landform: Recessionial moraines

Landform position (two-dimensional): Toeslope, footslope, shoulder, backslope, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 7 inches: sand

Bs1 - 7 to 13 inches: sand

Bs2 - 13 to 24 inches: sand

BC - 24 to 27 inches: sand

2C - 27 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MnA0—Montcalm loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6fwy
Elevation: 750 to 960 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: Knolls on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 11 inches: loamy sand
E - 11 to 22 inches: loamy sand
E and Bt1 - 22 to 41 inches: loamy sand
E and Bt2 - 41 to 54 inches: sand
C - 54 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F098XA014MI - Dry Sandy Drift Plains
Hydric soil rating: No

MnA1—Montcalm loamy sand, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b08
Elevation: 690 to 810 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Custom Soil Resource Report

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MnB0—Montcalm loamy sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6fwz
Elevation: 750 to 1,010 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: Knolls on moraines, outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 11 inches: loamy sand
E - 11 to 22 inches: loamy sand
E and Bt1 - 22 to 41 inches: loamy sand
E and Bt2 - 41 to 54 inches: sand
C - 54 to 80 inches: fine sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Custom Soil Resource Report

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F098XA014MI - Dry Sandy Drift Plains

Hydric soil rating: No

MnB1—Montcalm loamy sand, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b09

Elevation: 580 to 840 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Custom Soil Resource Report

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MnB2—Montcalm loamy sand, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b0b

Elevation: 760 to 820 feet

Mean annual precipitation: 30 to 31 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm, Moderately Eroded

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Custom Soil Resource Report

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

MnC1—Montcalm loamy sand, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0c

Elevation: 760 to 810 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: End moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Nose slope, crest, base slope, side slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand

E - 2 to 6 inches: loamy fine sand

Bs - 6 to 9 inches: loamy sand

E' - 9 to 27 inches: fine sand

Bt - 27 to 37 inches: sandy loam

E and Bt - 37 to 68 inches: sand

C - 68 to 80 inches: sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MnC2—Montcalm loamy sand, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b0d
Elevation: 760 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montcalm, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm, Moderately Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Nose slope, crest, base slope, side slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand

Custom Soil Resource Report

E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MnD1—Montcalm loamy sand, 12 to 18 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0f
Elevation: 780 to 840 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Montcalm and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Nose slope, crest, base slope, side slope, head slope, interfluvium
Down-slope shape: Concave, linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MnD2—Montcalm loamy sand, 12 to 18 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b0g
Elevation: 790 to 860 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Montcalm, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montcalm, Moderately Eroded

Setting

Landform: End moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Custom Soil Resource Report

Landform position (three-dimensional): Nose slope, crest, base slope, side slope, head slope, interfluvium
Down-slope shape: Concave, linear
Across-slope shape: Convex
Parent material: Loamy and/or sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: loamy sand
E - 2 to 6 inches: loamy fine sand
Bs - 6 to 9 inches: loamy sand
E' - 9 to 27 inches: fine sand
Bt - 27 to 37 inches: sandy loam
E and Bt - 37 to 68 inches: sand
C - 68 to 80 inches: sand

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

MoB—Miami-Dighton sandy loams, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6919
Elevation: 720 to 860 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Miami and similar soils: 51 percent
Dighton and similar soils: 49 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Miami

Setting

Landform: Knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 9 inches: sandy loam
E - 9 to 13 inches: clay loam
Bt1 - 13 to 23 inches: clay loam
Bt2 - 23 to 30 inches: silty clay loam
C - 30 to 80 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Dighton

Setting

Landform: Knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till over sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: sandy loam
B/E - 8 to 18 inches: clay loam
Bt - 18 to 29 inches: clay loam
BC - 29 to 36 inches: fine sandy loam
2E and Bt - 36 to 57 inches: stratified fine sand to loamy fine sand
2C - 57 to 80 inches: sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Custom Soil Resource Report

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MpB—Marlette sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6fvj

Elevation: 770 to 970 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 108 to 178 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Till plains, knolls on moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: sandy loam

E - 8 to 18 inches: sandy loam

B/E - 18 to 23 inches: loam

Bt - 23 to 31 inches: clay loam

C - 31 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C

Ecological site: F098XA015MI - Dry Loamy Drift Plains

Hydric soil rating: No

Minor Components

Capac

Percent of map unit: 5 percent

Landform: Drainageways on moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F098XA011MI - Moist Loamy Drift Plains

Hydric soil rating: No

MpB2—Marlette sandy loam, 2 to 6 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6fvk

Elevation: 750 to 1,000 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 108 to 178 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Marlette, moderately eroded, and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Till plains, knolls on moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: sandy loam
E - 8 to 18 inches: sandy loam
B/E - 18 to 23 inches: loam
Bt - 23 to 31 inches: clay loam
C - 31 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F098XA015MI - Dry Loamy Drift Plains
Hydric soil rating: No

Minor Components

Capac

Percent of map unit: 5 percent
Landform: Drainageways on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

MpC—Marlette sandy loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: 6fvl
Elevation: 750 to 980 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Marlette and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: sandy loam

E - 8 to 18 inches: sandy loam

B/E - 18 to 23 inches: loam

Bt - 23 to 31 inches: clay loam

C - 31 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F098XA015MI - Dry Loamy Drift Plains

Hydric soil rating: No

MpC2—Marlette sandy loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6fvm

Elevation: 760 to 1,030 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 108 to 178 days

Farmland classification: Farmland of local importance

Map Unit Composition

Marlette, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette, Moderately Eroded

Setting

Landform: Knolls on moraines

Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit

Landform position (three-dimensional): Crest, base slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: sandy loam

E - 8 to 18 inches: sandy loam

B/E - 18 to 23 inches: loam

Bt - 23 to 31 inches: clay loam

C - 31 to 80 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F098XA015MI - Dry Loamy Drift Plains

Hydric soil rating: No

MrA—Minoa fine sandy loam, clay substratum, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 691d

Elevation: 570 to 790 feet

Mean annual precipitation: 31 to 33 inches

Mean annual air temperature: 47 to 49 degrees F

Frost-free period: 151 to 204 days

Custom Soil Resource Report

Farmland classification: Prime farmland if drained

Map Unit Composition

Minoa, clay substratum, and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Minoa, Clay Substratum

Setting

Landform: Knolls on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Coarse-loamy over stratified clayey glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: fine sandy loam

Bw1 - 9 to 19 inches: fine sandy loam

Bw2 - 19 to 22 inches: loamy fine sand

Bw3 - 22 to 32 inches: silt loam

2C - 32 to 80 inches: clay

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Minoa

Percent of map unit: 5 percent

Landform: Knolls on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

MsB—Mancelona loamy sand, moderately fine substratum, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6fvf
Elevation: 760 to 1,000 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mancelona, moderately fine substratum, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mancelona, Moderately Fine Substratum

Setting

Landform: Knolls on outwash plains, lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy over sandy and gravelly glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 8 inches: loamy sand
Bs - 8 to 12 inches: gravelly loamy sand
E - 12 to 20 inches: loamy sand
Bt - 20 to 48 inches: gravelly loamy sand
2C - 48 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F098XA014MI - Dry Sandy Drift Plains

Hydric soil rating: No

MtB—Marlette-Capac complex, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 692s
Elevation: 730 to 980 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 47 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Marlette and similar soils: 65 percent
Capac and similar soils: 30 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marlette

Setting

Landform: Moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: sandy loam
B/E - 8 to 20 inches: loam
Bt1 - 20 to 28 inches: clay loam
Bt2 - 28 to 31 inches: loam
C - 31 to 80 inches: loam

Properties and qualities

Slope: 0 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F098XA015MI - Dry Loamy Drift Plains

Custom Soil Resource Report

Hydric soil rating: No

Description of Capac

Setting

Landform: Swales on moraines
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy till

Typical profile

Ap - 0 to 10 inches: loam
B/E - 10 to 13 inches: loam
Bt1 - 13 to 26 inches: clay loam
Bt2 - 26 to 32 inches: clay loam
C - 32 to 80 inches: loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Minor Components

Metamora

Percent of map unit: 1 percent
Landform: Swales on moraines
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: F098XA011MI - Moist Loamy Drift Plains
Hydric soil rating: No

