Map Unit Description (MN)

Brown 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, 2 to 6 percent slopes

Sparta

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: 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loamy sand	moderately rapid	1.35 to 1.80 in	5.1 to 7.3
Bw -- 15 to 38 in	sand	rapid	1.16 to 2.56 in	5.1 to 7.3
C -- 38 to 60 in	sand	rapid	0.87 to 1.52 in	5.1 to 7.8

Hanska

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*

8B--Sparta loamy sand, 2 to 6 percent slopes

Dickman

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*

8C--Sparta loamy sand, 6 to 15 percent slopes

Sparta

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 15 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 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loamy sand	moderately rapid	1.35 to 1.80 in	5.1 to 7.3
Bw -- 15 to 38 in	sand	rapid	1.16 to 2.56 in	5.1 to 7.3
C -- 38 to 60 in	sand	rapid	0.87 to 1.52 in	5.1 to 7.8

Terril

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

27A--Dickinson 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): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	sandy loam	moderately rapid	2.17 to 2.72 in	5.6 to 7.3
Bw -- 18 to 24 in	sandy loam	moderately rapid	0.71 to 0.89 in	5.1 to 6.5
BC -- 24 to 40 in	loamy sand	rapid	1.29 to 1.61 in	5.1 to 6.5
C -- 40 to 60 in	sand	rapid	0.39 to 0.79 in	5.6 to 7.3

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

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

Hoopeston

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*

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

Dickinson

Extent: 85 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): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	sandy loam	moderately rapid	2.17 to 2.72 in	5.6 to 7.3
Bw -- 18 to 24 in	sandy loam	moderately rapid	0.71 to 0.89 in	5.1 to 6.5
BC -- 24 to 40 in	loamy sand	rapid	1.29 to 1.61 in	5.1 to 6.5
C -- 40 to 60 in	sand	rapid	0.39 to 0.79 in	5.6 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

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

Hoopeston

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*

31E--Storden loam, 18 to 24 percent slopes

Storden

Extent: 80 percent of the unit
Landform(s): moraines
Slope gradient: 18 to 24 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 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
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: 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

31E--Storden loam, 18 to 24 percent slopes

Terril

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*

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*

31F--Storden loam, 24 to 60 percent slopes

Storden

Extent: 80 percent of the unit
Landform(s): moraines
Slope gradient: 24 to 60 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
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: 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

31F--Storden loam, 24 to 60 percent slopes

Terril

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*

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*

35--Blue Earth mucky silt loam

Blue Earth

Extent: 85 percent of the unit
Landform(s): relict lakebeds on moraines
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): 6
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

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

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

35--Blue Earth mucky silt loam

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

41A--Estherville sandy loam, 0 to 2 percent slopes

Estherville

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 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): 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.98 in	5.6 to 7.3
Bw -- 11 to 16 in	sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
2C -- 16 to 60 in	gravelly coarse sand	rapid	0.87 to 1.75 in	6.6 to 8.4

Hanska

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

41A--Estherville sandy loam, 0 to 2 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Lemond

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

41B--Estherville sandy loam, 2 to 6 percent slopes

Estherville

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 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): 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.98 in	5.6 to 7.3
Bw -- 11 to 16 in	sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
2C -- 16 to 60 in	gravelly coarse sand	rapid	0.87 to 1.75 in	6.6 to 8.4

Hanska

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

41B--Estherville sandy loam, 2 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Lemond

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

85--Calco silty clay loam

Calco, occasionally flooded

Extent: 90 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: fine-silty 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) .32
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 42 in	silty clay loam	moderate	8.85 to 9.69 in	7.4 to 8.4
Cg -- 42 to 60 in	silty clay loam	moderate	3.72 to 4.07 in	7.4 to 8.4

Oshawa

Extent: 5 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

85--Calco silty clay loam

Nishna

Extent: 5 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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

86--Canisteo clay loam

Canisteo

Extent: 80 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	clay loam	moderate	3.26 to 3.98 in	7.4 to 8.4
Bg -- 18 to 42 in	clay loam	moderate	3.60 to 4.56 in	7.4 to 8.4
Cg -- 42 to 60 in	loam	moderate	2.48 to 2.83 in	7.4 to 8.4

Seaforth

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*

86--Canisteo clay loam

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*

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*

86--Canisteo 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*

94B--Terril loam, 2 to 6 percent slopes

Terril

Extent: 90 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 6 percent
Parent material: fine-loamy colluvium
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) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 35 in	loam	moderate	7.01 to 7.71 in	6.1 to 7.3
Bw -- 35 to 48 in	loam	moderate	2.21 to 2.47 in	6.1 to 7.3
C -- 48 to 60 in	loam	moderate	1.89 to 2.13 in	6.1 to 7.8

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

94B--Terril loam, 2 to 6 percent slopes

Delft

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

94C--Terril loam, 6 to 12 percent slopes

Terril

Extent: 85 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 percent
Parent material: fine-loamy colluvium
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 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 35 in	loam	moderate	7.01 to 7.71 in	6.1 to 7.3
Bw -- 35 to 48 in	loam	moderate	2.21 to 2.47 in	6.1 to 7.3
C -- 48 to 60 in	loam	moderate	1.89 to 2.13 in	6.1 to 7.8

