

Map Unit Description (MN)

Watonwan County, Minnesota

[Data apply to the entire extent of the map unit within the survey area. Map unit and soil properties for a specific parcel of land may vary somewhat and should be determined by onsite investigation]

8B--Sparta loamy sand, 1 to 6 percent slopes

Sparta

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 1 to 6 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .17

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,Bw -- 0 to 38 in	loamy sand	moderately rapid	3.40 to 4.54 in	5.1 to 7.3
C -- 38 to 60 in	sand	rapid	0.88 to 1.54 in	5.1 to 7.8

Darfur

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

8B--Sparta loamy sand, 1 to 6 percent slopes

Litchfield

Extent: 5 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

27A--Dickinson fine sandy loam, 0 to 2 percent slopes

Dickinson

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	fine sandy loam	moderately rapid	1.70 to 2.13 in	5.6 to 7.3
Bw -- 14 to 40 in	fine sandy loam	moderately rapid	3.12 to 3.90 in	5.1 to 6.5
C -- 40 to 60 in	fine sand	rapid	1.57 to 1.97 in	5.1 to 6.5

Darfur

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

27A--Dickinson fine sandy loam, 0 to 2 percent slopes

Linder

Extent: 5 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

27B--Dickinson fine sandy loam, 2 to 6 percent slopes

Dickinson

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 6 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	fine sandy loam	moderately rapid	1.70 to 2.13 in	5.6 to 7.3
Bw -- 14 to 40 in	fine sandy loam	moderately rapid	3.12 to 3.90 in	5.1 to 6.5
C -- 40 to 60 in	fine sand	rapid	1.57 to 1.97 in	5.1 to 6.5

Darfur

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

27B--Dickinson fine sandy loam, 2 to 6 percent slopes

Linder

Extent: 5 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

31F--Storden loam, 20 to 35 percent slopes

Storden

Extent: 90 percent of the unit

Landform(s): hills on moraines

Slope gradient: 20 to 35 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 7e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	7.4 to 8.4
C -- 10 to 60 in	loam	moderate	7.50 to 9.50 in	7.4 to 8.4

Clarion

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

31F--Storden loam, 20 to 35 percent slopes

Delft

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

35--Blue Earth mucky silt loam

Blue Earth

Extent: 90 percent of the unit
Landform(s): depressions on lakebeds (relict)
Slope gradient: 0 to 1 percent
Parent material: fine-silty coprogenic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	mucky silt loam	moderate	1.77 to 2.36 in	7.4 to 8.4
2C -- 10 to 60 in	mucky silt loam	moderate	9.00 to 12.00 in	7.4 to 8.4

Canisteo

Extent: 5 percent of the unit
Landform(s): rims
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: yes
Hydrologic group:
Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

35--Blue Earth mucky silt loam

Muskego

Extent: 5 percent of the unit

Landform(s): lakebeds (relict)

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

41B--Estherville sandy loam, 1 to 6 percent slopes

Estherville

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 1 to 6 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 13 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.6 to 7.3
Bw -- 13 to 18 in	sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
2C -- 18 to 60 in	gravelly coarse sand	rapid	0.83 to 1.67 in	7.4 to 8.4

Biscay

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

41B--Estherville sandy loam, 1 to 6 percent slopes

Linder

Extent: 5 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

69B--Fedji loamy fine sand, 1 to 6 percent slopes

Fedji

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 1 to 6 percent

Parent material: sandy outwash over fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .15

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 12 in	loamy fine sand	rapid	1.18 to 1.54 in	5.6 to 6.5
Bw -- 12 to 35 in	loamy fine sand	rapid	2.09 to 2.56 in	6.1 to 7.3
2Bw -- 35 to 42 in	clay loam	moderate	1.20 to 1.35 in	6.1 to 7.3
2C -- 42 to 60 in	clay loam	moderate	3.01 to 3.37 in	7.4 to 8.4

Webster

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watowan County, Minnesota

69B--Fedji loamy fine sand, 1 to 6 percent slopes

Clarion

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

84--Brownton silty clay loam

Brownton

Extent: 90 percent of the unit

Landform(s): rims on depressions, flats on lake plains

Slope gradient: 0 to 1 percent

Parent material: clayey lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 22 in	silty clay loam	slow	3.97 to 4.85 in	7.4 to 8.4
Bg -- 22 to 38 in	silty clay	slow	2.05 to 2.52 in	7.4 to 8.4
Cg -- 38 to 60 in	silty clay loam	moderate	3.09 to 3.53 in	7.4 to 8.4

Okoboji

Extent: 10 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

86--Canisteo clay loam

Canisteo

Extent: 90 percent of the unit

Landform(s): rims on depressions on moraines, flats on moraines

Slope gradient: 0 to 2 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 22 in	clay loam	moderate	3.97 to 4.85 in	7.4 to 8.4
Bg -- 22 to 36 in	clay loam	moderate	2.07 to 2.62 in	7.4 to 8.4
Cg -- 36 to 60 in	loam	moderate	3.36 to 3.84 in	7.4 to 8.4

Glencoe

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

86--Canisteo clay loam

Clrippin

Extent: 5 percent of the unit

Landform(s): rises

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

101B--Truman silt loam, 1 to 4 percent slopes

Truman

Extent: 90 percent of the unit

Landform(s): hills on lake plains

Slope gradient: 1 to 4 percent

Parent material: fine-silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .37

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	silt loam	moderate	2.83 to 3.26 in	5.6 to 7.3
Bw -- 14 to 34 in	silt loam	moderate	3.54 to 4.13 in	5.6 to 7.8
C -- 34 to 60 in	silt loam	moderate	4.68 to 5.20 in	7.4 to 8.4

Madelia

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

101B--Truman silt loam, 1 to 4 percent slopes

Bold

Extent: 3 percent of the unit

Landform(s): lake plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Spicer

Extent: 2 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

102B--Clarion loam, 1 to 4 percent slopes

Clarion

Extent: 90 percent of the unit

Landform(s): hills on moraines

Slope gradient: 1 to 4 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	loam	moderate	3.23 to 3.55 in	5.6 to 7.3
Bw -- 16 to 32 in	loam	moderate	2.68 to 2.99 in	5.6 to 7.8
C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

