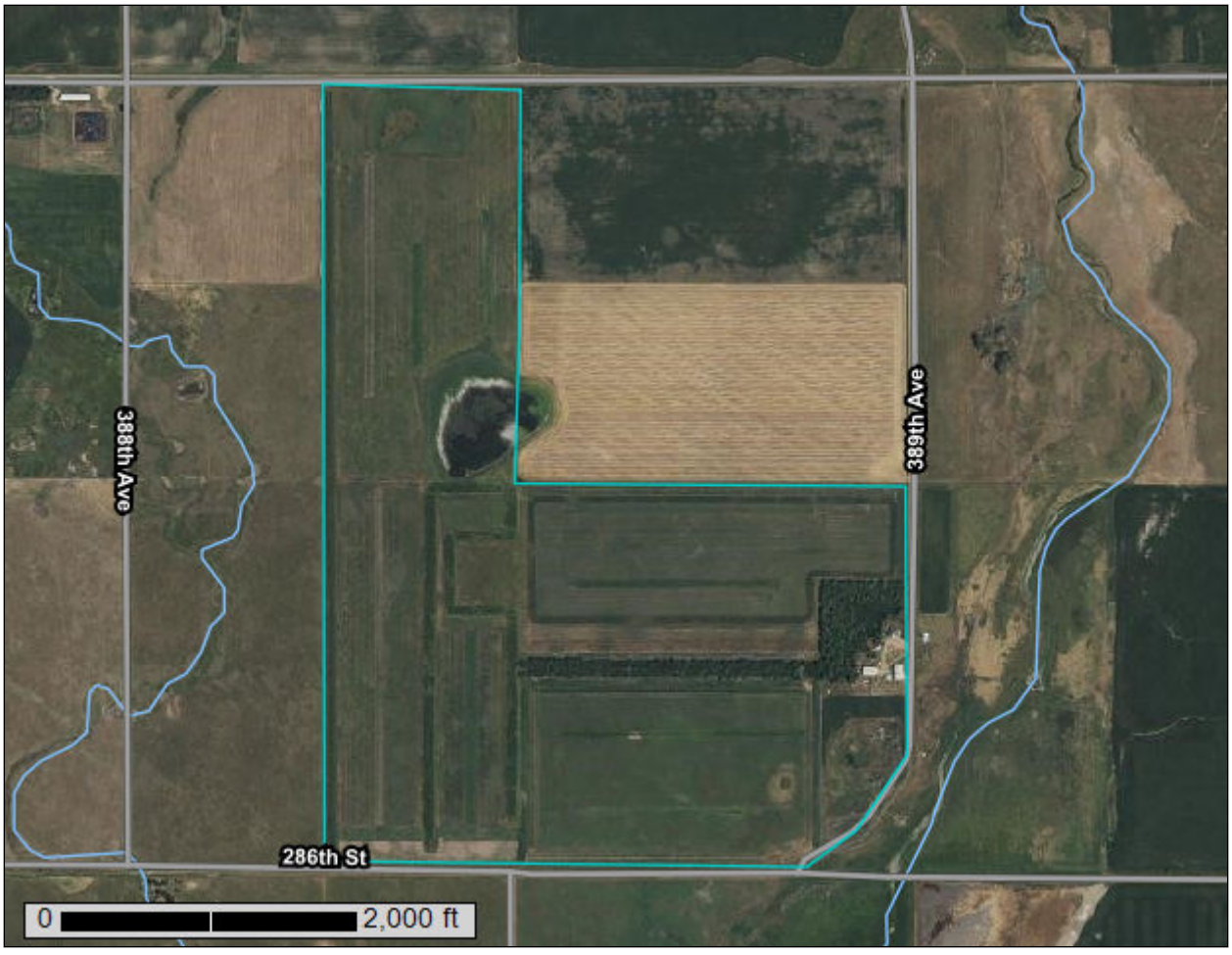
United States Department of Agriculture

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 Charles Mix County, South Dakota



August 9, 2023

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.