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*

94C--Terril loam, 6 to 12 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*

Ves

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*

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

Clarion

Extent: 85 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loam	moderate	2.99 to 3.29 in	5.6 to 7.3
Bw -- 15 to 34 in	loam	moderate	3.21 to 3.59 in	5.6 to 7.8
C -- 34 to 60 in	loam	moderate	4.42 to 4.94 in	7.4 to 8.4

Storden

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

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

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

102B2--Clarion loam, 3 to 6 percent slopes, eroded

Clarion, eroded

Extent: 80 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loam	moderate	2.99 to 3.29 in	5.6 to 7.3
Bw -- 15 to 34 in	loam	moderate	3.21 to 3.59 in	5.6 to 7.8
C -- 34 to 60 in	loam	moderate	4.42 to 4.94 in	7.4 to 8.4

Storden

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

102B2--Clarion loam, 3 to 6 percent slopes, eroded

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Terril

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*

113--Webster clay loam

Webster

Extent: 85 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 20 in	clay loam	moderate	3.81 to 4.22 in	6.6 to 7.3
Bg -- 20 to 42 in	clay loam	moderate	3.53 to 3.97 in	6.6 to 7.8
Cg -- 42 to 60 in	loam	moderate	2.48 to 3.37 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

113--Webster clay loam

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*

Seaforth

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*

114--Glencoe clay loam

Glencoe

Extent: 85 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: fine-loamy 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): 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	clay loam	moderate	1.77 to 2.17 in	6.1 to 7.8
A -- 10 to 38 in	silty clay loam	moderate	5.03 to 6.15 in	6.1 to 7.8
Bg -- 38 to 51 in	clay loam	moderate	2.01 to 2.54 in	6.6 to 7.8
Cg -- 51 to 60 in	clay loam	moderate	1.30 to 1.65 in	6.6 to 7.8

Palms

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

114--Glencoe clay loam

Blue Earth

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*

128B--Grogan silt loam, 1 to 6 percent slopes

Grogan

Extent: 80 percent of the unit
Landform(s): stream terraces
Slope gradient: 1 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	silt loam	moderately rapid	3.12 to 3.40 in	5.6 to 7.3
Bw -- 14 to 26 in	silt loam	moderately rapid	2.01 to 2.24 in	6.1 to 7.8
C -- 26 to 60 in	stratified loamy very fine sand to silt loam	moderately rapid	5.76 to 6.43 in	7.4 to 8.4

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

128B--Grogan silt loam, 1 to 6 percent slopes

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

130--Nicollet clay loam

Nicollet

Extent: 85 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) .15
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 17 in	clay loam	moderate	2.88 to 3.72 in	5.6 to 7.3
Bw -- 17 to 36 in	clay loam	moderate	2.83 to 3.59 in	5.6 to 7.8
C -- 36 to 60 in	clay loam	moderate	3.36 to 4.56 in	7.4 to 8.4

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*

130--Nicollet clay loam

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Canisteo

Extent: 5 percent of the unit
Landform(s): flats
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*

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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .32
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 19 in	silty clay loam	moderate	3.40 to 4.54 in	6.1 to 7.3
Bg -- 19 to 28 in	silt loam	moderate	1.45 to 1.99 in	6.6 to 7.8
Cg -- 28 to 60 in	silt loam	moderate	5.10 to 7.02 in	7.4 to 8.4

Lemond

Extent: 5 percent of the unit
Landform(s): flats
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*

136--Madelia silty clay loam

Tilfer

Extent: 5 percent of the unit
Landform(s): flats
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*

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 23 in	silty clay loam	moderate	4.11 to 5.48 in	7.4 to 8.4
Bg -- 23 to 45 in	silt loam	moderate	3.53 to 4.85 in	7.4 to 8.4
Cg -- 45 to 60 in	silt loam	moderate	2.39 to 3.29 in	7.4 to 8.4

Lemond

Extent: 10 percent of the unit
Landform(s): flats
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*

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	loam	moderately rapid	3.62 to 3.98 in	7.4 to 8.4
Bg -- 18 to 29 in	sandy loam	moderately rapid	1.10 to 1.43 in	7.4 to 8.4
2Cg -- 29 to 60 in	sand	rapid	1.54 to 2.15 in	7.4 to 8.4

Hanska

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*

227--Lemond loam

Dickman

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*

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 and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well 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: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	sandy loam	moderate	1.95 to 2.60 in	5.6 to 7.8
Bw -- 13 to 21 in	sandy loam	moderately rapid	1.18 to 1.34 in	6.1 to 7.8
2C -- 21 to 60 in	gravelly sand	very rapid	0.78 to 1.56 in	7.4 to 8.4

Estherville

Extent: 4 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*

247--Linder sandy loam

Hanska

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*

Lemond

Extent: 3 percent of the unit
Landform(s): flats
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*

269--Millington clay loam

Millington, occasionally flooded

Extent: 85 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 38 in	clay loam	moderate	6.43 to 8.69 in	7.4 to 8.4
Cg -- 38 to 60 in	loam	moderate	3.09 to 4.41 in	7.4 to 8.4

Oshawa

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

269--Millington clay loam

Spillville

Extent: 5 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

281--Darfur loam

Darfur

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): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 19 in	loam	moderate	3.78 to 4.16 in	6.1 to 7.3
Bg -- 19 to 35 in	fine sandy loam	moderately rapid	2.42 to 2.74 in	6.6 to 7.8
Cg -- 35 to 60 in	loamy very fine sand	rapid	1.98 to 2.48 in	6.6 to 8.4