Boyer

Percent of map unit: 1 percent
Landform: Moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F098XA014MI - Dry Sandy Drift Plains
Hydric soil rating: No

Metea

Percent of map unit: 1 percent
Landform: Moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F098XA015MI - Dry Loamy Drift Plains
Hydric soil rating: No

Wolcott

Percent of map unit: 1 percent
Landform: Depressions on moraines, drainageways on moraines
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

Spinks

Percent of map unit: 1 percent
Landform: Moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F098XA014MI - Dry Sandy Drift Plains
Hydric soil rating: No

MvB—Metamora sandy loam, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 692b
Elevation: 610 to 740 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Metamora and similar soils: 91 percent
Minor components: 9 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Metamora

Setting

Landform: Knolls, flats
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear
Across-slope shape: Convex, linear

Custom Soil Resource Report

Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 10 inches: sandy loam

E - 10 to 20 inches: sandy loam

2Bt - 20 to 28 inches: loam

2C - 28 to 80 inches: loam

Properties and qualities

Slope: 0 to 4 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Wixom

Percent of map unit: 4 percent

Landform: Knolls, flats, moraines

Landform position (three-dimensional): Rise, talf

Down-slope shape: Linear

Across-slope shape: Convex, linear

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Corunna

Percent of map unit: 3 percent

Landform: Drainageways, depressions

Landform position (three-dimensional): Talf, dip

Down-slope shape: Linear

Across-slope shape: Linear, concave

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Belleville

Percent of map unit: 2 percent

Landform: Depressions, drainageways

Landform position (three-dimensional): Dip, talf

Down-slope shape: Linear

Across-slope shape: Concave, linear

Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

Mw—Mussey-Gilford sandy loams

Map Unit Setting

National map unit symbol: 6fxh
Elevation: 750 to 940 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Mussey and similar soils: 50 percent
Gilford and similar soils: 45 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mussey

Setting

Landform: Lake plains, outwash plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 9 inches: loam
Btg1 - 9 to 12 inches: loam
Btg2 - 12 to 18 inches: clay loam
2Cg - 18 to 80 inches: stratified very gravelly sand to gravelly sand to sand to coarse sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F098XA012MI - Wet Loamy Depressions

Custom Soil Resource Report

Hydric soil rating: Yes

Description of Gilford

Setting

Landform: Outwash plains, lake plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy over sandy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: sandy loam

A - 8 to 11 inches: sandy loam

Bg1 - 11 to 15 inches: sandy loam

Bg2 - 15 to 30 inches: sandy loam

Cg1 - 30 to 34 inches: sand

Cg2 - 34 to 80 inches: gravelly sand

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: A/D

Ecological site: F098XA012MI - Wet Loamy Depressions

Hydric soil rating: Yes

Minor Components

Timakwa

Percent of map unit: 5 percent

Landform: Depressions on lake plains, depressions on outwash plains

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA006MI - Mucky Depressions

Hydric soil rating: Yes

MxB—Metea loamy fine sand, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: 692x
Elevation: 600 to 970 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 146 to 188 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Metea and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Metea

Setting

Landform: Knolls, ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 12 inches: loamy fine sand
E - 12 to 32 inches: loamy fine sand
Bt1 - 32 to 37 inches: fine sandy loam
2Bt2 - 37 to 43 inches: sandy clay loam
2C1 - 43 to 57 inches: loam
2C2 - 57 to 80 inches: loam

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Custom Soil Resource Report

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Marlette

Percent of map unit: 3 percent

Landform: Knolls, ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Spinks

Percent of map unit: 3 percent

Landform: Knolls, ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Londo

Percent of map unit: 2 percent

Landform: Knolls

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Wixom

Percent of map unit: 2 percent

Landform: Knolls

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Guelph

Percent of map unit: 2 percent

Landform: Knolls, ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

NaA1—Newaygo sandy loam, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0h
Elevation: 580 to 830 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Newaygo and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newaygo

Setting

Landform: Knolls on beach ridges, outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
Bs - 7 to 9 inches: sandy loam
Bt1 - 9 to 14 inches: sandy loam
Bt2 - 14 to 24 inches: sandy clay loam
2C - 24 to 80 inches: very gravelly sand, gravelly sand, sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

NaB1—Newaygo sandy loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0j
Elevation: 600 to 830 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Newaygo and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newaygo

Setting

Landform: Knolls on beach ridges, outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
Bs - 7 to 9 inches: sandy loam
Bt1 - 9 to 14 inches: sandy loam
Bt2 - 14 to 24 inches: sandy clay loam
2C - 24 to 80 inches: very gravelly sand, gravelly sand, sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

NaC1—Newaygo sandy loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0k

Elevation: 650 to 790 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Newaygo and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newaygo

Setting

Landform: Kames

Landform position (two-dimensional): Toeslope, footslope, backslope, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy over sandy and gravelly glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

Bs - 7 to 9 inches: sandy loam

Bt1 - 9 to 14 inches: sandy loam

Bt2 - 14 to 24 inches: sandy clay loam

2C - 24 to 80 inches: very gravelly sand, gravelly sand, sand

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

NaC2—Newaygo sandy loam, 6 to 12 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b0l

Elevation: 720 to 800 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Newaygo, moderately eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Newaygo, Moderately Eroded

Setting

Landform: Kames

Landform position (two-dimensional): Toeslope, footslope, backslope, summit

Landform position (three-dimensional): Crest, base slope, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy alluvium over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam

Bs - 7 to 9 inches: sandy loam

Bt1 - 9 to 14 inches: sandy loam

Bt2 - 14 to 24 inches: sandy clay loam

2C - 24 to 80 inches: very gravelly sand, gravelly sand, sand

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

OaA0—Otisco loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0m
Elevation: 740 to 820 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Otisco and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Otisco

Setting

Landform: Knolls on glacial drainage channels
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy and/or loamy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
E - 8 to 11 inches: loamy sand
Bs - 11 to 18 inches: loamy sand
E' - 18 to 24 inches: loamy sand
Bt1 - 24 to 32 inches: sandy loam
Bt2 - 32 to 44 inches: coarse sandy loam
C - 44 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY007MI - Lake Plain Flats

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Edmore

Percent of map unit: 10 percent
Landform: Depressions on glacial drainage channels
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

OaB1—Otisco loamy sand, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0n
Elevation: 770 to 810 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 46 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Otisco and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Otisco

Setting

Landform: Knolls on glacial drainage channels
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy and/or loamy glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
E - 8 to 11 inches: loamy sand
Bs - 11 to 18 inches: loamy sand
E' - 18 to 24 inches: loamy sand
Bt1 - 24 to 32 inches: sandy loam
Bt2 - 32 to 44 inches: coarse sandy loam
C - 44 to 80 inches: loamy sand

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 10 percent

Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Edmore

Percent of map unit: 10 percent

Landform: Depressions on glacial drainage channels

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

PaA0—Palms muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0p

Elevation: 710 to 770 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Palms and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palms

Setting

Landform: Flats on till plains

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material over loamy till

Typical profile

Oa1 - 0 to 10 inches: muck

Custom Soil Resource Report

Oa2 - 10 to 22 inches: muck
Oa3 - 22 to 24 inches: muck
Cg - 24 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Very high (about 13.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

PbA0—Palms and Adrian mucks, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0q
Elevation: 720 to 850 feet
Mean annual precipitation: 30 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Palms and similar soils: 55 percent
Adrian and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palms

Setting

Landform: Flats on till plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material over loamy till

Typical profile

Oa1 - 0 to 10 inches: muck
Oa2 - 10 to 22 inches: muck
Oa3 - 22 to 24 inches: muck

Custom Soil Resource Report

Cg - 24 to 80 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Very high (about 13.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Description of Adrian

Setting

Landform: Depressions on glacial drainage channels, flats on till plains

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material over sandy glaciofluvial deposits

Typical profile

Oa1 - 0 to 6 inches: muck

Oa2 - 6 to 20 inches: muck

Oa3 - 20 to 26 inches: muck

2Cg - 26 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 12.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

PcA0—Parkhill loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tx84
Elevation: 580 to 890 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 150 to 230 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Parkhill and similar soils: 87 percent
Minor components: 13 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkhill

Setting

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Loamy lodgment till

Typical profile

Ap - 0 to 9 inches: loam
Bg - 9 to 29 inches: clay loam
C - 29 to 57 inches: loam
2Cd - 57 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 36 to 63 inches to densic material
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline (0.1 to 0.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D