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Contents

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

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

Map Scale: 1:9,360 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Charles Mix County, South Dakota
Survey Area Data: Version 30, Sep 8, 2022

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

Date(s) aerial images were photographed: Jun 19, 2022—Sep 27, 2022

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
EeB	Eakin-Ethan complex, 2 to 6 percent slopes	58.4	19.1%
EeC	Eakin-Ethan complex, 6 to 9 percent slopes	28.2	9.2%
EtD	Ethan-Clarno loams, 9 to 15 percent slopes	22.1	7.2%
HgA	Highmore silt loam, 0 to 2 percent slopes	15.8	5.2%
HhB	Highmore silt loam, 2 to 6 percent slopes	124.8	40.8%
On	Mobridge silt loam, 0 to 2 percent slopes	0.5	0.1%
Ot	Onita-Tetonka silt loams	44.8	14.6%
Te	Tetonka silt loam, 0 to 1 percent slopes	11.0	3.6%
Totals for Area of Interest		**305.6**	**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.

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.

Charles Mix County, South Dakota

EeB—Eakin-Ethan complex, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2xhbv
Elevation: 1,150 to 2,230 feet
Mean annual precipitation: 16 to 27 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Eakin and similar soils: 55 percent
Ethan and similar soils: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eakin

Setting

Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Periglacial loess over fine-loamy till

Typical profile

Ap - 0 to 7 inches: silt loam
Bt - 7 to 14 inches: silty clay loam
Bk1 - 14 to 27 inches: silty clay loam
2Bk2 - 27 to 43 inches: clay loam
2C - 43 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R055CY010SD - Loamy
Forage suitability group: Loam (G055CY100SD)
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Description of Ethan

Setting

Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bk - 7 to 33 inches: clay loam
C - 33 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R055CY012SD - Thin Upland
Forage suitability group: Limy Upland (G055CY400SD)
Other vegetative classification: Limy Upland (G055CY400SD)
Hydric soil rating: No

Minor Components

Onita

Percent of map unit: 7 percent
Landform: Swales
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R055CY020SD - Loamy Overflow
Other vegetative classification: Overflow (G055CY500SD)
Hydric soil rating: No

Tetonka, undrained

Percent of map unit: 6 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R055CY004SD - Wet Meadow
Other vegetative classification: Wet (G055CY900SD)
Hydric soil rating: Yes

Walke

Percent of map unit: 4 percent
Landform: Ground moraines
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R055CY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G055CY210SD)
Hydric soil rating: No

Hoven

Percent of map unit: 3 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R055CY019SD - Closed Depression
Other vegetative classification: Not suited (G055CY000SD)
Hydric soil rating: Yes

EeC—Eakin-Ethan complex, 6 to 9 percent slopes

Map Unit Setting

National map unit symbol: cxf9
Elevation: 1,310 to 1,970 feet
Mean annual precipitation: 18 to 25 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 130 to 155 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Eakin and similar soils: 50 percent
Ethan and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eakin

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty drift over loamy till

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 29 inches: silty clay loam
H3 - 29 to 60 inches: clay loam

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R055CY010SD - Loamy
Forage suitability group: Loam (G055CY100SD)
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Description of Ethan

Setting

Landform: Plains
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

H1 - 0 to 6 inches: loam
H2 - 6 to 21 inches: loam
H3 - 21 to 32 inches: clay loam
H4 - 32 to 60 inches: clay loam

Properties and qualities

Slope: 6 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
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: B
Ecological site: R055CY012SD - Thin Upland
Forage suitability group: Limy Upland (G055CY400SD)
Other vegetative classification: Limy Upland (G055CY400SD)
Hydric soil rating: No

Minor Components

Onita
Percent of map unit: 10 percent
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R055CY020SD - Loamy Overflow
Other vegetative classification: Overflow (G055CY500SD)
Hydric soil rating: No

Tetonka
Percent of map unit: 9 percent
Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R055CY004SD - Wet Meadow
Other vegetative classification: Wet (G055CY900SD)
Hydric soil rating: Yes

Hoven
Percent of map unit: 1 percent
Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R055CY019SD - Closed Depression
Other vegetative classification: Not suited (G055CY000SD)
Hydric soil rating: Yes