Hoopeston

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

282--Hanska sandy loam

Hanska

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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .10
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 16 in	sandy loam	moderately rapid	2.42 to 2.91 in	6.1 to 7.8
Bg -- 16 to 25 in	sandy loam	moderately rapid	0.91 to 1.18 in	6.1 to 7.3
2Cg -- 25 to 60 in	sand	rapid	1.04 to 1.73 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

313--Spillville loam

Spillville, 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: moderately 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 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 54 in	loam	moderate	10.25 to 11.33 in	5.6 to 7.3
C -- 54 to 60 in	sandy loam	moderately rapid	0.89 to 1.06 in	5.6 to 7.3

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

317--Oshawa silty clay loam

Oshawa, frequently flooded

Extent: 80 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: fine-loamy alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
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 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 35 in	silty clay loam	moderately slow	6.31 to 7.71 in	7.4 to 7.8
Cg -- 35 to 60 in	loam	moderately slow	4.22 to 4.71 in	7.4 to 7.8

Calco

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

317--Oshawa silty clay loam

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

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

Dickman

Extent: 90 percent of the unit
Landform(s): hills 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: somewhat excessively drained

Soil loss tolerance (T factor): 2
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.65 in	5.6 to 6.5
Bw -- 11 to 19 in	sandy loam	moderately rapid	0.94 to 1.10 in	5.6 to 7.3
C -- 19 to 60 in	sand	rapid	0.82 to 2.87 in	5.6 to 7.8

Hanska

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

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

Dickman

Extent: 90 percent of the unit
Landform(s): hills on 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: somewhat excessively drained

Soil loss tolerance (T factor): 2
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.65 in	5.6 to 6.5
Bw -- 11 to 19 in	sandy loam	moderately rapid	0.94 to 1.10 in	5.6 to 7.3
C -- 19 to 60 in	sand	rapid	0.82 to 2.87 in	5.6 to 7.8

Hanska

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*

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

Lemond

Extent: 5 percent of the unit
Landform(s): flats
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*

336--Delft clay 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .20
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 48 in	clay loam	moderately slow	8.65 to 9.61 in	5.6 to 7.8
Cg -- 48 to 60 in	clay loam	moderate	1.77 to 2.24 in	7.4 to 8.4

Terril

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

386--Okoboji muck

Okoboji

Extent: 85 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: mucky fine-silty alluvium over fine-silty alluvium
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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer)
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Bg -- 10 to 52 in	silty clay loam	moderately slow	7.58 to 8.43 in	6.6 to 7.8
Cg -- 52 to 60 in	silty clay loam	moderately slow	1.42 to 1.57 in	6.6 to 8.4

Blue Earth

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

386--Okoboji muck

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

421B--Ves loam, 1 to 4 percent slopes

Ves

Extent: 85 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) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	loam	moderate	2.21 to 2.86 in	6.1 to 7.3
Bw -- 13 to 24 in	loam	moderate	1.65 to 2.09 in	6.1 to 7.3
C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Webster

Extent: 15 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*

421B2--Ves loam, 3 to 6 percent slopes, eroded

Ves, eroded

Extent: 80 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) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	loam	moderate	2.21 to 2.86 in	6.1 to 7.8
Bw -- 13 to 24 in	loam	moderate	1.65 to 2.09 in	6.6 to 7.8
C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

421B2--Ves loam, 3 to 6 percent slopes, eroded

Terril

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

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: 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 2s
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 11 in	loam	moderate	1.87 to 2.65 in	7.4 to 8.4
Bk -- 11 to 26 in	loam	moderate	2.24 to 2.84 in	7.4 to 8.4
C -- 26 to 60 in	loam	moderate	5.76 to 6.43 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

423--Seaforth loam

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

463--Minneiska sandy loam

Minneiska, occasionally flooded

Extent: 90 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: coarse-loamy outwash over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: occasional
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) .20
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.48 to 1.77 in	7.4 to 8.4
C -- 10 to 60 in	loamy sand	rapid	6.50 to 9.00 in	7.4 to 8.4

Oshawa

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

487--Hoopeston sandy loam

Hoopeston

Extent: 85 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 3 percent
Parent material: coarse-loamy outwash over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well 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
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	sandy loam	moderately rapid	1.80 to 2.24 in	5.1 to 6.5
Bw -- 15 to 24 in	fine sandy loam	moderately rapid	1.09 to 1.54 in	5.1 to 7.8
C -- 24 to 60 in	loamy fine sand	rapid	1.79 to 3.58 in	4.5 to 8.4

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

487--Hoopeston 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*

495--Zumbro loamy sand

Zumbro, rarely flooded

Extent: 90 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 4 percent
Parent material: sandy alluvium
Restrictive feature(s): greater than 60 inches
Flooding: rare
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) .20
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loamy sand	rapid	0.98 to 1.18 in	5.6 to 7.8
A -- 10 to 37 in	loamy sand	rapid	2.72 to 3.26 in	5.6 to 7.8
Bw -- 37 to 53 in	loamy sand	rapid	0.97 to 1.78 in	6.1 to 7.8
C -- 53 to 60 in	coarse sand	rapid	0.13 to 0.47 in	6.1 to 7.8