Webster

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

102B--Clarion loam, 1 to 4 percent slopes

Storden

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

112--Harps clay loam

Harps

Extent: 90 percent of the unit

Landform(s): rims on depressions on moraines

Slope gradient: 0 to 2 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,Ak -- 0 to 18 in	clay loam	moderate	3.44 to 3.80 in	7.9 to 8.4
Bgk -- 18 to 36 in	clay loam	moderate	3.01 to 3.37 in	7.9 to 8.4
C -- 36 to 60 in	loam	moderate	3.36 to 4.56 in	7.4 to 8.4

Glencoe

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

112--Harps clay loam

Clrippin

Extent: 5 percent of the unit

Landform(s): rises

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

113--Webster clay loam

Webster

Extent: 90 percent of the unit

Landform(s): flats on moraines

Slope gradient: 0 to 2 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 23 in	clay loam	moderate	4.34 to 4.80 in	6.6 to 7.3
Bg -- 23 to 33 in	clay loam	moderate	1.64 to 1.84 in	6.6 to 7.8
Cg -- 33 to 60 in	loam	moderate	3.75 to 5.09 in	7.4 to 8.4

Nicollet

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

113--Webster clay loam

Normania

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

114--Glencoe clay loam

Glencoe

Extent: 90 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 28 in	clay loam	moderate	5.03 to 6.15 in	6.1 to 7.8
Bg -- 28 to 46 in	clay loam	moderate	3.26 to 3.98 in	6.1 to 7.8
Cg -- 46 to 60 in	clay loam	moderate	2.07 to 2.62 in	7.4 to 8.4

Canisteo

Extent: 5 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

114--Glencoe clay loam

Harps

Extent: 3 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Revere

Extent: 2 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

118--Crippin loam

Crippin

Extent: 90 percent of the unit
Landform(s): rises on moraines
Slope gradient: 1 to 3 percent
Parent material: fine-loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	loam	moderate	3.39 to 3.72 in	6.6 to 8.4
Bw -- 17 to 33 in	loam	moderate	2.74 to 3.07 in	7.4 to 8.4
C -- 33 to 60 in	loam	moderate	4.55 to 5.09 in	7.9 to 8.4

Clarion

Extent: 4 percent of the unit
Landform(s): moraines
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: no
Hydrologic group:
Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

118--Crippin loam

Canisteo

Extent: 3 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Swanlake

Extent: 3 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

128A--Grogan silt loam, 0 to 2 percent slopes

Grogan

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: coarse-silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silt loam	moderately rapid	3.29 to 3.59 in	5.6 to 7.3
Bw -- 15 to 36 in	silt loam	moderately rapid	3.55 to 3.96 in	6.1 to 7.8
C -- 36 to 60 in	stratified very fine sandy loam to silt loam	moderately rapid	4.08 to 4.56 in	7.4 to 8.4

Madelia

Extent: 10 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

128B--Grogan silt loam, 2 to 6 percent slopes

Grogan

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 6 percent

Parent material: coarse-silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: A

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silt loam	moderately rapid	3.29 to 3.59 in	5.6 to 7.3
Bw -- 15 to 36 in	silt loam	moderately rapid	3.55 to 3.96 in	6.1 to 7.8
C -- 36 to 60 in	stratified very fine sandy loam to silt loam	moderately rapid	4.08 to 4.56 in	7.4 to 8.4

Madelia

Extent: 10 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

130--Nicollet loam

Nicollet

Extent: 90 percent of the unit
Landform(s): rises on moraines
Slope gradient: 1 to 3 percent
Parent material: fine-loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	loam	moderate	3.21 to 4.16 in	5.6 to 7.3
Bw -- 19 to 34 in	clay loam	moderate	2.24 to 2.84 in	5.6 to 7.8
C -- 34 to 60 in	loam	moderate	3.64 to 4.94 in	7.4 to 8.4

Webster

Extent: 4 percent of the unit
Landform(s): drainageways
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: yes
Hydrologic group:
Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

130--Nicollet loam

Clarion

Extent: 3 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Canisteo

Extent: 3 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

134--Okoboji silty clay loam

Okoboji

Extent: 90 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: clayey alluvium

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 34 in	silty clay loam	moderately slow	7.11 to 7.79 in	6.1 to 7.8
Bg -- 34 to 48 in	silty clay loam	moderately slow	2.55 to 2.83 in	6.6 to 7.8
Cg -- 48 to 60 in	silty clay loam	moderately slow	2.13 to 2.36 in	6.6 to 8.4

Webster

Extent: 4 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

134--Okoboji silty clay loam

Canisteo

Extent: 3 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Spicer

Extent: 3 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

136--Madelia silty clay loam

Madelia

Extent: 90 percent of the unit

Landform(s): flats on lake plains

Slope gradient: 0 to 2 percent

Parent material: fine-silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	silty clay loam	moderate	3.26 to 4.35 in	6.1 to 7.3
Bg -- 18 to 25 in	silty clay loam	moderate	1.13 to 1.56 in	6.6 to 7.8
Cg -- 25 to 60 in	silt loam	moderate	5.54 to 7.62 in	7.4 to 8.4

Okoboji

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

136--Madelia silty clay loam

Kingston

Extent: 5 percent of the unit

Landform(s): lake plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

140--Spicer silty clay loam

Spicer

Extent: 90 percent of the unit

Landform(s): flats on lake plains

Slope gradient: 0 to 2 percent

Parent material: fine-silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	silty clay loam	moderate	3.26 to 4.35 in	7.4 to 8.4
Bg -- 18 to 30 in	silty clay loam	moderate	1.89 to 2.60 in	7.4 to 8.4
Cg -- 30 to 60 in	silt loam	moderate	4.79 to 6.58 in	7.4 to 8.4

Okoboji

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

140--Spicer silty clay loam

Kingston

Extent: 5 percent of the unit

Landform(s): lake plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

160--Fieldon loam

Fieldon

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 1 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	loam	moderate	2.91 to 3.23 in	7.4 to 8.4
Bg -- 16 to 32 in	fine sandy loam	moderate	2.36 to 2.68 in	7.4 to 8.4
Cg -- 32 to 60 in	loamy fine sand	rapid	1.40 to 1.96 in	7.4 to 8.4

Dassel

Extent: 4 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

160--Fieldon loam

Canisteo

Extent: 3 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Webster

Extent: 3 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

178--Granby loamy sand

Granby

Extent: 90 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 2 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .10

Land capability, nonirrigated 4w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 26 in	loamy sand	rapid	2.60 to 3.12 in	5.6 to 7.3
Bg -- 26 to 32 in	loamy sand	rapid	0.30 to 0.71 in	5.6 to 7.8
Cg -- 32 to 60 in	loamy sand	rapid	1.40 to 2.52 in	6.1 to 7.3