Custom Soil Resource Report

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minor Components

Crosier

Percent of map unit: 7 percent

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains

Landform position (two-dimensional): Footslope, backslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Corunna

Percent of map unit: 5 percent

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear, concave

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Ziegenfuss

Percent of map unit: 1 percent

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear, concave

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

PcB1—Parkhill loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0s

Elevation: 740 to 810 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Parkhill and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkhill

Setting

Landform: Flats on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bg1 - 7 to 12 inches: loam
Bg2 - 12 to 16 inches: loam
Bg3 - 16 to 30 inches: loam
BCg - 30 to 36 inches: loam
Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

PdA0—Parkhill loam and clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0t
Elevation: 600 to 890 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Parkhill and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkhill

Setting

Landform: Flats on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: clay loam
Bg1 - 7 to 12 inches: clay loam
Bg2 - 12 to 16 inches: loam
Bg3 - 16 to 30 inches: loam
BCg - 30 to 36 inches: loam
Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

PeA0—Parkhill loam and mucky loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0v
Elevation: 640 to 850 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Parkhill and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Parkhill

Setting

Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: mucky loam
Bg1 - 7 to 12 inches: loam
Bg2 - 12 to 16 inches: loam
Bg3 - 16 to 30 inches: loam
BCg - 30 to 36 inches: loam
Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

PfA0—Perth silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0w
Elevation: 790 feet
Mean annual precipitation: 32 inches
Mean annual air temperature: 46 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Perth and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Perth

Setting

Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey till

Typical profile

Ap - 0 to 6 inches: silt loam
Eg - 6 to 8 inches: silt loam
Bt - 8 to 14 inches: silty clay loam
Cg - 14 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Parkhill

Percent of map unit: 10 percent
Landform: Till-floored lake plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

PIB—Pert-Sims loams, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 691q

Custom Soil Resource Report

Elevation: 630 to 780 feet
Mean annual precipitation: 31 to 31 inches
Mean annual air temperature: 48 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Pert and similar soils: 62 percent
Sims and similar soils: 27 percent
Minor components: 11 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pert

Setting

Landform: Flats on ground moraines, knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Clayey till

Typical profile

Ap - 0 to 7 inches: loam
Bt - 7 to 17 inches: clay
Cg1 - 17 to 24 inches: silty clay loam
Cg2 - 24 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Sims

Setting

Landform: Depressions on ground moraines, drainageways on ground moraines
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey till

Typical profile

Ap - 0 to 9 inches: loam
Bg1 - 9 to 19 inches: silty clay loam
Bg2 - 19 to 30 inches: clay
Cg1 - 30 to 41 inches: silty clay loam
Cg2 - 41 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Wasepi

Percent of map unit: 5 percent
Landform: Ridges on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Morley, eroded

Percent of map unit: 2 percent
Landform: Ridges on ground moraines
Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Base slope, crest, side slope, nose slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Metea

Percent of map unit: 2 percent
Landform: Ridges on ground moraines, knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex

Custom Soil Resource Report

Ecological site: F099XY004MI - Warm Dry Sandy Ridge

Hydric soil rating: No

Boyer

Percent of map unit: 2 percent

Landform: Outwash terraces on ground moraines

Landform position (two-dimensional): Shoulder, backslope, summit, footslope, toeslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY004MI - Warm Dry Sandy Ridge

Hydric soil rating: No

Pm—Palms muck

Map Unit Setting

National map unit symbol: 691I

Elevation: 570 to 830 feet

Mean annual precipitation: 31 to 33 inches

Mean annual air temperature: 47 to 49 degrees F

Frost-free period: 151 to 204 days

Farmland classification: Farmland of local importance

Map Unit Composition

Palms and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palms

Setting

Landform: Depressions on till plains, depressions on glacial drainage channels, depressions on till-floored lake plains

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material over loamy ablation till

Typical profile

Oa1 - 0 to 5 inches: muck

Oa2 - 5 to 22 inches: muck

2Cg - 22 to 62 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Very low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 1.98 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 20 percent

Available water supply, 0 to 60 inches: Very high (about 15.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Minor Components

Lamson

Percent of map unit: 3 percent

Landform: Depressions on till-floored lake plains, depressions on deltas,
depressions on glacial drainage channels

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Bach

Percent of map unit: 3 percent

Landform: Depressions on flats on glacial drainage channels

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Thomas

Percent of map unit: 3 percent

Landform: Depressions on glacial drainage channels, depressions on till-floored
lake plains

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Parkhill

Percent of map unit: 3 percent

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Houghton

Percent of map unit: 3 percent

Custom Soil Resource Report

Landform: Depressions on glacial drainage channels, depressions on till plains, depressions on till-floored lake plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

Pn—Pinnebog muck

Map Unit Setting

National map unit symbol: 68d3
Elevation: 760 to 850 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 46 to 46 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Not prime farmland

Map Unit Composition

Pinnebog and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pinnebog

Setting

Landform: Flats on bogs
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material

Typical profile

Oa1 - 0 to 16 inches: muck
Oa2 - 16 to 34 inches: muck
Oe - 34 to 50 inches: mucky peat
O'a - 50 to 80 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 25.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

PoB—Perrin loamy sand, 0 to 4 percent slopes

Map Unit Setting

National map unit symbol: 692p
Elevation: 590 to 930 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Farmland of local importance

Map Unit Composition

Perrin and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Perrin

Setting

Landform: Beach ridges, knolls
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 11 inches: loamy sand
E - 11 to 20 inches: loamy sand
Bt - 20 to 32 inches: fine sandy loam
2C1 - 32 to 40 inches: sand
2C2 - 40 to 80 inches: very gravelly sand

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)
Depth to water table: About 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s

Custom Soil Resource Report

Hydrologic Soil Group: A

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Minor Components

Boyer

Percent of map unit: 4 percent

Landform: Ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Wasepi

Percent of map unit: 4 percent

Landform: Depressions, knolls

Landform position (three-dimensional): Dip, rise

Down-slope shape: Linear

Across-slope shape: Concave, convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

PrB—Pert loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 691p

Elevation: 650 to 770 feet

Mean annual precipitation: 31 to 31 inches

Mean annual air temperature: 48 to 48 degrees F

Frost-free period: 151 to 204 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Pert and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pert

Setting

Landform: Flats on till plains, water-lain moraines, knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Clayey till

Typical profile

Ap - 0 to 7 inches: loam

Bt - 7 to 17 inches: clay

Custom Soil Resource Report

Cg1 - 17 to 24 inches: silty clay loam

Cg2 - 24 to 80 inches: silty clay loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Sims

Percent of map unit: 5 percent

Landform: Water-lain moraines, depressions on till plains, drainageways on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Morley, eroded

Percent of map unit: 3 percent

Landform: Knolls on till plains

Landform position (two-dimensional): Summit, shoulder, backslope, footslope, toeslope

Landform position (three-dimensional): Base slope, crest, side slope, nose slope, head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Metea

Percent of map unit: 2 percent

Landform: Ridges on till plains, knolls on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY004MI - Warm Dry Sandy Ridge

Hydric soil rating: No

RaA0—Richter and Tonkey bouldery sandy loam and loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0x
Elevation: 680 to 790 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Richter, bouldery, and similar soils: 55 percent
Tonkey, bouldery, and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Richter, Bouldery

Setting

Landform: Outwash plains, knolls on glacial drainage channels
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Stratified loamy and sandy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: bouldery sandy loam
E - 7 to 12 inches: loamy sand
Bt - 12 to 24 inches: loam
C - 24 to 80 inches: stratified gravelly sand to sand to sandy loam to loam

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Tonkey, Bouldery

Setting

Landform: Outwash plains, depressions on glacial drainage channels

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Stratified loamy and sandy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: bouldery sandy loam

E - 7 to 14 inches: loamy sand

Bw - 14 to 28 inches: loam

C - 28 to 80 inches: stratified gravelly sand to sand to sandy loam to loam

Properties and qualities

Slope: 0 to 2 percent

Surface area covered with cobbles, stones or boulders: 0.1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

RaB1—Richter and Tonkey bouldery sandy loam and loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b0y

Elevation: 750 to 760 feet

Mean annual precipitation: 32 to 32 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Richter, bouldery, and similar soils: 55 percent