Minneiska

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

499--Hanska loam, depressional

Hanska, depressional

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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 30 in	loam	moderately rapid	5.98 to 6.58 in	6.1 to 7.3
Bg -- 30 to 37 in	sandy loam	moderately rapid	0.71 to 0.92 in	6.1 to 7.3
2Cg -- 37 to 60 in	sand	rapid	1.14 to 1.60 in	6.6 to 7.8

Blue Earth

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

518--Kalmarville sandy loam

Kalmarville, frequently flooded

Extent: 90 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: coarse-loamy alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very 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: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 15 in	sandy loam	moderately rapid	1.94 to 2.69 in	6.6 to 7.8
C -- 15 to 60 in	loamy sand	moderately rapid	5.83 to 8.08 in	6.6 to 7.8

Coland

Extent: 5 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

518--Kalmarville sandy loam

Millington

Extent: 5 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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

574--Du Page loam

Du Page, 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: moderately 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 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 60 in	loam	moderate	13.17 to 14.36 in	6.6 to 8.4

Minneiska

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*

574--Du Page loam

Nishna

Extent: 5 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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

575--Nishna silty clay

Nishna, occasionally flooded

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: occasional
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 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 39 in	silty clay	slow	4.68 to 5.46 in	7.4 to 8.4
C -- 39 to 60 in	silty clay	slow	2.30 to 2.71 in	7.4 to 8.4

Du Page

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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

603--Hanlon sandy loam

Hanlon, occasionally flooded

Extent: 90 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: coarse-loamy alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
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) .20
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.57 to 1.77 in	6.1 to 7.3
A -- 10 to 44 in	sandy loam	moderately rapid	5.48 to 6.17 in	6.1 to 7.3
Bw -- 44 to 57 in	sandy loam	moderately rapid	1.43 to 1.69 in	5.6 to 7.3
C -- 57 to 60 in	sandy loam	moderately rapid	0.33 to 0.52 in	5.6 to 7.8

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

611B--Hawick coarse sandy loam, 2 to 6 percent slopes

Hawick

Extent: 90 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 2 to 6 percent
Parent material: sandy and gravelly 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
AP -- 0 to 9 in	coarse sandy loam	moderately rapid	1.18 to 1.36 in	6.1 to 7.8
Bw -- 9 to 16 in	gravelly coarse sand	rapid	0.21 to 0.71 in	6.1 to 7.8
C -- 16 to 60 in	gravelly coarse sand	very rapid	0.87 to 2.62 in	7.4 to 8.4

Linder

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

611C--Hawick coarse sandy loam, 6 to 15 percent slopes

Hawick

Extent: 90 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 6 to 15 percent
Parent material: sandy and gravelly 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	coarse sandy loam	moderately rapid	1.18 to 1.36 in	6.1 to 7.8
Bw -- 9 to 16 in	gravelly coarse sand	rapid	0.21 to 0.71 in	6.1 to 7.8
C -- 16 to 60 in	gravelly coarse sand	very rapid	0.87 to 2.62 in	7.4 to 8.4

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*

611C--Hawick coarse sandy loam, 6 to 15 percent slopes

Terril

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*

639--Ridgeport sandy loam

Ridgeport

Extent: 90 percent of the unit
Landform(s): stream terraces
Slope gradient: 0 to 2 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 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 12 in	sandy loam	moderately rapid	1.18 to 1.42 in	5.6 to 7.3
Bw -- 12 to 27 in	sandy loam	moderately rapid	1.05 to 1.35 in	5.6 to 7.3
2C -- 27 to 60 in	gravelly sand	very rapid	0.33 to 0.99 in	7.4 to 8.4

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*

639--Ridgeport sandy loam

Hanska

Extent: 5 percent of the unit
Landform(s): flats
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*

820B--Dickman-Clarion complex, 2 to 6 percent slopes

Dickman

Extent: 50 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): 2
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.65 in	5.6 to 6.5
Bw -- 11 to 17 in	sandy loam	moderately rapid	0.71 to 0.83 in	5.6 to 7.3
C -- 17 to 60 in	sand	rapid	0.86 to 3.00 in	5.6 to 7.8

Clarion

Extent: 40 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): 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	loam	moderate	2.60 to 2.86 in	5.6 to 7.3
Bw -- 13 to 28 in	loam	moderate	2.54 to 2.84 in	5.6 to 7.8
C -- 28 to 60 in	loam	moderate	5.42 to 6.06 in	7.4 to 8.4

820B--Dickman-Clarion complex, 2 to 6 percent slopes

Nicollet

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Terril

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

820B--Dickman-Clarion complex, 2 to 6 percent slopes

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

919--Lemond-Canisteo complex

Lemond

Extent: 60 percent of the unit
Landform(s): flats on moraines
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loam	moderately rapid	2.99 to 3.29 in	7.4 to 8.4
Bg -- 15 to 27 in	loamy sand	moderately rapid	1.18 to 1.54 in	7.4 to 8.4
2Cg -- 27 to 60 in	sand	rapid	1.65 to 2.31 in	7.4 to 8.4

Canisteo

Extent: 35 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 16 in	clay loam	moderate	2.91 to 3.55 in	7.4 to 8.4
Bg -- 16 to 35 in	clay loam	moderate	2.27 to 3.40 in	7.4 to 8.4
Cg -- 35 to 60 in	loam	moderate	3.47 to 3.97 in	7.4 to 8.4