EtD—Ethan-Clarno loams, 9 to 15 percent slopes

Map Unit Setting
National map unit symbol: cxfd
Elevation: 1,310 to 1,970 feet
Mean annual precipitation: 18 to 25 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 130 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

Ethan and similar soils: 45 percent
Clarno and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ethan

Setting

Landform: Moraines
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

H1 - 0 to 6 inches: loam
H2 - 6 to 21 inches: loam
H3 - 21 to 32 inches: clay loam
H4 - 32 to 60 inches: clay loam

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
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: B
Ecological site: R055CY012SD - Thin Upland
Forage suitability group: Limy Upland (G055CY400SD)
Other vegetative classification: Limy Upland (G055CY400SD)
Hydric soil rating: No

Description of Clarno

Setting

Landform: Moraines
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

H1 - 0 to 7 inches: loam

H2 - 7 to 14 inches: loam
H3 - 14 to 35 inches: loam
H4 - 35 to 60 inches: loam

Properties and qualities

Slope: 9 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
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: R055CY010SD - Loamy
Forage suitability group: Loam (G055CY100SD)
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Minor Components

Eakin

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R055CY010SD - Loamy
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Prosper

Percent of map unit: 5 percent
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R055CY020SD - Loamy Overflow
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Bon

Percent of map unit: 4 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R055CY040SD - Loamy Floodplain
Other vegetative classification: Overflow (G055CY500SD)

Hydric soil rating: No

Chaska

Percent of map unit: 1 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R055CY003SD - Subirrigated
Other vegetative classification: Subirrigated (G055CY700SD)
Hydric soil rating: Yes

HgA—Highmore silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tm8c
Elevation: 1,150 to 2,230 feet
Mean annual precipitation: 16 to 27 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Highmore

Setting

Landform: Plains
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Periglacial loess over loamy till

Typical profile

Ap - 0 to 7 inches: silt loam
Bt - 7 to 19 inches: silty clay loam
Bk - 19 to 38 inches: silty clay loam
C - 38 to 55 inches: silt loam
2C - 55 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: C
Ecological site: R053CY010SD - Loamy
Forage suitability group: Loam (G053CY100SD)
Other vegetative classification: Loam (G053CY100SD)
Hydric soil rating: No

Minor Components

Mobridge

Percent of map unit: 5 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R053CY020SD - Loamy Overflow
Other vegetative classification: Overflow (G053CY500SD)
Hydric soil rating: No

Tetonka, undrained

Percent of map unit: 3 percent
Landform: Closed depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R053CY004SD - Wet Meadow
Other vegetative classification: Wet (G053CY900SD)
Hydric soil rating: Yes

Hoven

Percent of map unit: 2 percent
Landform: Closed depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R053CY019SD - Closed Depression
Other vegetative classification: Not suited (G053CY000SD)
Hydric soil rating: Yes

HhB—Highmore silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2tlbc
Elevation: 1,150 to 2,230 feet
Mean annual precipitation: 16 to 27 inches
Mean annual air temperature: 43 to 52 degrees F

Frost-free period: 120 to 160 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Highmore

Setting

Landform: Plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Periglacial loess over loamy till

Typical profile

Ap - 0 to 7 inches: silt loam
Bt - 7 to 19 inches: silty clay loam
Bk - 19 to 38 inches: silty clay loam
C - 38 to 55 inches: silt loam
2C - 55 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
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: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R053CY010SD - Loamy
Forage suitability group: Loam (G053CY100SD)
Other vegetative classification: Loam (G053CY100SD)
Hydric soil rating: No

Minor Components

Mobridge

Percent of map unit: 6 percent
Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R053CY020SD - Loamy Overflow
Other vegetative classification: Overflow (G053CY500SD)

Hydric soil rating: No

Raber

Percent of map unit: 4 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R053CY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G053CY210SD)
Hydric soil rating: No

Tetonka, undrained

Percent of map unit: 3 percent
Landform: Closed depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R053CY004SD - Wet Meadow
Other vegetative classification: Wet (G053CY900SD)
Hydric soil rating: Yes

Hoven

Percent of map unit: 2 percent
Landform: Closed depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R053CY019SD - Closed Depression
Other vegetative classification: Not suited (G053CY000SD)
Hydric soil rating: Yes