Dassel

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

178--Granby loamy sand

Litchfield

Extent: 5 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

181--Litchfield loamy fine sand

Litchfield

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 3 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .10

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 21 in	loamy fine sand	rapid	2.09 to 2.50 in	5.1 to 7.3
Bw -- 21 to 40 in	stratified fine sand to loamy fine sand	moderately rapid	1.35 to 3.09 in	5.1 to 7.3
C -- 40 to 60 in	fine sand	rapid	1.57 to 1.97 in	6.1 to 7.8

Darfur

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

181--Litchfield loamy fine sand

Sparta

Extent: 3 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Dassel

Extent: 2 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

183--Dassel fine sandy loam

Dassel

Extent: 90 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 27 in	fine sandy loam	moderately rapid	4.28 to 5.35 in	5.6 to 7.3
Bg -- 27 to 37 in	sandy loam	moderately rapid	1.23 to 1.74 in	5.6 to 7.3
Cg -- 37 to 60 in	loamy sand	rapid	1.83 to 2.28 in	6.1 to 7.8

Darfur

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

183--Dassel fine sandy loam

Fieldon

Extent: 5 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

197--Kingston silty clay loam

Kingston

Extent: 90 percent of the unit

Landform(s): rises on lake plains

Slope gradient: 1 to 3 percent

Parent material: fine-silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	silty clay loam	moderate	2.91 to 3.87 in	5.6 to 7.3
Bw -- 16 to 22 in	silty clay loam	moderate	0.94 to 1.18 in	5.6 to 7.8
C -- 22 to 60 in	silt loam	moderate	6.05 to 7.56 in	7.4 to 8.4

Truman

Extent: 3 percent of the unit

Landform(s): lake plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

197--Kingston silty clay loam

Madelia

Extent: 3 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Spicer

Extent: 2 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

197--Kingston silty clay loam

Bold

Extent: 2 percent of the unit

Landform(s): lake plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

222B--Lasa loamy fine sand, 1 to 6 percent slopes

Lasa

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 1 to 6 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .20

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	loamy fine sand	moderately rapid	1.81 to 2.17 in	5.6 to 7.3
Bw -- 18 to 60 in	fine sand	moderately rapid	2.92 to 3.76 in	6.1 to 7.3

Darfur

Extent: 10 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

227--Lemond loam

Lemond

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	loam	moderately rapid	3.62 to 3.98 in	7.4 to 8.4
Bg -- 18 to 28 in	sandy loam	moderately rapid	0.98 to 1.28 in	7.4 to 8.4
2Cg -- 28 to 60 in	sand	rapid	1.59 to 2.23 in	7.4 to 8.4

Dassel

Extent: 10 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

229--Waldorf silty clay loam

Waldorf

Extent: 90 percent of the unit

Landform(s): flats on lake plains

Slope gradient: 0 to 1 percent

Parent material: clayey lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 23 in	silty clay loam	moderately slow	4.11 to 5.71 in	6.1 to 7.3
Bg -- 23 to 38 in	silty clay	moderately slow	1.94 to 2.39 in	6.6 to 7.8
Cg -- 38 to 60 in	silty clay loam	moderately slow	4.41 to 4.85 in	7.4 to 8.4

Brownnton

Extent: 4 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

229--Waldorf silty clay loam

Okoboji

Extent: 3 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Kingston

Extent: 3 percent of the unit

Landform(s): lake plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

247--Linder sandy loam

Linder

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	sandy loam	moderate	2.72 to 3.62 in	5.6 to 7.8
Bw -- 18 to 33 in	sandy loam	moderately rapid	2.24 to 2.54 in	6.1 to 7.8
2C -- 33 to 60 in	coarse sand	very rapid	0.54 to 1.07 in	7.4 to 8.4

Biscay

Extent: 4 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

247--Linder sandy loam

Dickinson

Extent: 3 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Estherville

Extent: 3 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

255--Mayer loam

Mayer

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: fine-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	loam	moderate	3.78 to 4.16 in	7.4 to 8.4
Bg -- 19 to 38 in	loam	moderate	3.02 to 3.59 in	7.4 to 8.4
2C -- 38 to 60 in	gravelly coarse sand	rapid	0.44 to 0.88 in	7.4 to 8.4

Dassel

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

255--Mayer loam

Linder

Extent: 5 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

269--Millington clay loam, occasionally flooded

Millington, occasionally flooded

Extent: 90 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: fine-loamy alluvium

Restrictive feature(s): greater than 60 inches

Flooding: occasional

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 16 in	clay loam	moderate	2.74 to 3.71 in	7.4 to 8.4
A2,A3 -- 16 to 38 in	clay loam	moderate	3.68 to 4.33 in	7.4 to 8.4
Cg -- 38 to 60 in	stratified loam to clay loam	moderate	3.09 to 4.41 in	7.4 to 8.4

Fieldon

Extent: 10 percent of the unit

Landform(s): rises

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

281--Darfur fine sandy loam

Darfur

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 1 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 23 in	fine sandy loam	moderate	3.65 to 4.11 in	6.1 to 7.3
Bg -- 23 to 36 in	fine sandy loam	moderately rapid	1.95 to 2.21 in	6.6 to 7.8
Cg -- 36 to 60 in	loamy fine sand	moderately rapid	1.92 to 2.40 in	6.6 to 8.4

Dassel

Extent: 4 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

281--Darfur fine sandy loam

Litchfield

Extent: 3 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Webster

Extent: 3 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

282--Hanska loam

Hanska

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 1 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	loam	moderately rapid	3.62 to 3.98 in	6.1 to 7.8
Bg -- 18 to 30 in	sandy loam	moderately rapid	1.18 to 1.54 in	6.1 to 7.3
2Cg -- 30 to 60 in	sand	rapid	0.90 to 1.50 in	6.6 to 7.8

Dickman

Extent: 10 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

327A--Dickman sandy loam, 0 to 2 percent slopes

Dickman

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	sandy loam	moderately rapid	1.94 to 2.24 in	5.6 to 6.5
Bw -- 15 to 20 in	loamy sand	moderately rapid	0.61 to 0.72 in	5.6 to 7.3
C -- 20 to 60 in	sand	rapid	0.80 to 2.78 in	5.6 to 7.8

Fieldon

Extent: 4 percent of the unit
Landform(s): rims
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: yes
Hydrologic group:
Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