Custom Soil Resource Report

Tonkey, bouldery, and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Richter, Bouldery

Setting

Landform: Outwash plains, knolls on glacial drainage channels
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Stratified sandy and/or loamy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: bouldery sandy loam
E - 7 to 12 inches: loamy sand
Bt - 12 to 24 inches: loam
C - 24 to 80 inches: stratified gravelly sand to sand to sandy loam to loam

Properties and qualities

Slope: 2 to 6 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of Tonkey, Bouldery

Setting

Landform: Outwash plains, depressions on glacial drainage channels
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified loamy and sandy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: bouldery sandy loam
E - 7 to 14 inches: loamy sand
Bw - 14 to 28 inches: loam
C - 28 to 80 inches: stratified gravelly sand to sand to sandy loam to loam

Properties and qualities

Slope: 0 to 2 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

RbA0—Rifle peat, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b0z

Elevation: 720 to 800 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 179 days

Farmland classification: Not prime farmland

Map Unit Composition

Rifle and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rifle

Setting

Landform: Depressions on till plains, depressions on ground moraines, flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Woody organic material

Typical profile

Oa - 0 to 14 inches: muck

Oe - 14 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Minor Components

Wallkill

Percent of map unit: 5 percent

Landform: Flats on glacial drainage channels

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

RcA0—Roscommon loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b10

Elevation: 580 to 790 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Roscommon and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Roscommon

Setting

Landform: Flats on outwash plains, flats on drainageways

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 4 inches: loamy sand

Bw - 4 to 25 inches: sand

Custom Soil Resource Report

C1 - 25 to 45 inches: sand

C2 - 45 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 10 percent

Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: A/D

Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

RdA0—Roscommon mucky loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b11

Elevation: 580 to 810 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Roscommon and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Roscommon

Setting

Landform: Flats on outwash plains, flats on drainageways

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 4 inches: mucky loamy sand

Bw - 4 to 25 inches: sand

C1 - 25 to 45 inches: sand

C2 - 45 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

ReA1—Grattan sand, 0 to 2 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3t
Elevation: 750 to 820 feet
Mean annual precipitation: 30 to 31 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Grattan and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Knolls on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand
E - 2 to 8 inches: sand
Bs - 8 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

ReB1—Grattan sand, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3v
Elevation: 670 to 840 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Grattan and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Stream terraces on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand
E - 2 to 8 inches: sand
Bs - 8 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Custom Soil Resource Report

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

ReB3—Grattan sand, 2 to 7 percent slopes, moderately or severely eroded

Map Unit Setting

National map unit symbol: 2qz3w
Elevation: 770 to 790 feet
Mean annual precipitation: 30 to 30 inches
Mean annual air temperature: 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Grattan, severely eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan, Severely Eroded

Setting

Landform: Stream terraces on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand
E - 2 to 8 inches: sand
Bs - 8 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

ReC1—Grattan sand, 7 to 14 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3x

Elevation: 760 to 820 feet

Mean annual precipitation: 30 to 31 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Grattan and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Stream terraces on outwash plains

Landform position (two-dimensional): Toeslope, backslope, summit

Landform position (three-dimensional): Side slope, base slope, crest

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand

E - 2 to 8 inches: sand

Bs - 8 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 7 to 14 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

ReC2—Grattan sand, 7 to 14 percent slopes, moderately or severely eroded

Map Unit Setting

National map unit symbol: 2qz3y
Elevation: 750 to 810 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Grattan, moderately eroded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan, Moderately Eroded

Setting

Landform: Stream terraces on outwash plains
Landform position (two-dimensional): Toeslope, backslope, summit
Landform position (three-dimensional): Side slope, base slope, crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand
E - 2 to 8 inches: sand
Bs - 8 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 7 to 14 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A

Custom Soil Resource Report

Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

ReD1—Grattan sand, 14+ percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 2qz3z
Elevation: 760 to 840 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Grattan and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan

Setting

Landform: Stream terraces on outwash plains
Landform position (two-dimensional): Toeslope, backslope, summit
Landform position (three-dimensional): Crest, side slope, base slope
Down-slope shape: Concave, linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand
E - 2 to 8 inches: sand
Bs - 8 to 24 inches: sand
C - 24 to 80 inches: sand

Properties and qualities

Slope: 14 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

ReD3—Grattan sand, 14+ percent slopes, moderately or severely eroded

Map Unit Setting

National map unit symbol: 2qz40

Elevation: 760 to 850 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Grattan, severely eroded, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grattan, Severely Eroded

Setting

Landform: Stream terraces on outwash plains

Landform position (two-dimensional): Toeslope, backslope, summit

Landform position (three-dimensional): Side slope, base slope, crest

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits

Typical profile

A - 0 to 2 inches: sand

E - 2 to 8 inches: sand

Bs - 8 to 24 inches: sand

C - 24 to 80 inches: sand

Properties and qualities

Slope: 14 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: A

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

RpA—Rapson loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 68cf
Elevation: 600 to 830 feet
Mean annual precipitation: 31 to 35 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Farmland of local importance

Map Unit Composition

Rapson and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rapson

Setting

Landform: Ridges on lake plains, knolls on lake plains, flats on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Sandy over stratified loamy glaciolacustrine deposits

Typical profile

A - 0 to 4 inches: loamy sand
E - 4 to 9 inches: sand
Bs - 9 to 14 inches: loamy sand
BC - 14 to 25 inches: sand
2C - 25 to 56 inches: stratified silt loam to very fine sand to fine sand
2Cg - 56 to 80 inches: stratified very fine sand to silt loam to fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (0.60 to 20.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Minor Components

Covert

Percent of map unit: 5 percent
Landform: Knolls on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Shebeon

Percent of map unit: 5 percent
Landform: Knolls on till plains, flats on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Sanilac

Percent of map unit: 5 percent
Landform: Flats on lake plains, knolls on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

SaA0—Sanilac silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b19
Elevation: 580 to 810 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Sanilac and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sanilac

Setting

Landform: Deltas on lake plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Convex

Parent material: Stratified coarse-silty glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: silt loam

Bw1 - 8 to 12 inches: silt loam

Bw2 - 12 to 15 inches: loam

C - 15 to 80 inches: stratified fine sand to very fine sand to silt loam to silt

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Bach

Percent of map unit: 10 percent

Landform: Depressions on lake plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

SaB1—Sanilac silt loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b1b

Elevation: 580 to 820 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Sanilac and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sanilac

Setting

Landform: Deltas on lake plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Stratified coarse-silty glaciofluvial deposits

Typical profile

Ap - 0 to 8 inches: silt loam

Bw1 - 8 to 12 inches: silt loam

Bw2 - 12 to 15 inches: loam

C - 15 to 80 inches: stratified fine sand to very fine sand to silt loam to silt

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Gagetown

Percent of map unit: 10 percent

Landform: Deltas on lake plains

Landform position (three-dimensional): Head slope, interfluvium, crest, base slope,
side slope

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

SbA0—Saverine and losco fine sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1c
Elevation: 580 to 820 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Saverine and similar soils: 55 percent
losco and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine

Setting

Landform: Flats on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam
E1 - 7 to 9 inches: fine sandy loam
E2 - 9 to 12 inches: fine sandy loam
Bt - 12 to 19 inches: fine sandy loam
Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam
2C - 30 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats

Custom Soil Resource Report

Hydric soil rating: No

Description of losco

Setting

Landform: Depressions on till plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

BC - 25 to 30 inches: sand

C - 30 to 36 inches: sand

2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

SbB1—Saverine and losco fine sandy loams, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b1d

Elevation: 580 to 800 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Saverine and similar soils: 55 percent

losco and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam

E1 - 7 to 9 inches: fine sandy loam

E2 - 9 to 12 inches: fine sandy loam

Bt - 12 to 19 inches: fine sandy loam

Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam

2C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)*

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of losco

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand

E - 6 to 8 inches: sand

Bs1 - 8 to 15 inches: sand

Bs2 - 15 to 25 inches: sand

Custom Soil Resource Report

BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

SbB2—Saverine and losco fine sandy loams, 2 to 7 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b1f
Elevation: 680 to 780 feet
Mean annual precipitation: 30 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Saverine, moderately eroded, and similar soils: 55 percent
losco, moderately eroded, and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine, Moderately Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam

Custom Soil Resource Report

E1 - 7 to 9 inches: fine sandy loam
E2 - 9 to 12 inches: fine sandy loam
Bt - 12 to 19 inches: fine sandy loam
Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam
2C - 30 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of losco, Moderately Eroded

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

SbC1—Saverine and losco fine sandy loams, 7 to 14 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b1g
Elevation: 580 to 760 feet
Mean annual precipitation: 31 to 34 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Saverine and similar soils: 55 percent
losco and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine

Setting

Landform: Ground moraines
Landform position (two-dimensional): Toeslope, footslope, backslope
Landform position (three-dimensional): Base slope, side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam
E1 - 7 to 9 inches: fine sandy loam
E2 - 9 to 12 inches: fine sandy loam
Bt - 12 to 19 inches: fine sandy loam
Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam
2C - 30 to 80 inches: loam

Properties and qualities

Slope: 7 to 14 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of losco

Setting

Landform: Ground moraines
Landform position (two-dimensional): Toeslope, footslope, backslope
Landform position (three-dimensional): Base slope, side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 7 to 14 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

SbC2—Saverine and losco fine sandy loams, 7 to 14 percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b1h

Elevation: 590 to 720 feet

Mean annual precipitation: 31 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Saverine, moderately eroded, and similar soils: 55 percent

losco, moderately eroded, and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine, Moderately Eroded

Setting

Landform: Ground moraines

Landform position (two-dimensional): Toeslope, footslope, backslope

Landform position (three-dimensional): Base slope, nose slope, side slope

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam

E1 - 7 to 9 inches: fine sandy loam

E2 - 9 to 12 inches: fine sandy loam

Bt - 12 to 19 inches: fine sandy loam

Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam

2C - 30 to 80 inches: loam

Properties and qualities

Slope: 7 to 14 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Custom Soil Resource Report

Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of losco, Moderately Eroded

Setting

Landform: Ground moraines
Landform position (two-dimensional): Toeslope, footslope, backslope
Landform position (three-dimensional): Base slope, side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 7 to 14 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

SbD1—Saverine and losco fine sandy loams, 14+ percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b1j
Elevation: 600 to 730 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 46 to 48 degrees F

Custom Soil Resource Report

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Saverine and similar soils: 55 percent

Iosco and similar soils: 45 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine

Setting

Landform: Ground moraines

Landform position (two-dimensional): Toeslope, footslope, backslope

Landform position (three-dimensional): Base slope, side slope, nose slope

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam

E1 - 7 to 9 inches: fine sandy loam

E2 - 9 to 12 inches: fine sandy loam

Bt - 12 to 19 inches: fine sandy loam

Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam

2C - 30 to 80 inches: loam

Properties and qualities

Slope: 14 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Iosco

Setting

Landform: Ground moraines

Landform position (two-dimensional): Toeslope, footslope, backslope

Landform position (three-dimensional): Base slope, side slope, nose slope

Down-slope shape: Concave, linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 14 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

SbD2—Saverine and losco fine sandy loams, 14+ percent slopes, moderately eroded

Map Unit Setting

National map unit symbol: 6b1k
Elevation: 620 to 730 feet
Mean annual precipitation: 33 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Saverine, moderately eroded, and similar soils: 55 percent
losco, moderately eroded, and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saverine, Moderately Eroded

Setting

Landform: Ground moraines
Landform position (two-dimensional): Toeslope, footslope, backslope

Custom Soil Resource Report

Landform position (three-dimensional): Base slope, side slope, nose slope
Down-slope shape: Concave, linear
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 7 inches: fine sandy loam
E1 - 7 to 9 inches: fine sandy loam
E2 - 9 to 12 inches: fine sandy loam
Bt - 12 to 19 inches: fine sandy loam
Cg - 19 to 30 inches: stratified fine sand to very fine sand to silt loam
2C - 30 to 80 inches: loam

Properties and qualities

Slope: 14 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Description of losco, Moderately Eroded

Setting

Landform: Ground moraines
Landform position (two-dimensional): Toeslope, footslope, backslope
Landform position (three-dimensional): Base slope, side slope, nose slope
Down-slope shape: Concave, linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 6 inches: loamy sand
E - 6 to 8 inches: sand
Bs1 - 8 to 15 inches: sand
Bs2 - 15 to 25 inches: sand
BC - 25 to 30 inches: sand
C - 30 to 36 inches: sand
2Cg - 36 to 80 inches: loam

Properties and qualities

Slope: 14 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.21 to 2.28 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

ScA0—Spalding peat, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1l

Elevation: 760 to 790 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Spalding and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Spalding

Setting

Landform: Flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Herbaceous organic material and/or woody organic material

Typical profile

Oe1 - 0 to 5 inches: muck

Oe2 - 5 to 20 inches: muck

Oe3 - 20 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Custom Soil Resource Report

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 25.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6w

Hydrologic Soil Group: A/D

Ecological site: F099XY015MI - Acidic Peaty Depression

Hydric soil rating: Yes

SfA—Selfridge loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2whvw

Elevation: 540 to 830 feet

Mean annual precipitation: 28 to 38 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 135 to 210 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Selfridge and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Selfridge

Setting

Landform: Deltas, glacial drainage channels, water-lain moraines, nearshore zones (relict), wave-worked till plains

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear, convex

Across-slope shape: Linear, convex

Parent material: Sandy and loamy glaciolacustrine deposits over loamy till

Typical profile

Ap - 0 to 9 inches: loamy sand

E - 9 to 17 inches: sand

Bw - 17 to 27 inches: sand

Bt1 - 27 to 30 inches: sandy loam

2Bt2 - 30 to 35 inches: clay loam

2Cg - 35 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Custom Soil Resource Report

Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Minor Components

Belleville

Percent of map unit: 5 percent
Landform: Deltas, glacial drainage channels, water-lain moraines, wave-worked till plains, nearshore zones (relict)
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Open depressions
Down-slope shape: Linear, concave
Across-slope shape: Concave
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

Parkhill

Percent of map unit: 3 percent
Landform: Wave-worked till plains, nearshore zones (relict), water-lain moraines, glacial drainage channels, deltas
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Microfeatures of landform position: Open depressions
Down-slope shape: Linear, concave
Across-slope shape: Concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Capac

Percent of map unit: 2 percent
Landform: Deltas, glacial drainage channels, water-lain moraines, wave-worked till plains, nearshore zones (relict)
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

ShA—Shebeon loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2wb2d
Elevation: 580 to 820 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 150 to 230 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Shebeon and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shebeon

Setting

Landform: Wave-worked till plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy lodgment till

Typical profile

Ap - 0 to 9 inches: loam
Bt - 9 to 17 inches: clay loam
C - 17 to 26 inches: loam
2Cd - 26 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 18 to 39 inches to densic material
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Kilmanagh

Percent of map unit: 7 percent
Landform: Wave-worked till plains
Microfeatures of landform position: Open depressions
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Avoca

Percent of map unit: 3 percent
Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Aubarque

Percent of map unit: 2 percent
Landform: Wave-worked till plains
Microfeatures of landform position: Rises
Down-slope shape: Linear
Across-slope shape: Linear, convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

SloacA—Sloan, frequently flooded, and Ceresco, occasionally flooded, soils, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 31b27
Elevation: 580 to 810 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 135 to 210 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Sloan and similar soils: 45 percent
Ceresco and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sloan

Setting

Landform: Meander scars on flood plains, oxbows on flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Loamy alluvium

Typical profile

A - 0 to 11 inches: loam

Bg1 - 11 to 17 inches: silty clay loam

Bg2 - 17 to 45 inches: silt loam

Cg - 45 to 79 inches: stratified silt loam to silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately low (0.01 to 0.14 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: Frequent

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D

Ecological site: F099XY009MI - Wet Floodplain

Hydric soil rating: Yes

Description of Ceresco

Setting

Landform: Flood plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy alluvium

Typical profile

A - 0 to 12 inches: loam

Bw - 12 to 21 inches: sandy loam

Bg - 21 to 30 inches: sandy loam

Cg - 30 to 79 inches: stratified sandy loam to loamy fine sand to sand to loamy sand to loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Custom Soil Resource Report

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 to 1.42 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 6.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F098XA003MI - Moist Floodplains