On—Mobridge silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tlcg
Elevation: 1,150 to 2,230 feet
Mean annual precipitation: 16 to 27 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 120 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Mobridge

Setting

Landform: Swales
Down-slope shape: Linear

Across-slope shape: Concave
Parent material: Periglacial loess over fine-loamy till

Typical profile

Ap - 0 to 11 inches: silt loam
Bt - 11 to 28 inches: silty clay loam
Bk - 28 to 45 inches: silty clay loam
C - 45 to 69 inches: silty clay loam
2C - 69 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
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: 20 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
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): 2c
Hydrologic Soil Group: C
Ecological site: R053CY020SD - Loamy Overflow
Forage suitability group: Overflow (G053CY500SD)
Other vegetative classification: Overflow (G053CY500SD)
Hydric soil rating: No

Minor Components

Hoven

Percent of map unit: 6 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R053CY019SD - Closed Depression
Other vegetative classification: Not suited (G053CY000SD)
Hydric soil rating: Yes

Highmore

Percent of map unit: 2 percent
Landform: Ground moraines
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R053CY010SD - Loamy
Other vegetative classification: Loam (G053CY100SD)
Hydric soil rating: No

Tetonka, undrained

Percent of map unit: 2 percent
Landform: Depressions
Down-slope shape: Concave

Across-slope shape: Concave
Ecological site: R053CY004SD - Wet Meadow
Other vegetative classification: Wet (G053CY900SD)
Hydric soil rating: Yes

Ot—Onita-Tetonka silt loams

Map Unit Setting

National map unit symbol: cxgl
Elevation: 1,310 to 1,970 feet
Mean annual precipitation: 18 to 25 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 130 to 155 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Onita and similar soils: 55 percent
Tetonka and similar soils: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Onita

Setting

Landform: Swales
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty drift

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 30 inches: silty clay loam
H3 - 30 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 30 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2c
Hydrologic Soil Group: C
Ecological site: R055CY020SD - Loamy Overflow
Forage suitability group: Overflow (G055CY500SD)
Other vegetative classification: Overflow (G055CY500SD)
Hydric soil rating: No

Description of Tetonka

Setting

Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Clayey alluvium

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 13 inches: silt loam
H3 - 13 to 44 inches: silty clay
H4 - 44 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
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: 10 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 1.0
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: R055CY004SD - Wet Meadow
Forage suitability group: Wet (G055CY900SD)
Other vegetative classification: Wet (G055CY900SD)
Hydric soil rating: Yes

Minor Components

Eakin

Percent of map unit: 7 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear

Ecological site: R055CY010SD - Loamy
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Highmore

Percent of map unit: 7 percent
Landform: Plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R055CY010SD - Loamy
Other vegetative classification: Loam (G055CY100SD)
Hydric soil rating: No

Walke

Percent of map unit: 5 percent
Landform: Plains
Landform position (two-dimensional): Footslope
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R055CY011SD - Clayey
Other vegetative classification: Clayey Subsoil (G055CY210SD)
Hydric soil rating: No

Hoven

Percent of map unit: 1 percent
Landform: Potholes
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R055CY019SD - Closed Depression
Other vegetative classification: Not suited (G055CY000SD)
Hydric soil rating: Yes

Te—Tetonka silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tlcd
Elevation: 1,150 to 2,230 feet
Mean annual precipitation: 16 to 27 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Tetonka, Undrained

Setting

Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Local alluvium over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
E - 8 to 16 inches: silt loam
Bt - 16 to 39 inches: silty clay
Cg1 - 39 to 46 inches: silty clay loam
2Cg2 - 46 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
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 to 18 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: R055CY004SD - Wet Meadow
Forage suitability group: Wet (G055CY900SD)
Other vegetative classification: Wet (G055CY900SD)
Hydric soil rating: Yes

Minor Components

Hoven

Percent of map unit: 3 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R055CY019SD - Closed Depression
Other vegetative classification: Not suited (G053CY000SD)
Hydric soil rating: Yes