327A--Dickman sandy loam, 0 to 2 percent slopes

Darfur

Extent: 3 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Hanska

Extent: 3 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

327B--Dickman sandy loam, 2 to 6 percent slopes

Dickman

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 to 6 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	sandy loam	moderately rapid	1.94 to 2.24 in	5.6 to 6.5
Bw -- 15 to 20 in	loamy sand	moderately rapid	0.61 to 0.72 in	5.6 to 7.3
C -- 20 to 60 in	sand	rapid	0.80 to 2.78 in	5.6 to 7.8

Fieldon

Extent: 4 percent of the unit
Landform(s): rims
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: yes
Hydrologic group:
Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

327B--Dickman sandy loam, 2 to 6 percent slopes

Darfur

Extent: 3 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Hanska

Extent: 3 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

336--Delft loam

Delft

Extent: 90 percent of the unit

Landform(s): drainageways on moraines

Slope gradient: 1 to 3 percent

Parent material: fine-loamy colluvium

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 29 in	loam	moderate	5.24 to 5.83 in	5.6 to 7.8
Bg -- 29 to 47 in	clay loam	moderate	3.37 to 3.90 in	5.6 to 7.8
Cg -- 47 to 60 in	clay loam	moderate	1.95 to 2.47 in	7.4 to 8.4

Clarion

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

336--Delft loam

Clrippin

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

362--Millington clay loam, frequently flooded

Millington, frequently flooded

Extent: 90 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: fine-loamy alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 5w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 36 in	clay loam	moderate	6.09 to 8.24 in	7.4 to 8.4
C -- 36 to 60 in	sr to sandy loam to silty clay loam	moderate	3.36 to 4.80 in	7.4 to 8.4

Fieldon

Extent: 10 percent of the unit

Landform(s): rises

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

392--Biscay loam

Biscay

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: fine-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 22 in	loam	moderate	4.41 to 4.85 in	6.1 to 7.8
Bg1 -- 22 to 32 in	loam	moderate	1.67 to 1.87 in	6.6 to 7.8
Bg2 -- 32 to 36 in	sandy loam	moderately rapid	0.43 to 0.67 in	6.6 to 7.8
2Cg -- 36 to 60 in	stratified gravelly coarse sand to gravelly loamy sand	rapid	0.48 to 0.96 in	7.4 to 8.4

Dassel

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

392--Biscay loam

Linder

Extent: 5 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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421B--Ves loam, 1 to 4 percent slopes

Ves

Extent: 90 percent of the unit

Landform(s): hills on moraines

Slope gradient: 1 to 4 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	loam	moderate	2.41 to 3.12 in	6.1 to 7.3
Bw1 -- 14 to 18 in	loam	moderate	0.59 to 0.75 in	6.1 to 7.3
Bw2 -- 18 to 25 in	loam	moderate	1.06 to 1.35 in	7.4 to 8.4
C -- 25 to 60 in	loam	moderate	5.20 to 6.58 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

423--Seaforth loam

Seaforth

Extent: 90 percent of the unit

Landform(s): rises on moraines

Slope gradient: 1 to 3 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 12 in	loam	moderate	2.01 to 2.83 in	7.4 to 8.4
Bw -- 12 to 24 in	loam	moderate	1.83 to 2.32 in	7.4 to 8.4
C -- 24 to 60 in	loam	moderate	6.09 to 6.81 in	7.4 to 8.4

Storden

Extent: 4 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

423--Seaforth loam

Webster

Extent: 3 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Ves

Extent: 3 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

487--Hoopeston fine sandy loam

Hoopeston

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	fine sandy loam	moderately rapid	2.17 to 2.72 in	5.1 to 6.5
Bw -- 18 to 32 in	fine sandy loam	moderately rapid	1.65 to 2.34 in	5.1 to 7.8
C -- 32 to 60 in	fine sand	rapid	1.40 to 2.80 in	4.5 to 8.4

Darfur

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

487--Hoopeston fine sandy loam

Dickinson

Extent: 5 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

517--Shandep clay loam

Shandep

Extent: 90 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: fine-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 22 in	clay loam	moderate	4.41 to 5.07 in	6.1 to 7.3
Bg -- 22 to 40 in	clay loam	moderate	3.08 to 3.62 in	6.1 to 7.3
2Cg -- 40 to 60 in	loamy sand	rapid	0.39 to 0.79 in	6.1 to 8.4

Darfur

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

517--Shandep clay loam

Fieldon

Extent: 5 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

539--Palms muck

Palms

<p><i>Extent:</i> 90 percent of the unit</p> <p><i>Landform(s):</i> depressions on moraines</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> muck herbaceous organic material over fine-loamy till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> frequent</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 1</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated</i> 3w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> B/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa -- 0 to 31 in	muck	moderately rapid	10.89 to 14.93 in	
2A -- 31 to 49 in	silty clay loam	moderate	3.19 to 3.90 in	
2C -- 49 to 60 in	silty clay loam	moderate	1.65 to 2.09 in	

Canisteo

<p><i>Extent:</i> 5 percent of the unit</p> <p><i>Landform(s):</i> rims</p> <p><i>Slope gradient:</i></p> <p><i>Parent material:</i></p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i></p> <p><i>Ponding:</i></p> <p><i>Drainage class:</i></p>	<p><i>Soil loss tolerance (T factor):</i></p> <p><i>Wind erodibility group (WEG):</i></p> <p><i>Wind erodibility index (WEI):</i></p> <p><i>Kw factor (surface layer)</i></p> <p><i>Land capability, nonirrigated</i></p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i></p> <p><i>Potential for frost action:</i></p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

539--Palms muck

Glencoe

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

562--Knoke silty clay loam

Knoke

Extent: 90 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: clayey glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderately slow	2.07 to 2.26 in	7.4 to 8.4
Bg -- 10 to 50 in	silty clay loam	moderately slow	8.43 to 9.24 in	7.4 to 8.4
Cg -- 50 to 60 in	silty clay loam	moderately slow	1.77 to 1.97 in	7.4 to 8.4

Canisteo

Extent: 5 percent of the unit
Landform(s): rims
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: yes
Hydrologic group:
Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

562--Knoke silty clay loam

Harps

Extent: 5 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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575--Nishna silty clay loam

Nishna

Extent: 90 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: clayey alluvium

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	silty clay loam	slow	1.18 to 1.38 in	7.4 to 8.4
Cg -- 10 to 60 in	silty clay loam	slow	5.50 to 6.50 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