919--Lemond-Canisteo complex

Hanska

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*

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

920B--Clarion-Estherville-Storden complex, 2 to 6 percent slopes

Clarion

Extent: 50 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): 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.6 to 7.3
Bw -- 10 to 23 in	loam	moderate	2.21 to 2.47 in	5.6 to 7.8
C -- 23 to 60 in	loam	moderate	6.29 to 7.03 in	7.4 to 8.4

Estherville

Extent: 25 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 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): 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.77 in	5.6 to 7.3
Bw -- 10 to 15 in	sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
2C -- 15 to 60 in	gravelly coarse sand	rapid	0.90 to 1.80 in	6.6 to 8.4

920B--Clarion-Estherville-Storden complex, 2 to 6 percent slopes

Storden

Extent: 15 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 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

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*

920B--Clarion-Estherville-Storden complex, 2 to 6 percent slopes

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

920C--Clarion-Estherville-Storden complex, 6 to 12 percent slopes

Clarion

Extent: 40 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 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.6 to 7.3
Bw -- 10 to 23 in	loam	moderate	2.21 to 2.47 in	5.6 to 7.3
C -- 23 to 60 in	loam	moderate	6.29 to 7.03 in	7.4 to 8.4

Estherville

Extent: 25 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 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): 2
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.77 in	5.6 to 7.3
Bw -- 10 to 15 in	sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
2C -- 15 to 60 in	gravelly coarse sand	rapid	0.90 to 1.80 in	6.6 to 8.4

920C--Clarion-Estherville-Storden complex, 6 to 12 percent slopes

Storden

Extent: 20 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 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

Terril

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*

920C--Clarion-Estherville-Storden complex, 6 to 12 percent slopes

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*

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*

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

Clarion, eroded

Extent: 60 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.6 to 7.3
Bw -- 10 to 25 in	loam	moderate	2.61 to 2.92 in	5.6 to 7.8
C -- 25 to 60 in	loam	moderate	5.89 to 6.58 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 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

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

Terril

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*

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*

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

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

921C2--Clarion-Storden loams, 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 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.6 to 7.3
Bw -- 10 to 25 in	loam	moderate	2.61 to 2.92 in	5.6 to 7.3
C -- 25 to 60 in	loam	moderate	5.89 to 6.58 in	7.4 to 8.4

Storden, eroded

Extent: 35 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 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

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

Terril

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*

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*

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

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

923E--Copaston-Rock outcrop complex, 0 to 40 percent slopes

Copaston

Extent: 60 percent of the unit
Landform(s): stream terraces
Slope gradient: 0 to 25 percent
Parent material: loamy till
Restrictive feature(s): lithic bedrock at 12 to 20 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 1
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 16 in	loam	moderate	3.23 to 3.55 in	5.6 to 7.3
2R -- 16 to 20 in	unweathered bedrock	moderate		

Rock outcrop

Extent: 25 percent of the unit
Landform(s): stream terraces
Slope gradient: 0 to 40 percent
Parent material:
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:
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

923E--Copaston-Rock outcrop complex, 0 to 40 percent slopes

Ves

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Tilfer

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*

929--Fieldon-Canisteo complex

Fieldon

Extent: 50 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) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 20 in	loam	moderate	3.61 to 4.02 in	7.4 to 8.4
Bg -- 20 to 31 in	fine sandy loam	moderate	1.65 to 1.87 in	7.4 to 8.4
Cg -- 31 to 60 in	loamy fine sand	rapid	1.44 to 2.01 in	7.4 to 8.4

Canisteo

Extent: 35 percent of the unit
Landform(s): flats on outwash plains
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 17 in	clay loam	moderate	3.05 to 3.72 in	7.4 to 8.4
Bg -- 17 to 28 in	clay loam	moderate	1.32 to 1.98 in	7.4 to 8.4
Cg -- 28 to 60 in	clay loam	moderate	4.46 to 5.10 in	7.4 to 8.4

929--Fieldon-Canisteo complex

Lemond

Extent: 5 percent of the unit
Landform(s): flats
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*

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*

929--Fieldon-Canisteo complex

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:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

946--Dickman-Nicollet complex

Dickman

Extent: 45 percent of the unit
Landform(s): hills on moraines
Slope gradient: 0 to 3 percent
Parent material: coarse-loamy outwash over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.84 to 2.13 in	5.6 to 6.5
Bw -- 14 to 18 in	sandy loam	moderately rapid	0.39 to 0.51 in	5.6 to 7.3
C -- 18 to 60 in	sand	rapid	0.83 to 2.92 in	5.6 to 7.8

Nicollet

Extent: 40 percent of the unit
Landform(s): hills 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) .20
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 16 in	loam	moderate	2.74 to 3.55 in	5.6 to 7.3
Bw -- 16 to 29 in	loam	moderate	1.95 to 2.47 in	5.6 to 7.8
C -- 29 to 60 in	loam	moderate	4.30 to 5.83 in	7.4 to 8.4

954B2--Ves-Storden loams, 2 to 6 percent slopes, eroded

Ves, eroded

Extent: 65 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 5 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) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.67 to 2.17 in	6.1 to 7.3
Bw -- 10 to 19 in	loam	moderate	1.36 to 1.72 in	6.1 to 7.3
C -- 19 to 60 in	loam	moderate	6.14 to 7.78 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
C -- 8 to 60 in	loam	moderate	7.80 to 9.87 in	7.4 to 8.4