Davison

Percent of map unit: 3 percent
Landform: Rims on depressions
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: R055CY006SD - Limy Subirrigated
Other vegetative classification: Subirrigated (G055CY700SD)
Hydric soil rating: No

Crossplain

Percent of map unit: 2 percent
Landform: Drainageways
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R055CY020SD - Loamy Overflow
Other vegetative classification: Subirrigated (G055CY700SD)
Hydric soil rating: No

Worthing, undrained

Percent of map unit: 2 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R055CY001SD - Shallow Marsh
Other vegetative classification: Not suited (G055CY000SD)
Hydric soil rating: Yes

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

National Commodity Crop Productivity Index

AGR - Agriculture

NCCPI - National Commodity Crop Productivity Index

National Commodity Crop Productivity Index is a method of arraying the soils of the United States for non-irrigated commodity crop production based on their inherent soil properties. This version features a separate index for soybeans. In the past, soybeans and corn were considered together. The rating a soil is assigned is the highest one of four basic crop group indices, which are based on the climate where the crop is typically grown. Cooler climates are represented by winter wheat, moderate climates are represented by corn and soybeans, and warmer climates are represented by cotton. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_050734.pdf)

The interpretation is applicable to both heavily populated and sparsely populated areas. Ratings are for soils in their present condition. The present land use is not considered in the ratings.

Ratings are based on properties and qualities to the depth normally observed during soil mapping (approximately 6 feet). Soil, site, and climate properties that influence the growth of crops are major considerations. Soil productivity is influenced by many soil properties. An ideal soil will store adequate amounts of water to nurture the crop between rains. This soil will have a near-neutral pH, will store nutrients, and lack toxic materials. The soil will have no barriers, either physical or chemical, to root growth. Water and gas transmission through the soil will be sufficient to maintain both water and oxygen at sufficient levels in the root zone. The soil will not be saturated with water during the growing season to the point that root growth is inhibited. The soil will not be subject to excessive flooding or ponding during the growing season. Slope is an important consideration because it affects erosion by water, runoff, and the operation of equipment. The climate must provide adequate water and heat to allow the desired crop to mature. A soil that differs from the ideal in any of these features will have lower inherent productivity for a particular crop. The further a soil differs from ideality in any one or all of the factors that determine inherent productivity, the lower its inherent productivity will be.

The ratings are both verbal and numerical. Rating class terms indicate the estimated productivity which is determined by all of the soil, site, and climatic features that affect crop productivity. "High inherent productivity" indicates that the soil, site, and climate have features that are very favorable for crop production. High yields and low risk of crop failure can be expected if a high level of management is employed. "Moderately high inherent productivity" indicates that the soil has features that are generally quite favorable for crop production. Good yields and moderately low risk of crop failure can be expected. "Moderate inherent productivity" indicates that the soil has features that are generally favorable for crop production. Good yields and moderate risk of crop failure can be expected. "Moderately low inherent productivity" indicates that the soil has features that are generally not favorable for crop production. Low yields and moderately high risk of crop failure can be expected. "Low inherent productivity" indicates that the soil has one or more features that are unfavorable for crop production. Low yields and high risk of crop failure can be expected.

Numerical ratings indicate the overall productivity of the soil. The ratings are shown in decimal fractions ranging from 1.00 to 0.01. They indicate gradations between the point at which the combination of soil, site, and climate features has the greatest positive impact on inherent productivity (1.00) and the point at which the soil features are very unfavorable (0.01).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Map Scale: 1:9,360 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Low inherent productivity
- Moderately low inherent productivity
- Moderate inherent productivity
- Moderately high inherent productivity
- High inherent productivity
- Not rated or not available

Soil Rating Lines

- Low inherent productivity
- Moderately low inherent productivity
- Moderate inherent productivity
- Moderately high inherent productivity
- High inherent productivity
- Not rated or not available

Soil Rating Points

- Low inherent productivity
- Moderately low inherent productivity
- Moderate inherent productivity
- Moderately high inherent productivity
- High inherent productivity
- Not rated or not available

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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Charles Mix County, South Dakota
Survey Area Data: Version 30, Sep 8, 2022

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

Date(s) aerial images were photographed: Jun 19, 2022—Sep 27, 2022

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.

Tables—National Commodity Crop Productivity Index

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
EeB	Eakin-Ethan complex, 2 to 6 percent slopes	0.598			58.4	19.1%
EeC	Eakin-Ethan complex, 6 to 9 percent slopes	0.505			28.2	9.2%
EtD	Ethan-Clarno loams, 9 to 15 percent slopes	0.489			22.1	7.2%
HgA	Highmore silt loam, 0 to 2 percent slopes	0.558			15.8	5.2%
HhB	Highmore silt loam, 2 to 6 percent slopes	0.544			124.8	40.8%
On	Mobridge silt loam, 0 to 2 percent slopes	0.597			0.5	0.1%
Ot	Onita-Tetonka silt loams	0.445			44.8	14.6%
Te	Tetonka silt loam, 0 to 1 percent slopes	0.181			11.0	3.6%
Totals for Area of Interest					**305.6**	**100.0%**

Rating	Acres in AOI	Percent of AOI
0.544	124.8	40.8%
0.598	58.4	19.1%
0.445	44.8	14.6%
0.505	28.2	9.2%
0.489	22.1	7.2%
0.558	15.8	5.2%
0.181	11.0	3.6%
0.597	0.5	0.1%
Totals for Area of Interest	**305.6**	**100.0%**

Rating Options—National Commodity Crop Productivity Index

Aggregation Method: Weighted Average

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

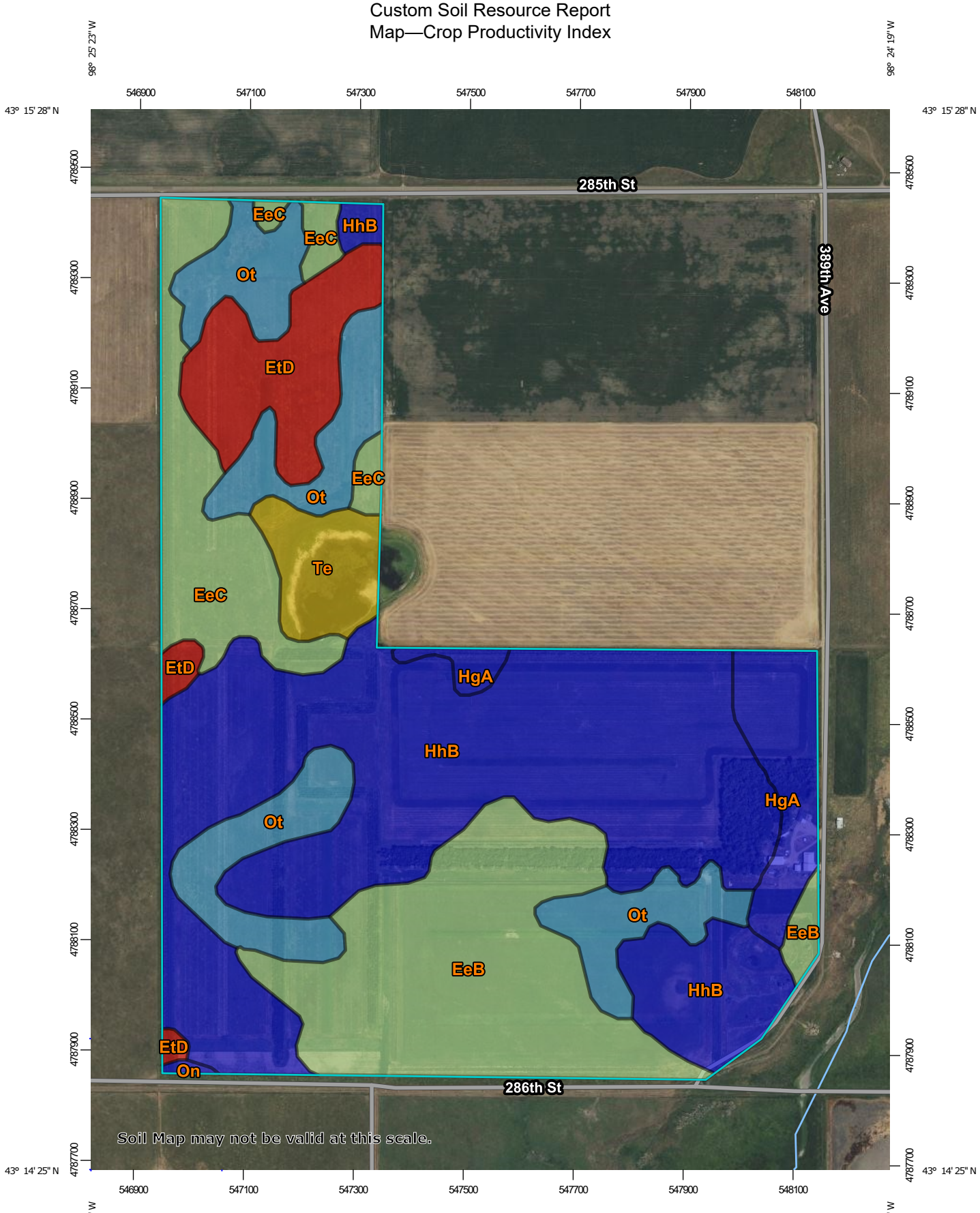
Vegetative Productivity

Vegetative productivity includes estimates of potential vegetative production for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture and rangeland. In the underlying database, some states maintain crop yield data by individual map unit component. Other states maintain the data at the map unit level. Attributes are included for both, although only one or the other is likely to contain data for any given geographic area. For other land uses, productivity data is shown only at the map unit component level. Examples include potential crop yields under irrigated and nonirrigated conditions, forest productivity, forest site index, and total rangeland production under of normal, favorable and unfavorable conditions.

Crop Productivity Index

Crop productivity index ratings provide a relative ranking of soils based on their potential for intensive crop production. An index can be used to rate the potential yield of one soil against that of another over a period of time. Ratings range from 0 to 100. The higher numbers indicate higher production potential. The rating is not crop specific. Minnesota inquiries must use the 'Map Unit Cropland Productivity Report (MN)' soils report from the Soil Reports tab under 'Vegetative Productivity'.