639B--Ridgeport sandy loam, 1 to 6 percent slopes

Ridgeport

Extent: 90 percent of the unit

Landform(s): outwash plains

Slope gradient: 1 to 6 percent

Parent material: coarse-loamy outwash over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	sandy loam	moderately rapid	1.61 to 1.94 in	5.6 to 7.3
Bw -- 16 to 33 in	sandy loam	moderately rapid	1.19 to 1.52 in	5.6 to 7.3
C -- 33 to 60 in	gravelly coarse sand	very rapid	0.27 to 0.80 in	7.4 to 8.4

Biscay

Extent: 4 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

639B--Ridgeport sandy loam, 1 to 6 percent slopes

Linder

Extent: 3 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Mayer

Extent: 3 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

654--Revere clay loam

Revere

Extent: 90 percent of the unit

Landform(s): flats on moraines

Slope gradient: 0 to 2 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 22 in	clay loam	moderate	3.97 to 4.85 in	7.4 to 8.4
Bg -- 22 to 36 in	clay loam	moderate	2.07 to 2.62 in	7.4 to 8.4
Cg -- 36 to 60 in	loam	moderate	3.36 to 3.84 in	7.4 to 8.4

Glencoe

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

654--Revere clay loam

Okoboji

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

668--Corwith silt loam

Corwith

Extent: 90 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 3 percent
Parent material: coarse-silty lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	silt loam	moderate	3.39 to 3.72 in	7.4 to 8.4
Bw -- 17 to 27 in	silt loam	moderate	1.97 to 2.17 in	7.9 to 8.4
C -- 27 to 60 in	loamy very fine sand	moderate	5.62 to 6.28 in	7.9 to 8.4

Spicer

Extent: 5 percent of the unit
Landform(s): rims
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: yes
Hydrologic group:
Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

668--Corwith silt loam

Madelia

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

789B2--Grogan-Lasa variant complex, 2 to 6 percent slopes, eroded

Grogan, eroded

Extent: 50 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 6 percent

Parent material: coarse-silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: A

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loam	moderately rapid	2.17 to 2.36 in	5.6 to 7.3
Bw -- 10 to 36 in	silt loam	moderately rapid	4.42 to 4.94 in	6.1 to 7.8
C -- 36 to 60 in	stratified fine sand to loamy fine sand	moderately rapid	4.08 to 4.56 in	7.4 to 8.4

Lasa, variant, eroded

Extent: 40 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 6 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .20

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	loamy fine sand	moderately rapid	0.98 to 1.18 in	7.4 to 8.4
Bw -- 10 to 60 in	stratified fine sand to loamy fine sand	moderately rapid	3.50 to 4.50 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

789B2--Grogan-Lasa variant complex, 2 to 6 percent slopes, eroded

Clarion

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Madelia

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

789C2--Lasa variant-Grogan complex, 6 to 12 percent slopes, eroded

Lasa, variant, eroded

Extent: 50 percent of the unit

Landform(s): outwash plains

Slope gradient: 6 to 12 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .20

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loamy fine sand	moderately rapid	0.98 to 1.18 in	7.4 to 8.4
Bw -- 10 to 34 in	loamy fine sand	moderately rapid	1.68 to 2.16 in	7.4 to 8.4
C -- 34 to 60 in	stratified fine sand to loamy fine sand	rapid	1.56 to 2.08 in	7.4 to 8.4

Grogan, eroded

Extent: 35 percent of the unit

Landform(s): outwash plains

Slope gradient: 6 to 12 percent

Parent material: coarse-silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	loam	moderately rapid	2.17 to 2.36 in	5.6 to 7.3
Bw -- 10 to 32 in	fine sandy loam	moderately rapid	3.75 to 4.19 in	6.1 to 7.8
C -- 32 to 60 in	very fine sandy loam	moderately rapid	4.75 to 5.31 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

789C2--Lasa variant-Grogan complex, 6 to 12 percent slopes, eroded

Clarion

Extent: 10 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Madelia

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

790B--Grogan-Dickinson complex, 1 to 4 percent slopes

Grogan

Extent: 50 percent of the unit

Landform(s): outwash plains

Slope gradient: 1 to 4 percent

Parent material: coarse-silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: A

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	loam	moderately rapid	3.98 to 4.35 in	5.6 to 7.3
Bw -- 18 to 35 in	silt loam	moderately rapid	2.88 to 3.22 in	6.1 to 7.8
C -- 35 to 60 in	very fine sandy loam	moderately rapid	4.22 to 4.71 in	7.4 to 8.4

Dickinson

Extent: 40 percent of the unit

Landform(s): outwash plains

Slope gradient: 1 to 4 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	fine sandy loam	moderately rapid	1.70 to 2.13 in	5.6 to 7.3
Bw -- 14 to 36 in	fine sandy loam	moderately rapid	2.60 to 3.25 in	5.1 to 6.5
C -- 36 to 60 in	fine sand	rapid	1.92 to 2.40 in	5.1 to 6.5

Map Unit Description (MN)

Watonwan County, Minnesota

790B--Grogan-Dickinson complex, 1 to 4 percent slopes

Fieldon

Extent: 5 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Darfur

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

887B--Clarion-Swanlake loams, 1 to 4 percent slopes

Clarion

Extent: 50 percent of the unit

Landform(s): hills on moraines

Slope gradient: 1 to 4 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	loam	moderate	2.99 to 3.29 in	5.6 to 7.3
Bw -- 15 to 30 in	loam	moderate	2.54 to 2.84 in	5.6 to 7.8
C -- 30 to 60 in	loam	moderate	5.09 to 5.69 in	7.4 to 8.4

Swanlake

Extent: 35 percent of the unit

Landform(s): hills on moraines

Slope gradient: 2 to 4 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 2.17 in	7.4 to 8.4
C -- 9 to 60 in	loam	moderate	8.63 to 9.65 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

887B--Clarion-Swanlake loams, 1 to 4 percent slopes

Webster

Extent: 10 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Canisteo

Extent: 5 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

909C2--Bold-Truman silt loams, 5 to 12 percent slopes, eroded

Bold, eroded

Extent: 50 percent of the unit

Landform(s): lake plains

Slope gradient: 5 to 12 percent

Parent material: coarse-silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .49

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	silt loam	moderate	1.24 to 1.42 in	7.4 to 8.4
C -- 6 to 60 in	silt loam	moderate	10.79 to 12.94 in	7.4 to 8.4

Truman, eroded

Extent: 40 percent of the unit

Landform(s): lake plains

Slope gradient: 5 to 12 percent

Parent material: fine-silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .37

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	silt loam	moderate	1.81 to 2.08 in	5.6 to 7.3
Bw -- 9 to 20 in	silt loam	moderate	1.98 to 2.31 in	5.6 to 7.8
C -- 20 to 60 in	silt loam	moderate	7.16 to 7.95 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

909C2--Bold-Truman silt loams, 5 to 12 percent slopes, eroded

Kingston

Extent: 5 percent of the unit

Landform(s): lake plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Madelia

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

920B2--Clarion-Estherville complex, 2 to 6 percent slopes, eroded

Clarion, eroded

Extent: 45 percent of the unit

Landform(s): hills on moraines

Slope gradient: 2 to 6 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	5.6 to 7.3
Bw -- 9 to 28 in	loam	moderate	3.21 to 3.59 in	5.6 to 7.8
C -- 28 to 60 in	loam	moderate	5.42 to 6.06 in	7.4 to 8.4

Estherville, eroded

Extent: 35 percent of the unit

Landform(s): hills on moraines

Slope gradient: 2 to 6 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.63 in	5.6 to 7.3
Bw -- 9 to 20 in	sandy loam	moderately rapid	1.43 to 1.98 in	5.6 to 7.3
2C -- 20 to 60 in	gravelly coarse sand	rapid	0.80 to 1.59 in	6.6 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

920B2--Clarion-Estherville complex, 2 to 6 percent slopes, eroded

Delft

Extent: 10 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Webster

Extent: 10 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

920C2--Clarion-Estherville complex, 6 to 12 percent slopes, eroded

Clarion, eroded

Extent: 50 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	loam	moderate	3.23 to 3.55 in	5.6 to 7.3
Bw -- 16 to 32 in	loam	moderate	2.68 to 2.99 in	5.6 to 7.8
C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

Estherville, eroded

Extent: 35 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.42 in	5.6 to 7.3
Bw -- 8 to 21 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.6 to 7.3
2C -- 21 to 60 in	coarse sand	rapid	0.78 to 1.56 in	6.6 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

920C2--Clarion-Estherville complex, 6 to 12 percent slopes, eroded

Delft

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Webster

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

920C2--Clarion-Estherville complex, 6 to 12 percent slopes, eroded

Nicollet

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

921B2--Clarion-Storden loams, 3 to 6 percent slopes, eroded

Clarion, eroded

Extent: 65 percent of the unit

Landform(s): hills on moraines

Slope gradient: 3 to 6 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.6 to 7.3
Bw -- 10 to 21 in	loam	moderate	1.87 to 2.09 in	5.6 to 7.8
C -- 21 to 60 in	loam	moderate	6.63 to 7.41 in	7.4 to 8.4

Storden, eroded

Extent: 25 percent of the unit

Landform(s): hills on moraines

Slope gradient: 4 to 6 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
Bk -- 8 to 36 in	loam	moderate	4.19 to 5.31 in	7.4 to 8.4
Ck -- 36 to 60 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

921B2--Clarion-Storden loams, 3 to 6 percent slopes, eroded

Delft

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Webster

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

921C2--Clarion-Storden loams, 6 to 12 percent slopes, eroded

Clarion, eroded

Extent: 65 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	loam	moderate	3.23 to 3.55 in	5.6 to 7.3
Bw -- 16 to 32 in	loam	moderate	2.68 to 2.99 in	5.6 to 7.8
C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

Storden, eroded

Extent: 25 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
Bk -- 8 to 37 in	loam	moderate	4.37 to 5.54 in	7.4 to 8.4
Ck -- 37 to 60 in	loam	moderate	3.43 to 4.34 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

921C2--Clarion-Storden loams, 6 to 12 percent slopes, eroded

Nicollet

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Delft

Extent: 5 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

929--Fieldon-Canisteo complex

Fieldon

Extent: 50 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 1 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 12 in	loam	moderate	2.13 to 2.36 in	7.4 to 8.4
Bg -- 12 to 38 in	fine sandy loam	moderate	3.90 to 4.42 in	7.4 to 8.4
Cg -- 38 to 60 in	loamy fine sand	rapid	1.10 to 1.54 in	7.4 to 8.4

Canisteo

Extent: 35 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 1 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	clay loam	moderate	1.77 to 2.17 in	7.4 to 8.4
A,AB -- 10 to 20 in	loam	moderate	1.54 to 1.94 in	7.4 to 8.4
Bg -- 20 to 32 in	loam	moderate	1.42 to 2.13 in	7.4 to 8.4
Cg -- 32 to 60 in	loam	moderate	3.91 to 4.47 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

954B2--Ves-Storden loams, 3 to 6 percent slopes, eroded

Ves, eroded

Extent: 50 percent of the unit

Landform(s): hills on moraines

Slope gradient: 3 to 6 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.34 to 1.73 in	6.1 to 7.8
Bw -- 8 to 30 in	loam	moderate	3.31 to 4.19 in	6.6 to 7.8
Bk -- 30 to 36 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
C -- 36 to 60 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4

Storden, eroded

Extent: 30 percent of the unit

Landform(s): hills on moraines

Slope gradient: 4 to 6 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	7.4 to 8.4
Bk -- 7 to 34 in	loam	moderate	4.02 to 5.09 in	7.4 to 8.4
C -- 34 to 60 in	loam	moderate	3.90 to 4.94 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

954C2--Storden-Ves loams, 6 to 15 percent slopes, eroded

Storden, eroded

Extent: 45 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 15 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	7.4 to 8.4
Bk -- 7 to 36 in	loam	moderate	4.31 to 5.46 in	7.4 to 8.4
C -- 36 to 60 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4

Ves, eroded

Extent: 40 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 15 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.34 to 1.73 in	6.1 to 7.8
Bw -- 8 to 30 in	loam	moderate	3.31 to 4.19 in	6.6 to 7.8
Bk -- 30 to 36 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
C -- 36 to 60 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

954C2--Storden-Ves loams, 6 to 15 percent slopes, eroded

Delft

Extent: 10 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Webster

Extent: 3 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

954C2--Storden-Ves loams, 6 to 15 percent slopes, eroded

Normania

Extent: 2 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

956--Canisteo-Glencoe clay loams

Canisteo

Extent: 60 percent of the unit

Landform(s): rims on depressions on moraines, flats on moraines

Slope gradient: 0 to 2 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 22 in	clay loam	moderate	3.97 to 4.85 in	7.4 to 8.4
Bk -- 22 to 28 in	clay loam	moderate	0.89 to 1.12 in	7.4 to 8.4
C -- 28 to 60 in	loam	moderate	4.46 to 5.10 in	7.4 to 8.4