954B2--Ves-Storden loams, 2 to 6 percent slopes, eroded

Webster

Extent: 7 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*

Terril

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

954C2--Ves-Storden loams, 6 to 12 percent slopes, eroded

Ves, eroded

Extent: 45 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) .20
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.67 to 2.17 in	6.1 to 7.8
Bw -- 10 to 19 in	loam	moderate	1.36 to 1.72 in	6.6 to 7.8
C -- 19 to 60 in	loam	moderate	6.14 to 7.78 in	7.4 to 8.4

Storden, eroded

Extent: 40 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
C -- 8 to 60 in	loam	moderate	7.80 to 9.87 in	7.4 to 8.4

954C2--Ves-Storden loams, 6 to 12 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Terril

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*

954D2--Storden-Ves loams, 12 to 18 percent slopes, eroded

Storden, eroded

Extent: 60 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	7.4 to 8.4
C -- 9 to 60 in	loam	moderate	7.62 to 9.65 in	7.4 to 8.4

Ves, eroded

Extent: 25 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) .20
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.54 to 1.99 in	6.1 to 7.8
Bw -- 9 to 18 in	loam	moderate	1.36 to 1.72 in	6.6 to 7.8
C -- 18 to 60 in	loam	moderate	6.26 to 7.93 in	7.4 to 8.4

954D2--Storden-Ves 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Terril

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*

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

Storden, eroded

Extent: 60 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	7.4 to 8.4
C -- 9 to 60 in	loam	moderate	7.62 to 9.65 in	7.4 to 8.4

Clarion, eroded

Extent: 25 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 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	5.6 to 7.3
Bw -- 10 to 18 in	loam	moderate	1.41 to 1.57 in	5.6 to 7.3
C -- 18 to 60 in	loam	moderate	7.09 to 7.93 in	7.4 to 8.4

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Terril

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*

968--Hanska-Webster complex

Hanska

Extent: 50 percent of the unit
Landform(s): flats on moraines
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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .10
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	sandy loam	moderately rapid	2.72 to 3.26 in	6.1 to 7.8
AB -- 18 to 23 in	sandy loam	moderately rapid	0.47 to 0.61 in	6.1 to 7.3
Bg -- 23 to 29 in	loamy sand	rapid	0.50 to 0.63 in	6.1 to 7.8
Cg -- 29 to 60 in	sand	rapid	0.92 to 1.54 in	6.6 to 7.8

Webster

Extent: 40 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) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 16 in	loam	moderate	3.07 to 3.39 in	6.6 to 7.3
Bg -- 16 to 26 in	clay loam	moderate	1.57 to 1.77 in	6.6 to 7.8
Cg -- 26 to 60 in	clay loam	moderate	4.74 to 6.43 in	7.4 to 8.4

968--Hanska-Webster complex

Dickman

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*

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*

999B--Ves-Storden-Estherville complex, 2 to 6 percent slopes

Ves

Extent: 45 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 to 5 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) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.67 to 2.17 in	6.1 to 7.3
Bw -- 10 to 26 in	loam	moderate	2.42 to 3.07 in	6.1 to 7.3
C -- 26 to 60 in	loam	moderate	5.08 to 6.43 in	7.4 to 8.4

Storden

Extent: 20 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	7.4 to 8.4
C -- 9 to 60 in	loam	moderate	7.62 to 9.65 in	7.4 to 8.4

999B--Ves-Storden-Estherville complex, 2 to 6 percent slopes

Estherville

Extent: 20 percent of the unit
Landform(s): hills on moraines
Slope gradient: 2 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): 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.77 in	5.6 to 7.3
Bw -- 10 to 15 in	sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
2C -- 15 to 60 in	gravelly coarse sand	rapid	0.90 to 1.80 in	6.6 to 8.4

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

999B--Ves-Storden-Estherville complex, 2 to 6 percent slopes

Terril

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*

999C--Ves-Storden-Estherville complex, 6 to 12 percent slopes

Ves

Extent: 35 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) .20
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.67 to 2.17 in	6.1 to 7.8
Bw -- 10 to 26 in	loam	moderate	2.42 to 3.07 in	6.6 to 7.8
C -- 26 to 60 in	loam	moderate	5.08 to 6.43 in	7.4 to 8.4

Storden

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	7.4 to 8.4
C -- 9 to 60 in	loam	moderate	7.62 to 9.65 in	7.4 to 8.4

999C--Ves-Storden-Estherville complex, 6 to 12 percent slopes

Estherville

Extent: 25 percent of the unit
Landform(s): hills on moraines
Slope gradient: 6 to 12 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): 2
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.77 in	5.6 to 7.3
Bw -- 10 to 15 in	sandy loam	moderately rapid	0.67 to 0.92 in	5.6 to 7.3
2C -- 15 to 60 in	gravelly coarse sand	rapid	0.90 to 1.80 in	6.6 to 8.4

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

999C--Ves-Storden-Estherville complex, 6 to 12 percent slopes

Terril

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*

999D--Storden-Ves-Hawick complex, 12 to 18 percent slopes

Storden

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): 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	7.4 to 8.4
C -- 9 to 60 in	loam	moderate	7.62 to 9.65 in	7.4 to 8.4

Ves

Extent: 25 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) .20
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.67 to 2.17 in	6.1 to 7.8
Bw -- 10 to 19 in	loam	moderate	1.36 to 1.72 in	6.6 to 7.8
C -- 19 to 60 in	loam	moderate	6.14 to 7.78 in	7.4 to 8.4