When the soils are rated, the following assumptions are made: a) adequate management, b) natural weather conditions (no irrigation), c) artificial drainage where required, d) no frequent flooding on the lower lying soils, and e) no land leveling or terracing. Even though predicted average yields will change with time, the productivity indices are expected to remain relatively constant in relation to one another over time.



Map Scale: 1:9,360 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 100 200 400 600

Feet
0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 14N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- <= 46
- > 46 and <= 56
- > 56 and <= 75
- > 75 and <= 85
- > 85 and <= 94
- Not rated or not available

Soil Rating Lines
- <= 46
- > 46 and <= 56
- > 56 and <= 75
- > 75 and <= 85
- > 85 and <= 94
- Not rated or not available

Soil Rating Points
- <= 46
- > 46 and <= 56
- > 56 and <= 75
- > 75 and <= 85
- > 85 and <= 94
- Not rated or not available

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 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Charles Mix County, South Dakota
Survey Area Data: Version 30, Sep 8, 2022

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

Date(s) aerial images were photographed: Jun 19, 2022—Sep 27, 2022

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.

Table—Crop Productivity Index

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
EeB	Eakin-Ethan complex, 2 to 6 percent slopes	75	58.4	19.1%
EeC	Eakin-Ethan complex, 6 to 9 percent slopes	67	28.2	9.2%
EtD	Ethan-Clarno loams, 9 to 15 percent slopes	46	22.1	7.2%
HgA	Highmore silt loam, 0 to 2 percent slopes	92	15.8	5.2%
HhB	Highmore silt loam, 2 to 6 percent slopes	91	124.8	40.8%
On	Mobridge silt loam, 0 to 2 percent slopes	94	0.5	0.1%
Ot	Onita-Tetonka silt loams	85	44.8	14.6%
Te	Tetonka silt loam, 0 to 1 percent slopes	56	11.0	3.6%
Totals for Area of Interest			**305.6**	**100.0%**

Rating Options—Crop Productivity Index

Aggregation Method: Weighted Average

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: Yes

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