Glencoe

Extent: 20 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 26 in	clay loam	moderate	4.68 to 5.72 in	6.1 to 7.8
Bg -- 26 to 38 in	clay loam	moderate	2.13 to 2.60 in	6.1 to 7.8
Cg -- 38 to 60 in	loam	moderate	3.31 to 4.19 in	6.6 to 7.8

Map Unit Description (MN)

Watonwan County, Minnesota

956--Canisteo-Glencoe clay loams

Clrippin

Extent: 10 percent of the unit

Landform(s): rises

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Nicollet

Extent: 10 percent of the unit

Landform(s): rises

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

960D2--Storden-Clarion loams, 12 to 18 percent slopes, eroded

Storden, eroded

Extent: 50 percent of the unit

Landform(s): hills on moraines

Slope gradient: 12 to 18 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	7.4 to 8.4
Bk -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	7.4 to 8.4
C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Clarion, eroded

Extent: 35 percent of the unit

Landform(s): hills on moraines

Slope gradient: 12 to 18 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	loam	moderate	3.23 to 3.55 in	5.6 to 7.3
Bw -- 16 to 32 in	loam	moderate	2.68 to 2.99 in	5.6 to 7.8
C -- 32 to 60 in	loam	moderate	4.75 to 5.31 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

960D2--Storden-Clarion loams, 12 to 18 percent slopes, eroded

Delft

Extent: 10 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Nicollet

Extent: 5 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

999B2--Ves-Estherville complex, 2 to 8 percent slopes, eroded

Ves, eroded

Extent: 60 percent of the unit

Landform(s): hills on moraines

Slope gradient: 4 to 8 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.54 to 1.99 in	6.1 to 7.8
Bw -- 9 to 26 in	loam	moderate	2.54 to 3.22 in	6.6 to 7.8
Bk -- 26 to 32 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
C -- 32 to 60 in	loam	moderate	4.19 to 5.31 in	7.4 to 8.4

Estherville, eroded

Extent: 30 percent of the unit

Landform(s): hills on moraines

Slope gradient: 2 to 8 percent

Parent material: coarse-loamy outwash over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.63 in	5.6 to 7.3
Bw -- 9 to 20 in	sandy loam	moderately rapid	1.43 to 1.98 in	5.6 to 7.3
2C -- 20 to 60 in	gravelly coarse sand	rapid	0.80 to 1.59 in	6.6 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

999B2--Ves-Estherville complex, 2 to 8 percent slopes, eroded

Delft

Extent: 4 percent of the unit

Landform(s): drainageways

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Normania

Extent: 2 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

999B2--Ves-Estherville complex, 2 to 8 percent slopes, eroded

Storden

Extent: 2 percent of the unit

Landform(s): moraines

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Linder

Extent: 2 percent of the unit

Landform(s): outwash plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

1016--Udorthents, loamy

Udorthents, loamy

Extent: 100 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 12 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
C1 -- 0 to 60 in	loam	moderately rapid	4.79 to 8.38 in	6.6 to 8.4
C2 -- 60 to 80 in	loam	moderately rapid	1.61 to 2.81 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

1030--Udorthents-Pits, complex

Udorthents

Extent: 50 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 45 percent

Parent material: sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group:

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Pits

Extent: 50 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 45 percent

Parent material: sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

1055--Palms-Glencoe complex, ponded

Palms, ponded

Extent: 50 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: muck herbaceous organic material over fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated 8w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa -- 0 to 30 in	muck	moderately rapid	10.47 to 13.46 in	
2A -- 30 to 60 in	clay loam	moderate	4.19 to 6.58 in	

Glencoe, ponded

Extent: 35 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .24

Land capability, nonirrigated 8w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 30 in	clay loam	moderate	5.39 to 6.58 in	6.1 to 7.8
Bg -- 30 to 60 in	clay loam	moderate	4.49 to 5.69 in	7.4 to 7.8

Map Unit Description (MN)

Watonwan County, Minnesota

1055--Palms-Glencoe complex, ponded

Canisteo

Extent: 10 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Essexville

Extent: 5 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

1356--Water, miscellaneous

Water, miscellaneous

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Map Unit Description (MN)

Watonwan County, Minnesota

1833--Coland clay loam, occasionally flooded

Coland, occasionally flooded

Extent: 90 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: fine-loamy alluvium

Restrictive feature(s): greater than 60 inches

Flooding: occasional

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	clay loam	moderate	1.97 to 2.17 in	6.1 to 7.3
A -- 10 to 60 in	clay loam	moderate	10.00 to 11.00 in	6.1 to 7.3

Fieldon

Extent: 10 percent of the unit

Landform(s): rises

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

1834--Coland clay loam, frequently flooded

Coland, frequently flooded

Extent: 90 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: fine-loamy alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 5w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 10 in	clay loam	moderate	1.97 to 2.17 in	6.1 to 7.3
A2 -- 10 to 36 in	clay loam	moderate	5.20 to 5.72 in	6.1 to 7.3
Bg -- 36 to 60 in	clay loam	moderately rapid	3.12 to 4.08 in	6.1 to 7.8

Fieldon

Extent: 10 percent of the unit

Landform(s): rises

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

1907--Lakefield silty clay loam

Lakefield

Extent: 90 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 3 percent
Parent material: fine-silty lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 18 in silty clay loam	moderate	3.26 to 4.35 in	7.4 to 8.4
Bk,C --	18 to 60 in silt loam	moderate	6.68 to 8.35 in	7.4 to 8.4

Spicer

Extent: 10 percent of the unit
Landform(s): rims
Slope gradient:
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil: yes
Hydrologic group:
Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Watonwan County, Minnesota

1931--Essexville sandy loam

Essexville

Extent: 90 percent of the unit

Landform(s): flats on moraines

Slope gradient: 0 to 2 percent

Parent material: sandy outwash over fine-loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.42 in	7.4 to 8.4
Bw -- 8 to 22 in	sand	rapid	0.57 to 1.70 in	7.4 to 8.4
2C -- 22 to 60 in	clay loam	moderately slow	4.54 to 7.56 in	7.4 to 8.4

Glencoe

Extent: 5 percent of the unit

Landform(s): depressions

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

1931--Essexville sandy loam

Canisteo

Extent: 3 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Lemond

Extent: 2 percent of the unit

Landform(s): rims

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

1981--Hanlon-Kalmarville complex, 0 to 4 percent slopes

Hanlon, frequently flooded

Extent: 50 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 4 percent

Parent material: coarse-loamy alluvium over sandy alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated 5w

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	fine sandy loam	moderately rapid	2.39 to 2.69 in	6.1 to 7.3
Bw -- 15 to 40 in	fine sandy loam	moderately rapid	4.03 to 4.54 in	6.1 to 7.3
C -- 40 to 60 in	loamy sand	moderately rapid	2.36 to 3.74 in	5.6 to 7.8

Kalmarville, frequently flooded

Extent: 30 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 4 percent

Parent material: coarse-loamy alluvium over sandy alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 5w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 12 in	loam	moderately rapid	1.54 to 2.13 in	6.6 to 7.8
A2 -- 12 to 55 in	fine sandy loam	moderately rapid	5.63 to 7.80 in	6.6 to 7.8
2C -- 55 to 60 in	loamy sand	rapid	0.28 to 0.43 in	6.6 to 7.8

Map Unit Description (MN)

Watonwan County, Minnesota

1981--Hanlon-Kalmarville complex, 0 to 4 percent slopes

Millington

Extent: 10 percent of the unit

Landform(s): flood plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Coland

Extent: 10 percent of the unit

Landform(s): flood plains

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

L13A--Klossner muck, depressional, 0 to 1 percent slopes

Klossner, drained

Extent: 65 to 85 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: herbaceous organic material over loamy glaciofluvial deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Op -- 0 to 10 in	muck	moderately rapid	3.44 to 4.72 in	
Oa -- 10 to 26 in	muck	moderately rapid	5.65 to 7.75 in	
2A1 -- 26 to 36 in	mucky silty clay loam	moderate	2.17 to 2.56 in	
2A2 -- 36 to 48 in	silty clay loam	moderate	2.20 to 2.69 in	
2Cg -- 48 to 80 in	loam	moderate	4.78 to 6.06 in	

Map Unit Description (MN)

Watonwan County, Minnesota

L83A--Webster clay loam, 0 to 2 percent slopes

Webster

Extent: 50 to 85 percent of the unit

Landform(s): flats on moraines, swales on moraines

Slope gradient: 0 to 2 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	clay loam	moderate	3.59 to 3.97 in	6.6 to 7.3
Bg -- 19 to 26 in	clay loam	moderate	1.13 to 1.28 in	6.6 to 7.8
BCg,Cg -- 26 to 60 in	loam	moderate	5.08 to 6.43 in	7.4 to 8.4

L84A--Glencoe clay loam, depressional, 0 to 1 percent slopes

Glencoe, depressional

Extent: 75 to 100 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 24 in	clay loam	moderate	4.32 to 5.28 in	6.1 to 7.8
ABg -- 24 to 35 in	clay loam	moderate	1.98 to 2.43 in	6.1 to 7.8
Bg -- 35 to 48 in	loam	moderate	1.95 to 2.47 in	6.6 to 7.8
Cg -- 48 to 60 in	loam	moderate	1.77 to 2.24 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

L85A--Nicollet clay loam, 1 to 3 percent slopes

Nicollet

Extent: 70 to 95 percent of the unit

Landform(s): flats on moraines, rises on moraines

Slope gradient: 1 to 3 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	clay loam	moderate	2.88 to 3.72 in	5.6 to 7.3
Bw,Bg -- 17 to 33 in	clay loam	moderate	2.42 to 3.07 in	5.6 to 7.3
Bg -- 33 to 36 in	clay loam	moderate	0.41 to 0.52 in	7.4 to 8.4
Cg -- 36 to 60 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

L107A--Canisteo-Glencoe, depressional complex, 0 to 2 percent slopes

Canisteo

Extent: 30 to 70 percent of the unit

Landform(s): rims on moraines

Slope gradient: 0 to 2 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	clay loam	moderate	3.26 to 3.98 in	7.4 to 8.4
Bkg -- 18 to 39 in	loam	moderate	2.50 to 3.76 in	7.4 to 8.4
Cg -- 39 to 80 in	loam	moderate	6.14 to 7.78 in	7.4 to 8.4

Glencoe, depressional

Extent: 15 to 55 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	clay loam	moderate	1.77 to 2.17 in	6.1 to 7.8
A,ABg -- 10 to 35 in	clay loam	moderate	4.54 to 5.54 in	6.1 to 7.8
Bg -- 35 to 48 in	loam	moderate	1.95 to 2.47 in	6.6 to 7.8
Cg -- 48 to 60 in	loam	moderate	1.77 to 2.24 in	7.4 to 8.4

Map Unit Description (MN)

Watowwan County, Minnesota

L163A--Okoboji silty clay loam, depressional, 0 to 1 percent slopes

Okoboji, depressional

Extent: 70 to 95 percent of the unit

Landform(s): depressions on lake plains, depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: lacustrine sediments over till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 26 in	silty clay loam	moderately slow	5.46 to 5.98 in	6.1 to 7.8
Bg -- 26 to 42 in	silty clay	moderately slow	2.91 to 3.23 in	6.6 to 7.8
Cg -- 42 to 60 in	silty clay loam	moderately slow	3.19 to 3.54 in	6.6 to 8.4

Map Unit Description (MN)

Watonwan County, Minnesota

L201A--Normania loam, 0 to 3 percent slopes

Normania

Extent: 75 to 90 percent of the unit

Landform(s): flats on moraines, rises on moraines

Slope gradient: 0 to 3 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A,AB -- 0 to 17 in	loam	moderate	3.39 to 3.72 in	6.1 to 7.3
Bw -- 17 to 26 in	loam	moderate	1.36 to 1.72 in	6.6 to 7.3
Bk -- 26 to 50 in	loam	moderate	3.60 to 4.56 in	7.4 to 8.4
Cg -- 50 to 60 in	loam	moderate	1.48 to 1.87 in	7.4 to 8.4

W--Water

Water

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: unranked

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Map Unit Description (MN)

Watonwan County, Minnesota

This report provides a semitabular listing of some soil and site properties and interpretations that are valuable in communicating the concept of a map unit. The report also provides easy access to the commonly used conservation planning information in one place. The major soil components in each map unit are displayed. Minor components may be displayed if they are included in the database and are selected at the time the report is generated.