Hydric soil rating: No

Minor Components

Landes

Percent of map unit: 10 percent

Landform: Terraces on flood plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY008MI - Moist Floodplain

Hydric soil rating: No

Abscota

Percent of map unit: 5 percent

Landform: Terraces on flood plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear, convex

Ecological site: F099XY008MI - Moist Floodplain

Hydric soil rating: No

Glendora

Percent of map unit: 3 percent

Landform: Flats on flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope, talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA004MI - Wet Floodplains

Hydric soil rating: Yes

Adrian

Percent of map unit: 1 percent

Landform: Backswamps on flood plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Concave

Ecological site: F099XY014MI - Mucky Depression

Hydric soil rating: Yes

Saranac

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA004MI - Wet Floodplains
Hydric soil rating: Yes

Sn—Sloan loam

Map Unit Setting

National map unit symbol: 6fyd
Elevation: 760 to 1,070 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Sloan, frequently flooded, and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sloan, Frequently Flooded

Setting

Landform: Meander scars on flood plains, oxbows on flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

A - 0 to 12 inches: loam
Bg1 - 12 to 24 inches: loam
Bg2 - 24 to 34 inches: silt loam
2Cg - 34 to 80 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: None

Custom Soil Resource Report

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Very high (about 12.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: B/D

Ecological site: F098XA004MI - Wet Floodplains

Hydric soil rating: Yes

SpB—Spinks loamy fine sand, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 692y

Elevation: 570 to 720 feet

Mean annual precipitation: 28 to 34 inches

Mean annual air temperature: 45 to 52 degrees F

Frost-free period: 140 to 160 days

Farmland classification: Farmland of local importance

Map Unit Composition

Spinks and similar soils: 91 percent

Minor components: 9 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Spinks

Setting

Landform: Ridges on moraines, knolls on moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy and/or loamy glaciofluvial deposits

Typical profile

A - 0 to 7 inches: loamy fine sand

E - 7 to 21 inches: fine sand

E and Bt - 21 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Custom Soil Resource Report

Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Minor Components

Boyer

Percent of map unit: 3 percent
Landform: Ridges on moraines, knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY006MI - Cool Dry Sandy Ridge
Hydric soil rating: No

Thetford

Percent of map unit: 3 percent
Landform: Depressions on moraines, drainageways on moraines
Landform position (three-dimensional): Dip, rise, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Metea

Percent of map unit: 3 percent
Landform: Ridges on moraines, knolls on moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

TaA0—Tappan loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2v14t
Elevation: 580 to 820 feet
Mean annual precipitation: 28 to 38 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 150 to 230 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Tappan and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tappan

Setting

Landform: Wave-worked till plains, water-lain moraines

Down-slope shape: Linear

Across-slope shape: Concave

Parent material: Loamy lodgment till

Typical profile

Ap - 0 to 11 inches: loam

Bg - 11 to 22 inches: loam

Cg - 22 to 43 inches: loam

Cd - 43 to 79 inches: loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: 20 to 60 inches to densic material

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Gypsum, maximum content: 1 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 3.9 mmhos/cm)

Sodium adsorption ratio, maximum: 3.0

Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Minor Components

Londo

Percent of map unit: 6 percent

Landform: Water-lain moraines, till-floored lake plains, wave-worked till plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Avoca

Percent of map unit: 4 percent

Landform: Till-floored lake plains, moraines, drainageways, wave-worked till plains

Landform position (two-dimensional): Footslope, backslope

Landform position (three-dimensional): Interfluvium, base slope

Down-slope shape: Linear

Across-slope shape: Convex

Custom Soil Resource Report

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

Belleville

Percent of map unit: 2 percent

Landform: Till-floored lake plains, moraines, depressions, wave-worked till plains

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Interfluve, base slope

Down-slope shape: Linear

Across-slope shape: Linear, concave

Ecological site: F099XY012MI - Cool Wet Sandy Depression

Hydric soil rating: Yes

TbA0—Tappan mucky loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1n

Elevation: 750 to 810 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Tappan and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tappan

Setting

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: mucky loam

Bg1 - 8 to 15 inches: loam

Bg2 - 15 to 25 inches: loam

Cg - 25 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

TcA0—Timakwa muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2qz41

Elevation: 730 to 810 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Farmland of local importance

Map Unit Composition

Timakwa and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Timakwa

Setting

Landform: Depressions on till plains, depressions on ground moraines, flats on glacial drainage channels

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Woody organic material over sandy glaciofluvial deposits

Typical profile

Oa1 - 0 to 12 inches: muck

Oa2 - 12 to 20 inches: muck

Cg - 20 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

TdA0—Thomas mucky silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1q
Elevation: 590 to 610 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Thomas and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Thomas

Setting

Landform: Till plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

A - 0 to 6 inches: mucky silt loam
Bg - 6 to 16 inches: silty clay loam
Cg - 16 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 11.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D

Custom Soil Resource Report

Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

TeA0—Tobico mucky loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1r
Elevation: 730 to 790 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Farmland of local importance

Map Unit Composition

Tobico and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tobico

Setting

Landform: Flats on outwash plains, beaches
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 3 inches: mucky loamy sand
Cg1 - 3 to 8 inches: sand
Cg2 - 8 to 18 inches: sand
Cg3 - 18 to 30 inches: sand
Cg4 - 30 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

TfA0—Tonkey sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1s
Elevation: 600 to 850 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Tonkey and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tonkey

Setting

Landform: Depressions on glacial drainage channels
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified sandy and loamy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
E - 7 to 14 inches: loamy sand
Bw - 14 to 28 inches: loam
C - 28 to 80 inches: stratified gravelly sand to sand to sandy loam to loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

TgA0—Tonkey and Bach fine sandy loams, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1t
Elevation: 580 to 870 feet
Mean annual precipitation: 30 to 34 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Tonkey and similar soils: 55 percent
Bach and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tonkey

Setting

Landform: Deltas on lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified sandy and/or loamy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: sandy loam
E - 7 to 14 inches: loamy sand
Bw - 14 to 28 inches: loam
C - 28 to 80 inches: stratified gravelly sand to sand to sandy loam to loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Description of Bach

Setting

Landform: Deltas on lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bg1 - 7 to 20 inches: very fine sandy loam
Bg2 - 20 to 34 inches: very fine sandy loam
C - 34 to 80 inches: stratified fine sand to very fine sand to silt

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

TgB1—Tonkey and Bach fine sandy loams, 2 to 7 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b1v
Elevation: 710 to 800 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Tonkey and similar soils: 55 percent
Bach and similar soils: 45 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tonkey

Setting

Landform: Till plains, deltas on lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified sandy and/or loamy glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: fine sandy loam
E - 7 to 14 inches: loamy sand
Bw - 14 to 28 inches: loam
C - 28 to 80 inches: stratified gravelly sand to sand to sandy loam to loam

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Description of Bach

Setting

Landform: Till plains, deltas on lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bg1 - 7 to 20 inches: very fine sandy loam
Bg2 - 20 to 34 inches: very fine sandy loam
C - 34 to 80 inches: stratified fine sand to very fine sand to silt

Properties and qualities

Slope: 2 to 7 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 2.00 in/hr)

Custom Soil Resource Report

Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

ThA0—Tyre loamy sand and sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b1w
Elevation: 740 to 790 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Tyre and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyre

Setting

Landform: Knolls on ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over sandstone bedrock

Typical profile

A - 0 to 3 inches: loamy sand
AB - 3 to 8 inches: loamy sand
C - 8 to 24 inches: cobbly loamy sand
R - 24 to 80 inches: bedrock

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.16 to 1.98 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A/D

Ecological site: F099XY005MI - Cool Moist Sandy Depression

Hydric soil rating: No

ThB1—Tyre loamy sand and sandy loam, 2 to 6 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b1x

Elevation: 740 to 750 feet

Mean annual precipitation: 32 to 32 inches

Mean annual air temperature: 47 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Not prime farmland

Map Unit Composition

Tyre and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyre

Setting

Landform: Knolls on ground moraines

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over sandstone bedrock

Typical profile

A - 0 to 3 inches: loamy sand

AB - 3 to 8 inches: loamy sand

C - 8 to 24 inches: cobbly loamy sand

R - 24 to 80 inches: bedrock

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.16 to 1.98 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