999D--Storden-Ves-Hawick complex, 12 to 18 percent slopes

Hawick

Extent: 25 percent of the unit
Landform(s): hills on moraines
Slope gradient: 12 to 18 percent
Parent material: sandy and gravelly 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loamy sand	moderately rapid	1.28 to 1.48 in	6.1 to 7.8
Bw -- 10 to 16 in	gravelly coarse sand	rapid	0.19 to 0.63 in	6.1 to 7.8
C -- 16 to 60 in	gravelly coarse sand	very rapid	0.87 to 2.62 in	7.4 to 8.4

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

999D--Storden-Ves-Hawick complex, 12 to 18 percent slopes

Terril

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*

999F--Storden-Hawick complex, 18 to 50 percent slopes

Storden

Extent: 55 percent of the unit
Landform(s): hills on moraines
Slope gradient: 18 to 50 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
C -- 8 to 60 in	loam	moderate	7.80 to 9.87 in	7.4 to 8.4

Hawick

Extent: 30 percent of the unit
Landform(s): hills on moraines
Slope gradient: 18 to 50 percent
Parent material: sandy and gravelly 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .10
Land capability, nonirrigated 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	loamy coarse sand	moderately rapid	1.43 to 1.65 in	6.1 to 7.8
Bw -- 11 to 21 in	gravelly coarse sand	rapid	0.30 to 0.98 in	6.1 to 7.8
C -- 21 to 60 in	gravelly coarse sand	very rapid	0.78 to 2.34 in	7.4 to 8.4

999F--Storden-Hawick complex, 18 to 50 percent slopes

Sparta

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Terril

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*

1016--Udorthents, loamy

Udorthents, loamy

Extent: 100 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 6 percent
Parent material: variable loamy material
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:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

1027--Udorthents, wet substratum

Udorthents, wet substratum

Extent: 100 percent of the unit
Landform(s): flats on moraines, outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: variable soil material
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:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

1029--Pits, gravel

Pits, gravel

Extent: 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 35 percent
Parent material: sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
Drainage class:

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI): 134
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

1052--Palms and Okoboji soils, ponded

Okoboji, ponded

Extent: 50 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: fine-silty 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .24
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1 -- 0 to 13 in	silty clay loam	moderately slow	2.34 to 2.60 in	6.6 to 7.8
A2 -- 13 to 16 in	silty clay loam	moderately slow	0.57 to 0.63 in	6.6 to 7.8
Bg -- 16 to 60 in	silty clay loam	moderately slow	7.87 to 8.74 in	6.6 to 7.8

Palms, ponded

Extent: 50 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: mucky 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 23 in	muck	moderately rapid	7.99 to 10.28 in	
C -- 23 to 60 in	clay loam	moderate	5.18 to 8.14 in	

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: 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:
Hydrologic group:
Potential for frost action:

Representative soil profile:

Texture	*Permeability*	*Available water capacity*	*pH*

1829B--Ridgeport variant loam, 0 to 6 percent slopes

Ridgeport, variant

Extent: 85 percent of the unit
Landform(s): hills on stream terraces
Slope gradient: 0 to 6 percent
Parent material: coarse-loamy outwash over sandy outwash
Restrictive feature(s): paralithic bedrock at 20 to 40 inche
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) .28
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderately rapid	1.27 to 1.81 in	5.6 to 7.3
Bw1 -- 9 to 16 in	sandy loam	moderately rapid	0.71 to 0.99 in	6.1 to 7.3
Bw2 -- 16 to 25 in	gravelly coarse sand	rapid	0.18 to 0.36 in	6.1 to 7.8
2Cr -- 25 to 60 in	bedrock	moderate		

Estherville

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*

1829B--Ridgeport variant loam, 0 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*

Tilfer

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*

1829C--Ridgeport variant loam, 6 to 15 percent slopes

Ridgeport, variant

Extent: 90 percent of the unit
Landform(s): hills on stream terraces
Slope gradient: 6 to 15 percent
Parent material: coarse-loamy outwash over sandy outwash
Restrictive feature(s): paralithic bedrock at 20 to 40 inche
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) .28
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loam	moderately rapid	1.27 to 1.81 in	5.6 to 7.3
Bw -- 9 to 20 in	sandy loam	moderately rapid	1.10 to 1.54 in	6.1 to 7.3
2Cr -- 20 to 60 in	bedrock	moderate		

Estherville

Extent: 5 percent of the unit
Landform(s): stream terraces
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*

1829C--Ridgeport variant loam, 6 to 15 percent slopes

Tilfer

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*

1833--Coland loam

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) .28
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.3
A -- 10 to 46 in	clay loam	moderate	7.24 to 7.97 in	6.1 to 7.3
Cg -- 46 to 60 in	loam	moderately rapid	1.79 to 2.34 in	6.1 to 7.8

Hanlon

Extent: 4 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1833--Coland loam

Spillville

Extent: 3 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Kalmarville

Extent: 3 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1887--Millington clay loam, sandy substratum

Millington, sandy substratum, occasionally flooded

Extent: 85 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): 4
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	clay loam	moderate	1.54 to 2.08 in	7.4 to 8.4
A -- 9 to 40 in	loam	moderate	5.29 to 6.22 in	7.4 to 8.4
Cg -- 40 to 60 in	sand	very rapid	0.59 to 1.18 in	7.4 to 8.4

Spillville

Extent: 15 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: no
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1909--Lemond loam, depressional

Lemond, depressional

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): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 30 in	loam	moderately rapid	5.98 to 6.58 in	7.4 to 8.4
Bg -- 30 to 36 in	sandy loam	moderately rapid	0.59 to 0.77 in	7.4 to 8.4
2Cg -- 36 to 60 in	coarse sand	rapid	1.20 to 1.68 in	7.4 to 8.4

Blue Earth

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1911F--Storden-Ridgeport variant loams, 15 to 50 percent slopes

Storden

Extent: 60 percent of the unit
Landform(s): hills on moraines
Slope gradient: 15 to 50 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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	loam	moderate	1.18 to 1.30 in	7.4 to 8.4
C -- 6 to 60 in	loam	moderate	8.09 to 10.25 in	7.4 to 8.4

Ridgeport, variant

Extent: 25 percent of the unit
Landform(s): hills on terraces
Slope gradient: 15 to 50 percent
Parent material: coarse-loamy outwash over sandy outwash
Restrictive feature(s): paralithic bedrock at 20 to 40 inche
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 7e
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 14 in	loam	moderately rapid	1.98 to 2.83 in	5.6 to 7.3
2Cr -- 14 to 60 in	bedrock	moderate		

1911F--Storden-Ridgeport variant loams, 15 to 50 percent slopes

Terril

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*

Hawick

Extent: 5 percent of the unit
Landform(s): stream terraces
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*

1911F--Storden-Ridgeport variant loams, 15 to 50 percent slopes

Sparta

Extent: 5 percent of the unit
Landform(s): stream terraces
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*

1912--Tilfer variant clay loam

Tilfer, variant

Extent: 85 percent of the unit
Landform(s): stream terraces
Slope gradient: 0 to 2 percent
Parent material: loamy till
Restrictive feature(s): paralithic bedrock at 20 to 40 inche
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) .15
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 20 in	clay loam	moderate	3.81 to 4.22 in	7.4 to 8.4
Bg -- 20 to 32 in	loam	moderate	2.01 to 2.24 in	7.4 to 8.4
2Crg -- 32 to 60 in	bedrock	moderate		

Lemond

Extent: 15 percent of the unit
Landform(s): flats
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*

1917--Nishna silty clay, ponded

Nishna, frequently flooded, ponded

Extent: 85 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: clayey alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: frequent
Drainage class: very 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 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 26 in	silty clay	slow	3.12 to 3.64 in	7.4 to 8.4
C -- 26 to 60 in	silty clay	slow	3.72 to 4.40 in	7.4 to 8.4

Colo

Extent: 15 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1919F--Clarion-Terril loams, 25 to 50 percent slopes

Extent: percent of the unit
Landform(s):
Slope gradient:
Parent material:
Restrictive feature(s):
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*

1928--Hanska loam, gravelly substratum

Hanska, gravelly substratum

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: frequent
Drainage class: poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	loam	moderately rapid	3.62 to 3.98 in	6.1 to 7.8
Bg -- 18 to 26 in	sandy loam	moderately rapid	0.79 to 1.02 in	6.1 to 7.3
2Cg1 -- 26 to 31 in	loamy sand	rapid	0.41 to 0.51 in	6.1 to 7.8
2Cg2 -- 31 to 60 in	gravelly coarse sand	rapid	0.86 to 1.44 in	6.6 to 7.8

Linder

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1929--Lemond loam, gravelly substratum

Lemond, gravelly substratum

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	loam	moderately rapid	3.62 to 3.98 in	7.4 to 8.4
Bg -- 18 to 27 in	sandy loam	moderately rapid	0.87 to 1.13 in	7.4 to 8.4
2Cg -- 27 to 60 in	gravelly coarse sand	rapid	1.65 to 2.31 in	7.4 to 8.4

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*

1929--Lemond loam, gravelly substratum

Hanska

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*

1930--Dickman sandy loam, moderately wet

Dickman, moderately wet

Extent: 90 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 0 to 3 percent
Parent material: coarse-loamy outwash over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	sandy loam	moderately rapid	1.94 to 2.24 in	5.6 to 6.5
Bw -- 15 to 24 in	sand	moderately rapid	0.91 to 1.18 in	5.6 to 7.3
C -- 24 to 60 in	sand	rapid	0.72 to 2.51 in	5.6 to 7.8

Hanska

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

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 glaciolacustrine deposits 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

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A --	0 to 9 in	sandy loam	moderately rapid	1.18 to 1.63 in	7.4 to 8.4
Bg --	9 to 23 in	loamy sand	rapid	0.55 to 1.65 in	7.4 to 8.4
2Cg --	23 to 60 in	clay loam	moderately slow	4.44 to 7.40 in	7.4 to 8.4

Canisteo

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

1931--Essexville sandy loam

Lemond

Extent: 3 percent of the unit
Landform(s): flats
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*

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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
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	

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
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

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 17 in	clay loam	moderate	2.88 to 3.72 in	5.6 to 7.3
Bw,Bg1 -- 17 to 33 in	clay loam	moderate	2.42 to 3.07 in	5.6 to 7.3
Bg2 -- 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

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): 4
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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
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

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
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: 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:
Hydrologic group:
Potential for frost action:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*

Map Unit Description (MN)

Brown 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.