ThC1—Tyre loamy sand and sandy loam, 6 to 12 percent slopes, slightly eroded

Map Unit Setting

National map unit symbol: 6b1y
Elevation: 750 feet
Mean annual precipitation: 32 inches
Mean annual air temperature: 47 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Tyre and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tyre

Setting

Landform: Knolls on ground moraines
Landform position (two-dimensional): Toeslope, footslope, backslope, shoulder, summit
Landform position (three-dimensional): Crest, base slope, side slope, head slope, interfluvium
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits over sandstone bedrock

Typical profile

A - 0 to 3 inches: loamy sand
AB - 3 to 8 inches: loamy sand
C - 8 to 24 inches: cobbly loamy sand
R - 24 to 80 inches: bedrock

Properties and qualities

Slope: 6 to 12 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.16 to 1.98 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Tk—Tonkey fine sandy loam

Map Unit Setting

National map unit symbol: 6fyr
Elevation: 760 to 930 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Tonkey and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tonkey

Setting

Landform: Outwash plains, lake plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified sandy and/or loamy glaciofluvial deposits

Typical profile

A - 0 to 8 inches: fine sandy loam
Bg1 - 8 to 20 inches: sandy loam
Bg2 - 20 to 24 inches: sandy loam
BC - 24 to 37 inches: fine sandy loam
2Cg - 37 to 80 inches: stratified fine sandy loam to loamy sand to sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.60 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F098XA012MI - Wet Loamy Depressions
Hydric soil rating: Yes

To—Tobico mucky sandy loam

Map Unit Setting

National map unit symbol: 68ck
Elevation: 670 to 820 feet
Mean annual precipitation: 32 to 34 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Farmland of local importance

Map Unit Composition

Tobico and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tobico

Setting

Landform: Flats on outwash plains, drainageways on outwash plains, depressions on outwash plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits

Typical profile

A1 - 0 to 5 inches: mucky sandy loam
A2 - 5 to 8 inches: mucky sandy loam
Cg1 - 8 to 10 inches: sandy loam
Cg2 - 10 to 19 inches: loamy sand
Cg3 - 19 to 25 inches: sand
2C - 25 to 35 inches: gravelly sand
2Cg - 35 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

Minor Components

Riverdale

Percent of map unit: 5 percent
Landform: Outwash plains, knolls
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Pipestone

Percent of map unit: 5 percent
Landform: Knolls on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

TrA—Tedrow loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6fyp
Elevation: 780 to 960 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 108 to 178 days
Farmland classification: Farmland of local importance

Map Unit Composition

Tedrow and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tedrow

Setting

Landform: Knolls on outwash plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap - 0 to 11 inches: loamy sand
Bw1 - 11 to 16 inches: loamy fine sand
Bw2 - 16 to 23 inches: loamy fine sand
Cg1 - 23 to 40 inches: fine sand
Cg2 - 40 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (2.00 to 20.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F098XA019MI - Moist Sandy Drift Plains
Hydric soil rating: No

Minor Components

Granby

Percent of map unit: 5 percent
Landform: Drainageways on outwash plains, depressions on outwash plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F098XA020MI - Wet Sandy Drift Depressions
Hydric soil rating: Yes

W—Water

Map Unit Setting

National map unit symbol: 2n9rr
Elevation: 670 to 890 feet
Mean annual precipitation: 30 to 32 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

WaA0—Wallkill loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b20

Elevation: 600 to 830 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 137 to 179 days

Farmland classification: Not prime farmland

Map Unit Composition

Wallkill and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wallkill

Setting

Landform: Depressions on glacial drainage channels

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy colluvium over herbaceous organic material

Typical profile

A - 0 to 7 inches: loam

Cg - 7 to 15 inches: loam

20a - 15 to 80 inches: muck

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: Very high (about 20.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

WbA0—Warners muck and marl, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b21
Elevation: 740 feet
Mean annual precipitation: 32 to 32 inches
Mean annual air temperature: 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Warners and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Warners

Setting

Landform: Depressions on till plains, depressions on moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material over marl

Typical profile

Oa - 0 to 6 inches: muck
Lma1 - 6 to 20 inches: marly material
Lma2 - 20 to 80 inches: marly material

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 90 percent
Available water supply, 0 to 60 inches: Very high (about 13.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

WcA0—Washtenaw loam and silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b22

Elevation: 580 to 890 feet

Mean annual precipitation: 30 to 33 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Washtenaw and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Washtenaw

Setting

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine-loamy colluvium

Typical profile

Ap - 0 to 7 inches: silt loam

Cg - 7 to 20 inches: stratified loam to silt loam

2Ab - 20 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

WcB0—Washtenaw loam and silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6b23

Elevation: 700 to 870 feet

Mean annual precipitation: 30 to 32 inches

Mean annual air temperature: 46 to 47 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Washtenaw and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Washtenaw

Setting

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine-loamy colluvium

Typical profile

Ap - 0 to 7 inches: silt loam

Cg - 7 to 20 inches: stratified loam to silt loam

2Ab - 20 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

WdA0—Washtenaw sandy loam and loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b24

Elevation: 580 to 880 feet

Mean annual precipitation: 30 to 34 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 127 to 174 days

Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Washtenaw and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Washtenaw

Setting

Landform: Depressions on till plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine-loamy colluvium

Typical profile

Ap - 0 to 7 inches: sandy loam

Cg - 7 to 20 inches: stratified loam to silt loam

2Ab - 20 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

WdB0—Washtenaw sandy loam and loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6b25
Elevation: 670 to 860 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Washtenaw and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Washtenaw

Setting

Landform: Depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-loamy colluvium

Typical profile

Ap - 0 to 7 inches: sandy loam
Cg - 7 to 20 inches: stratified loam to silt loam
2Ab - 20 to 80 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

WeA0—Willette muck, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6b26
Elevation: 770 to 870 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 46 to 47 degrees F
Frost-free period: 127 to 174 days
Farmland classification: Not prime farmland

Map Unit Composition

Willette and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Willette

Setting

Landform: Depressions on drainageways, depressions on ground moraines
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Woody organic material over clayey till

Typical profile

Oa1 - 0 to 8 inches: muck
Oa2 - 8 to 15 inches: muck
Oa3 - 15 to 20 inches: muck
Oa4 - 20 to 25 inches: muck
Cg - 25 to 80 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Very high (about 13.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: F099XY014MI - Mucky Depression
Hydric soil rating: Yes

WfA—Wainola-Deford fine sands, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6924
Elevation: 570 to 830 feet
Mean annual precipitation: 31 to 33 inches
Mean annual air temperature: 47 to 49 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Not prime farmland

Map Unit Composition

Wainola and similar soils: 57 percent
Deford and similar soils: 27 percent
Minor components: 16 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wainola

Setting

Landform: Beaches, outwash plains, knolls on deltas
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Sandy glaciolacustrine deposits

Typical profile

A - 0 to 9 inches: fine sand
Bs1 - 9 to 16 inches: fine sand
Bs2 - 16 to 25 inches: fine sand
BC - 25 to 37 inches: fine sand
Cg1 - 37 to 49 inches: fine sand
Cg2 - 49 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression

Custom Soil Resource Report

Hydric soil rating: No

Description of Deford

Setting

Landform: Depressions on deltas, drainageways on deltas

Landform position (three-dimensional): Rise, talf

Down-slope shape: Convex, linear

Across-slope shape: Linear

Parent material: Sandy glaciolacustrine deposits

Typical profile

Ap - 0 to 9 inches: fine sand

Bw1 - 9 to 19 inches: fine sand

Bw2 - 19 to 26 inches: sand

Bw3 - 26 to 33 inches: fine sand

Cg1 - 33 to 49 inches: fine sand

Cg2 - 49 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY011MI - Warm Wet Sandy Depression

Hydric soil rating: Yes

Minor Components

Gilford

Percent of map unit: 8 percent

Landform: Depressions on deltas

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F099XY013MI - Wet Lake Plain Flats

Hydric soil rating: Yes

Rousseau

Percent of map unit: 8 percent

Landform: Ridges on deltas

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY004MI - Warm Dry Sandy Ridge

Hydric soil rating: No

WgA—Wasepi loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 6fyy

Elevation: 760 to 960 feet

Mean annual precipitation: 31 to 32 inches

Mean annual air temperature: 47 to 48 degrees F

Frost-free period: 108 to 178 days

Farmland classification: Farmland of local importance

Map Unit Composition

Wasepi and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wasepi

Setting

Landform: Lake plains, outwash plains

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 7 inches: loamy sand

E - 7 to 11 inches: loamy sand

Bt - 11 to 14 inches: sandy loam

Btg - 14 to 24 inches: sandy loam

BCg - 24 to 32 inches: sandy loam

2Cg - 32 to 80 inches: gravelly sand

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 6.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Custom Soil Resource Report

Hydrologic Soil Group: B/D

Ecological site: F098XA019MI - Moist Sandy Drift Plains

Hydric soil rating: No

Minor Components

Gilford

Percent of map unit: 5 percent

Landform: Depressions on outwash plains, drainageways on outwash plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F098XA012MI - Wet Loamy Depressions

Hydric soil rating: Yes

WkA—Wixom-Belleville loamy fine sands, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 692d

Elevation: 610 to 820 feet

Mean annual precipitation: 32 to 32 inches

Mean annual air temperature: 46 to 48 degrees F

Frost-free period: 146 to 188 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Wixom and similar soils: 55 percent

Belleville and similar soils: 35 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wixom

Setting

Landform: Knolls, ridges

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 9 inches: loamy fine sand

Bs1 - 9 to 15 inches: loamy fine sand

Bs2 - 15 to 20 inches: fine sand

E' - 20 to 23 inches: fine sand

Bt1 - 23 to 28 inches: sandy loam

2Bt2 - 28 to 32 inches: silty clay loam

2C1 - 32 to 47 inches: silt loam

2C2 - 47 to 80 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

Description of Belleville

Setting

Landform: Depressions, drainageways
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits over loamy till

Typical profile

A - 0 to 10 inches: loamy fine sand
Bg - 10 to 17 inches: loamy fine sand
BC - 17 to 22 inches: loamy fine sand
2C - 22 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

Minor Components

Corunna

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Convex, linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Metamora

Percent of map unit: 5 percent
Landform: Knolls, ridges
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Wo—Wolcott loam

Map Unit Setting

National map unit symbol: 6934
Elevation: 610 to 980 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Wolcott and similar soils: 91 percent
Minor components: 9 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wolcott

Setting

Landform: Flats, drainageways, depressions
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Loamy till

Typical profile

Ap - 0 to 11 inches: loam
Bg1 - 11 to 22 inches: loam
Bg2 - 22 to 32 inches: loam
C - 32 to 80 inches: loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: High (about 11.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Minor Components

Capac

Percent of map unit: 5 percent
Landform: Knolls
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Wixom

Percent of map unit: 4 percent
Landform: Knolls
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

WpB—Wasepi-Boyer complex, loamy substratum, 0 to 6 percent slopes

Map Unit Setting

National map unit symbol: 6927
Elevation: 580 to 820 feet
Mean annual precipitation: 31 to 32 inches
Mean annual air temperature: 47 to 48 degrees F
Frost-free period: 151 to 204 days
Farmland classification: Farmland of local importance

Map Unit Composition

Wasepi, loamy substratum, and similar soils: 62 percent

Boyer, loamy substratum, and similar soils: 35 percent

Minor components: 3 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wasepi, Loamy Substratum

Setting

Landform: Stream terraces

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy over sandy and gravelly glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 9 inches: sandy loam

Bt - 9 to 14 inches: sandy loam

Btg - 14 to 18 inches: sandy loam

BCg - 18 to 29 inches: loamy sand

2C1 - 29 to 38 inches: stratified sand to coarse sand

2C2 - 38 to 47 inches: gravelly sand

3C3 - 47 to 80 inches: silty clay loam

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Description of Boyer, Loamy Substratum

Setting

Landform: Ridges on stream terraces

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy and/or sandy over sandy and gravelly glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 10 inches: loamy sand
E1 - 10 to 17 inches: loamy sand
E2 - 17 to 22 inches: loamy sand
Bt - 22 to 29 inches: gravelly sandy loam
BC - 29 to 38 inches: loamy sand
2C1 - 38 to 50 inches: sand
3C2 - 50 to 80 inches: silty clay loam

Properties and qualities

Slope: 4 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: B
Ecological site: F099XY004MI - Warm Dry Sandy Ridge
Hydric soil rating: No

Minor Components

Gilford

Percent of map unit: 3 percent
Landform: Depressions on drainageways
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

WrA—Wasepi sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 692h
Elevation: 600 to 930 feet
Mean annual precipitation: 32 to 33 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 146 to 188 days
Farmland classification: Farmland of local importance

Map Unit Composition

Wasepi and similar soils: 91 percent

Minor components: 9 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wasepi

Setting

Landform: Flats, drainageways, glacial drainage channels

Landform position (three-dimensional): Talf, dip, rise

Down-slope shape: Linear

Across-slope shape: Linear, concave, convex

Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

Ap - 0 to 9 inches: sandy loam

Bt1 - 9 to 19 inches: sandy loam

Bt2 - 19 to 24 inches: sandy loam

2C1 - 24 to 42 inches: loamy sand

2C2 - 42 to 80 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (0.60 to 25.00 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3s

Hydrologic Soil Group: A/D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

Minor Components

Boyer

Percent of map unit: 3 percent

Landform: Ridges, knolls

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: F099XY006MI - Cool Dry Sandy Ridge

Hydric soil rating: No

Gilford

Percent of map unit: 3 percent

Landform: Drainageways, depressions

Landform position (three-dimensional): Talf, dip

Custom Soil Resource Report

Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Perrin

Percent of map unit: 3 percent
Landform: Ridges, knolls
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: F099XY005MI - Cool Moist Sandy Depression
Hydric soil rating: No

WsA—Wasepi loamy sand, loamy substratum, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 68ch
Elevation: 580 to 850 feet
Mean annual precipitation: 32 to 35 inches
Mean annual air temperature: 45 to 47 degrees F
Frost-free period: 135 to 184 days
Farmland classification: Farmland of local importance

Map Unit Composition

Wasepi, loamy substratum, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wasepi, Loamy Substratum

Setting

Landform: Ridges on till plains, knolls on till plains, valley trains, outwash plains, flats on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Sandy and loamy over sandy and gravelly glaciofluvial deposits over loamy till

Typical profile

Ap - 0 to 9 inches: loamy sand
E1 - 9 to 13 inches: loamy sand
E2 - 13 to 18 inches: loamy sand
2Bt - 18 to 26 inches: gravelly sandy loam
2C - 26 to 45 inches: stratified gravelly sand to sand
3Cg - 45 to 80 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Custom Soil Resource Report

Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Minor Components

Shebeon

Percent of map unit: 5 percent
Landform: Knolls on till plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY007MI - Lake Plain Flats
Hydric soil rating: No

Corunna

Percent of map unit: 3 percent
Landform: Depressions on till plains, drainageways on till plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY013MI - Wet Lake Plain Flats
Hydric soil rating: Yes

Tobico

Percent of map unit: 2 percent
Landform: Drainageways on till plains, depressions on till plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F099XY012MI - Cool Wet Sandy Depression
Hydric soil rating: Yes

WtA—Wasepi sandy loam, clay subsoil variant, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 6928

Custom Soil Resource Report

Elevation: 570 to 810 feet

Mean annual precipitation: 31 to 33 inches

Mean annual air temperature: 47 to 49 degrees F

Frost-free period: 151 to 204 days

Farmland classification: Farmland of local importance

Map Unit Composition

Wasepi, clay subsoil, and similar soils: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wasepi, Clay Subsoil

Setting

Landform: Ridges on beaches

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Convex

Parent material: Loamy over sandy and gravelly glaciofluvial deposits over clayey glaciolacustrine deposits

Typical profile

Ap - 0 to 8 inches: sandy loam

E - 8 to 11 inches: sandy loam

Bt - 11 to 17 inches: sandy loam

Btg - 17 to 22 inches: sandy loam

BC - 22 to 27 inches: gravelly loamy sand

2C1 - 27 to 38 inches: gravelly sand

3C2 - 38 to 80 inches: clay

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low
(0.01 to 0.06 in/hr)

Depth to water table: About 6 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 35 percent

Available water supply, 0 to 60 inches: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: D

Ecological site: F099XY007MI - Lake Plain Flats

Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- 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. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf