

Map Unit Description (MN)

Chippewa 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]

31D--Storden loam, 12 to 18 percent slopes

Storden

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 18 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	7.4 to 8.4
Bk -- 7 to 20 in	loam	moderate	1.95 to 2.47 in	7.4 to 8.4
C -- 20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

35--Blue Earth mucky silt loam

Blue Earth

Extent: 85 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material: organic material over till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .37

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 20 in	mucky silt loam	moderate	3.61 to 4.82 in	7.4 to 8.4
Cg -- 20 to 60 in	silty clay loam	moderate	5.57 to 6.36 in	7.4 to 8.4

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45B--Maddock loamy fine sand, 1 to 6 percent slopes

Maddock

Extent: 90 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .10

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loamy fine sand	rapid	0.98 to 1.18 in	6.6 to 7.3
Bw,C -- 10 to 60 in	fine sand	rapid	2.50 to 6.00 in	6.6 to 8.4

45C--Maddock loamy fine sand, 6 to 12 percent slopes

Maddock

Extent: 90 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .10

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loamy fine sand	rapid	0.98 to 1.18 in	6.6 to 7.3
Bw,C -- 10 to 60 in	fine sand	rapid	2.50 to 6.00 in	6.6 to 8.4

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60--Glyndon silt loam

Glyndon

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 2 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .37

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silt loam	moderate	1.97 to 2.26 in	7.4 to 8.4
Bk -- 10 to 19 in	silt loam	moderately rapid	1.54 to 1.81 in	7.9 to 8.4
C -- 19 to 47 in	silt loam	moderately rapid	4.19 to 6.15 in	7.4 to 8.4
Cg -- 47 to 60 in	silty clay loam	moderate	2.08 to 2.86 in	7.4 to 8.4

85--Calco silty clay loam

Calco, occasionally flooded

Extent: 86 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 37 in	silty clay loam	moderate	7.77 to 8.51 in	7.4 to 8.4
Bg -- 37 to 46 in	silty clay loam	moderate	1.90 to 2.08 in	7.4 to 8.4
Cg -- 46 to 60 in	silty clay loam	moderate	2.48 to 2.76 in	7.4 to 8.4

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89--McDonaldsville silty clay

McDonaldsville

Extent: 86 percent of the unit

Landform(s): flats

Slope gradient: 0 to 2 percent

Parent material: lacustrine deposits over 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): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 23 in	silty clay	slow	3.43 to 4.11 in	6.1 to 7.3
Bw -- 23 to 32 in	silty clay	slow	1.27 to 1.72 in	6.1 to 7.3
2Cg -- 32 to 60 in	sand	rapid	1.96 to 3.35 in	7.9 to 8.4

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

Terril

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: 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) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 18 in	loam	moderate	3.62 to 3.98 in	6.1 to 7.3
A2 -- 18 to 28 in	loam	moderate	1.67 to 1.87 in	6.1 to 7.3
Bw,C -- 28 to 60 in	loam	moderate	5.10 to 5.74 in	6.1 to 7.8

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113--Webster silty clay loam

Webster

Extent: 85 percent of the unit

Landform(s): swales

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) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 20 in	silty clay loam	moderate	3.81 to 4.22 in	6.6 to 7.3
Bg -- 20 to 23 in	loam	moderate	0.44 to 0.50 in	6.6 to 7.3
Cg -- 23 to 60 in	loam	moderate	5.18 to 7.03 in	7.4 to 8.4

127A--Sverdrup fine sandy loam, 0 to 2 percent slopes

Sverdrup

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material: 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) .17

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.48 in	6.1 to 7.3
Bw -- 10 to 24 in	loam	moderately rapid	1.13 to 1.98 in	6.1 to 7.3
C -- 24 to 60 in	fine sand	rapid	0.72 to 2.15 in	7.4 to 8.4

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127B--Sverdrup fine sandy loam, 2 to 6 percent slopes

Sverdrup

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: 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) .20

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.28 to 1.48 in	6.1 to 7.3
Bw -- 10 to 24 in	loamy sand	moderately rapid	1.13 to 1.98 in	6.1 to 7.3
C -- 24 to 60 in	sand	rapid	0.72 to 2.15 in	7.4 to 8.4

127C--Sverdrup fine sandy loam, 6 to 12 percent slopes

Sverdrup

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material: 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) .20

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.28 to 1.48 in	6.1 to 7.3
Bw -- 10 to 24 in	loamy sand	moderately rapid	1.13 to 1.98 in	6.1 to 7.3
C -- 24 to 60 in	sand	rapid	0.72 to 2.15 in	7.4 to 8.4

Map Unit Description (MN)

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141A--Egeland sandy loam, 0 to 2 percent slopes

Egeland

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.56 to 2.41 in	5.6 to 7.3
Bw -- 14 to 37 in	sandy loam	moderately rapid	2.06 to 3.43 in	6.1 to 7.3
C -- 37 to 60 in	loamy fine sand	moderately rapid	1.83 to 2.28 in	7.4 to 8.4

141B--Egeland sandy loam, 2 to 6 percent slopes

Egeland

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.56 to 2.41 in	5.6 to 7.3
Bw -- 14 to 37 in	sandy loam	moderately rapid	2.06 to 3.43 in	6.1 to 7.3
C -- 37 to 60 in	loamy fine sand	moderately rapid	1.83 to 2.28 in	7.4 to 8.4

Map Unit Description (MN)

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234--Tonka silty clay loam

Tonka

Extent: 85 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 30 in	silty clay loam	moderate	5.39 to 6.88 in	5.6 to 7.3
Btg,Bg -- 30 to 54 in	silty clay loam	slow	3.36 to 4.80 in	5.6 to 7.3
Cg -- 54 to 60 in	silty clay loam	moderate	0.83 to 1.12 in	6.6 to 8.4

246--Marysland loam

Marysland

Extent: 85 percent of the unit

Landform(s): flats

Slope gradient: 0 to 2 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	loam	moderate	2.54 to 3.29 in	7.4 to 8.4
Bkg -- 15 to 27 in	loam	moderate	1.77 to 2.24 in	7.4 to 8.4
2Cg -- 27 to 60 in	stratified gravelly coarse sand to fine sand	rapid	0.66 to 2.31 in	7.4 to 8.4

Map Unit Description (MN)

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290B--Rothsay loam, 2 to 6 percent slopes

Rothsay

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loam	moderate	2.17 to 2.36 in	6.6 to 7.3
Bw -- 10 to 30 in	very fine sandy loam	moderate	3.41 to 4.42 in	6.6 to 7.3
Bk,C -- 30 to 60 in	very fine sandy loam	moderately rapid	5.98 to 6.58 in	7.4 to 8.4

324B--Torning very fine sandy loam, 2 to 6 percent slopes

Torning

Extent: 86 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .37

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	very fine sandy loam	moderately rapid	1.77 to 2.17 in	7.4 to 7.8
Bk,C -- 10 to 60 in	very fine sandy loam	moderately rapid	4.50 to 9.50 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

338--Waubay silty clay loam

Waubay

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 2 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	silty clay loam	moderate	3.22 to 3.72 in	6.1 to 7.3
Bw -- 17 to 27 in	silty clay loam	moderate	1.77 to 2.07 in	6.6 to 7.3
Bk -- 27 to 38 in	silty clay loam	moderate	1.87 to 2.20 in	7.4 to 8.4
C -- 38 to 60 in	silt loam	moderate	3.53 to 3.97 in	7.4 to 8.4

339A--Fordville silt loam, 0 to 2 percent slopes

Fordville

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material: 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): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	silt loam	moderate	3.22 to 3.72 in	6.1 to 7.3
Bw -- 17 to 28 in	loam	moderately rapid	1.32 to 1.98 in	6.1 to 7.3
2C -- 28 to 60 in	gravelly sand	very rapid	0.96 to 1.91 in	7.4 to 8.4

Map Unit Description (MN)

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339B--Fordville loam, 2 to 6 percent slopes

Fordville

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: 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): 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: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	loam	moderate	3.05 to 3.39 in	6.1 to 7.3
Bw -- 17 to 28 in	loam	moderately rapid	1.32 to 1.98 in	6.1 to 7.3
2C -- 28 to 60 in	gravelly sand	very rapid	0.96 to 1.91 in	7.4 to 8.4

341B--Arvilla sandy loam, 1 to 6 percent slopes

Arvilla

Extent: 90 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 6 percent

Parent material: 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) .17

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.84 to 2.13 in	6.1 to 7.3
Bw -- 14 to 18 in	sandy loam	moderately rapid	0.43 to 0.55 in	6.6 to 7.3
2C -- 18 to 60 in	gravelly coarse sand	very rapid	0.83 to 2.09 in	7.4 to 8.4

Map Unit Description (MN)

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341C--Arvilla sandy loam, 6 to 12 percent slopes

Arvilla

Extent: 90 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material: 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) .17

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	sandy loam	moderately rapid	1.84 to 2.13 in	6.1 to 7.3
Bw -- 14 to 18 in	sandy loam	moderately rapid	0.43 to 0.55 in	6.6 to 7.3
2C -- 18 to 60 in	gravelly coarse sand	very rapid	0.83 to 2.09 in	7.4 to 8.4

344--Quam silty clay loam

Quam

Extent: 85 percent of the unit

Landform(s): depressions

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) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderately slow	1.77 to 2.17 in	6.6 to 7.3
A -- 10 to 36 in	silty clay loam	moderately slow	4.16 to 5.72 in	6.6 to 7.3
Cg -- 36 to 60 in	silt loam	moderately slow	3.36 to 4.56 in	6.6 to 7.3

Map Unit Description (MN)

Chippewa County, Minnesota

371--Clontarf fine sandy loam

Clontarf

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 2 percent

Parent material: 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) .15

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	fine sandy loam	moderately rapid	2.46 to 3.40 in	6.1 to 7.3
Bw,2Bw -- 19 to 29 in	sandy loam	moderately rapid	1.23 to 1.94 in	6.1 to 7.3
2C -- 29 to 60 in	loamy sand	rapid	1.54 to 2.76 in	6.6 to 7.3

421B--Ves loam, 2 to 6 percent slopes

Ves

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.1 to 7.3
Bw -- 7 to 17 in	clay loam	moderate	1.48 to 1.87 in	6.1 to 7.3
Bk -- 17 to 27 in	loam	moderate	1.48 to 1.87 in	7.4 to 8.4
C -- 27 to 60 in	loam	moderate	4.96 to 6.28 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

423--Seaforth silt loam

Seaforth

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 2 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 11 in	silt loam	moderate	1.87 to 2.65 in	7.4 to 8.4
Bk -- 11 to 19 in	loam	moderate	1.18 to 1.50 in	7.4 to 8.4
Cg -- 19 to 60 in	loam	moderate	6.96 to 7.78 in	7.4 to 8.4

434--Perella silty clay loam

Perella

Extent: 85 percent of the unit

Landform(s): swales

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	silty clay loam	moderate	2.91 to 3.71 in	6.6 to 7.3
Bg -- 16 to 25 in	silty clay loam	moderate	1.36 to 1.99 in	6.6 to 7.3
Cg -- 25 to 60 in	silt loam	moderate	5.54 to 7.62 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

444--Canisteo silty clay loam

Canisteo

Extent: 85 percent of the unit

Landform(s): flats

Slope gradient: 0 to 2 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silty clay loam	moderate	2.69 to 3.29 in	7.4 to 8.4
Bg -- 15 to 24 in	silty clay loam	moderate	1.36 to 1.72 in	7.4 to 8.4
Cg -- 24 to 60 in	loam	moderate	5.02 to 5.73 in	7.4 to 8.4

574--Du Page loam

Du Page, occasionally flooded

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material: 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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.56 to 1.70 in	6.6 to 8.4
A,C -- 7 to 60 in	loam	moderate	5.28 to 10.55 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

591B--Doland silt loam, 2 to 6 percent slopes

Doland

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 6 percent

Parent material: lacustrine deposits and/or 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) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silt loam	moderate	2.36 to 2.76 in	6.1 to 7.3
Bw -- 10 to 20 in	silt loam	moderate	1.74 to 2.25 in	6.1 to 7.3
2Bk,2C -- 20 to 60 in	loam	moderate	5.57 to 7.56 in	7.4 to 8.4

595E--Swanlake loam, 18 to 25 percent slopes

Swanlake

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 18 to 25 percent

Parent material: 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) .24

Land capability, nonirrigated 6e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 8 in	loam	moderate	1.57 to 1.89 in	7.4 to 8.4
Bk,C -- 8 to 60 in	loam	moderate	8.83 to 9.87 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

595F--Swanlake loam, 25 to 40 percent slopes

Swanlake

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 25 to 40 percent

Parent material: 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) .24

Land capability, nonirrigated 6e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 8 in	loam	moderate	1.57 to 1.89 in	7.4 to 8.4
Bk,C -- 8 to 60 in	loam	moderate	8.83 to 9.87 in	7.4 to 8.4

597--Tara silty clay loam

Tara

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 2 percent

Parent material: lacustrine deposits and/or till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	silty clay loam	moderate	2.83 to 3.40 in	6.1 to 7.3
Bw -- 14 to 31 in	silt loam	moderate	2.88 to 3.72 in	6.6 to 7.8
2Bk,2C -- 31 to 60 in	loam	moderate	4.31 to 5.46 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

610--Calco silty clay loam, frequently flooded

Calco, frequently flooded

Extent: 86 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 5w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 23 in	silty clay loam	moderate	4.80 to 5.25 in	7.4 to 8.4
Bg -- 23 to 31 in	silty clay loam	moderate	1.74 to 1.90 in	7.4 to 8.4
Cg -- 31 to 60 in	silty clay loam	moderate	5.17 to 5.75 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

847--Colvin-Spicer silty clay loams

Colvin

Extent: 60 percent of the unit

Landform(s): flats

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silty clay loam	moderately slow	2.69 to 3.44 in	7.4 to 8.4
Bkg -- 15 to 21 in	silty clay loam	moderate	0.94 to 1.30 in	7.4 to 8.4
Cg -- 21 to 60 in	silty clay loam	moderate	6.24 to 8.57 in	7.4 to 8.4

Spicer

Extent: 25 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 2 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	silty clay loam	moderate	2.91 to 3.87 in	7.4 to 8.4
Bg -- 16 to 40 in	silty clay loam	moderate	3.84 to 5.28 in	7.4 to 8.4
Cg -- 40 to 60 in	silty clay loam	moderate	3.15 to 4.33 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

881--Glyndon-Quam silty clay loams

Glyndon

Extent: 60 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 2 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silty clay loam	moderate	1.42 to 1.73 in	7.4 to 8.4
Bk -- 8 to 17 in	silt loam	moderately rapid	1.54 to 1.81 in	7.9 to 8.4
C -- 17 to 47 in	silt loam	moderately rapid	4.49 to 6.58 in	7.4 to 8.4
Cg -- 47 to 60 in	silty clay loam	moderate	2.08 to 2.86 in	7.4 to 8.4

Quam

Extent: 35 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderately slow	1.77 to 2.17 in	6.6 to 7.3
A -- 10 to 36 in	silty clay loam	moderately slow	4.16 to 5.72 in	6.6 to 7.3
Cg -- 36 to 60 in	silt loam	moderately slow	3.36 to 4.56 in	6.6 to 7.3

Map Unit Description (MN)

Chippewa County, Minnesota

891B2--Doland-Swanlake complex, 3 to 6 percent slopes, eroded

Doland, eroded

Extent: 65 percent of the unit

Landform(s): moraines

Slope gradient: 3 to 6 percent

Parent material: lacustrine deposits and/or 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) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	silt loam	moderate	1.70 to 1.98 in	6.1 to 7.3
Bw -- 7 to 18 in	silt loam	moderate	1.87 to 2.43 in	6.1 to 7.3
2Bk,2C -- 18 to 60 in	loam	moderate	5.84 to 7.93 in	7.4 to 8.4

Swanlake, eroded

Extent: 30 percent of the unit

Landform(s): moraines, moraines

Slope gradient: 3 to 6 percent

Parent material: 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) .24

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.70 in	7.4 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	8.97 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

891C2--Doland-Swanlake complex, 6 to 12 percent slopes, eroded

Doland, eroded

Extent: 60 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material: lacustrine deposits and/or 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) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	silt loam	moderate	1.70 to 1.98 in	6.1 to 7.3
Bw -- 7 to 18 in	silt loam	moderate	1.87 to 2.43 in	6.1 to 7.3
2Bk,2C -- 18 to 60 in	loam	moderate	5.84 to 7.93 in	7.4 to 8.4

Swanlake, eroded

Extent: 35 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material: 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) .24

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.70 in	7.4 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	8.97 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

957B2--Rothsay-Zell complex, 3 to 6 percent slopes, eroded

Rothsay, eroded

Extent: 70 percent of the unit

Landform(s): moraines

Slope gradient: 3 to 6 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.73 to 1.89 in	6.6 to 7.3
Bw -- 8 to 24 in	loam	moderate	2.74 to 3.55 in	6.6 to 7.3
Bk,C -- 24 to 60 in	very fine sandy loam	moderately rapid	7.17 to 7.88 in	7.4 to 8.4

Zell, eroded

Extent: 25 percent of the unit

Landform(s): moraines

Slope gradient: 3 to 6 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .49

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	silt loam	moderate	1.72 to 1.99 in	7.4 to 8.4
Bk -- 9 to 16 in	silt loam	moderate	1.06 to 1.42 in	7.4 to 8.4
C -- 16 to 60 in	silt loam	moderate	6.56 to 8.74 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

957C2--Rothsay-Zell complex, 6 to 12 percent slopes, eroded

Rothsay, eroded

Extent: 60 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.73 to 1.89 in	6.6 to 7.3
Bw -- 8 to 24 in	loam	moderate	2.74 to 3.55 in	6.6 to 7.3
Bk,C -- 24 to 60 in	very fine sandy loam	moderately rapid	7.17 to 7.88 in	7.4 to 8.4

Zell, eroded

Extent: 35 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 12 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .49

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	silt loam	moderate	1.72 to 1.99 in	7.4 to 8.4
Bk -- 9 to 16 in	silt loam	moderate	1.06 to 1.42 in	7.4 to 8.4
C -- 16 to 60 in	silt loam	moderate	6.56 to 8.74 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

992E--Rock outcrop-Copaston complex, 2 to 40 percent slopes

Rock outcrop

Extent: 55 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:

Hydrologic group:

Potential for frost action:

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

Extent: 35 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 40 percent

Parent material: alluvium

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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A --	0 to 13 in	silt loam	moderate	2.60 to 2.86 in	5.6 to 7.3
R --	13 to 80 in	unweathered bedrock	very slow		

Map Unit Description (MN)

Chippewa County, Minnesota

1003B--Udorthents (cut and fill land)

Udorthents, (cut and fill land)

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: well drained

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

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

Map Unit Description (MN)

Chippewa County, Minnesota

1029--Pits, gravel

Pits, gravel

Extent: 100 percent of the unit

Landform(s): moraines

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)

Chippewa County, Minnesota

1053--Aquolls and Aquents, ponded

Aquolls, ponded

Extent: 45 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material: loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

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

Extent: 45 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material: loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

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

Chippewa County, Minnesota

1356--Water, miscellaneous

Water, miscellaneous

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

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

Chippewa County, Minnesota

1802--Spicer-Quam silty clay loams

Spicer

Extent: 60 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 2 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silty clay loam	moderate	3.40 to 4.54 in	7.4 to 8.4
Bg -- 19 to 39 in	silty clay loam	moderate	3.21 to 4.42 in	7.4 to 8.4
Cg -- 39 to 60 in	silt loam	moderate	3.34 to 4.59 in	7.4 to 8.4

Quam

Extent: 35 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silty clay loam	moderately slow	1.42 to 1.73 in	6.6 to 7.3
A -- 8 to 38 in	silty clay loam	moderately slow	4.79 to 6.58 in	6.6 to 7.3
Cg -- 38 to 60 in	silt loam	moderately slow	3.09 to 4.19 in	6.6 to 7.3

Map Unit Description (MN)

Chippewa County, Minnesota

1849D--Storden stony loam, 6 to 25 percent slopes

Storden

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 6 to 25 percent

Parent material: 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .15

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	stony loam	moderate	0.87 to 1.42 in	7.4 to 8.4
Bk,C -- 8 to 60 in	loam	moderate	6.76 to 9.35 in	7.4 to 8.4

1864B--Ves stony loam, 1 to 6 percent slopes

Ves

Extent: 85 percent of the unit

Landform(s): moraines

Slope gradient: 1 to 6 percent

Parent material: 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): 7

Wind erodibility index (WEI): 38

Kw factor (surface layer) .15

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	stony loam	moderate	0.91 to 1.63 in	6.1 to 7.3
Bw -- 9 to 19 in	loam	moderate	1.18 to 1.77 in	6.6 to 7.3
Bk,C -- 19 to 60 in	loam	moderate	4.91 to 7.37 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

1866--Perella-Colvin silty clays

Perella

Extent: 60 percent of the unit

Landform(s): flats

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 20 in	silty clay	slow	2.61 to 3.41 in	6.1 to 7.3
Bg,Cg -- 20 to 60 in	silt loam	moderate	6.36 to 8.75 in	7.4 to 8.4

Colvin

Extent: 35 percent of the unit

Landform(s): flats

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	silty clay	slow	1.78 to 2.10 in	7.4 to 7.8
Bkg -- 16 to 21 in	silty clay loam	moderate	0.76 to 1.04 in	7.4 to 8.4
Cg -- 21 to 60 in	silty clay loam	moderate	6.24 to 8.57 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

1868--Canisteo stony loam

Canisteo

Extent: 86 percent of the unit

Landform(s): flats

Slope gradient: 0 to 2 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 6s

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	stony loam	moderate	2.34 to 2.86 in	7.4 to 8.4
Bg -- 13 to 20 in	loam	moderate	1.06 to 1.35 in	7.4 to 8.4
Cg -- 20 to 60 in	loam	moderate	5.57 to 6.36 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

GP--Udipsamments-Pits, gravel, complex

Pits, gravel

Extent: 50 to 100 percent of the unit

Landform(s): moraines, outwash plains, stream terraces

Slope gradient: 0 to 50 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):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Udipsamments

Extent: 15 to 30 percent of the unit

Landform(s): moraines, outwash plains, stream terraces

Slope gradient: 0 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class: excessively drained

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)

Chippewa County, Minnesota

J1A--Parnell silty clay loam, depressional, 0 to 1 percent slopes

Parnell, depressional

Extent: 85 to 95 percent of the unit

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

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) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1,A2 -- 0 to 22 in	silty clay loam	moderately slow	3.97 to 4.85 in	6.1 to 7.3
Btg -- 22 to 55 in	silty clay	slow	4.30 to 5.29 in	6.1 to 7.3
BCg -- 55 to 80 in	silty clay loam	slow	3.97 to 4.71 in	6.6 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J2A--La Prairie loam, 0 to 2 percent slopes, occasionally flooded

La Prairie, occasionally flooded

Extent: 80 to 95 percent of the unit

Landform(s): flats on flood plains

Slope gradient: 0 to 2 percent

Parent material: 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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	6.6 to 8.4
A -- 9 to 38 in	loam	moderate	5.83 to 6.41 in	6.6 to 8.4
Bw -- 38 to 50 in	loam	moderate	2.01 to 2.24 in	6.6 to 8.4
C -- 50 to 60 in	loam	moderate	1.67 to 1.87 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J6A--McDonaldsville silty clay, 0 to 2 percent slopes

McDonaldsville

Extent: 80 to 95 percent of the unit

Landform(s): flats on outwash plains, drainageways on outwash plains

Slope gradient: 0 to 2 percent

Parent material: lacustrine deposits over 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): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 17 in	silty clay	slow	2.54 to 3.05 in	6.1 to 7.3
Bw,BC -- 17 to 36 in	silty clay	slow	2.65 to 3.59 in	6.1 to 8.4
2C -- 36 to 80 in	sand	rapid	3.09 to 5.29 in	7.9 to 8.4

J7A--Sverdrup sandy loam, 0 to 2 percent slopes

Sverdrup

Extent: 70 to 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: 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) .20

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 12 in	sandy loam	moderately rapid	1.54 to 1.77 in	6.1 to 7.3
Bw -- 12 to 26 in	sandy loam	moderately rapid	1.70 to 1.98 in	6.1 to 7.3
2C -- 26 to 80 in	sand	rapid	2.70 to 3.78 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J7B--Sverdrup sandy loam, 2 to 6 percent slopes

Sverdrup

Extent: 80 to 90 percent of the unit

Landform(s): hills on outwash plains

Slope gradient: 2 to 6 percent

Parent material: 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) .20

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 12 in	sandy loam	moderately rapid	1.54 to 1.77 in	6.1 to 7.3
Bw -- 12 to 26 in	sandy loam	moderately rapid	1.70 to 1.98 in	6.1 to 7.3
2C -- 26 to 80 in	sand	rapid	2.70 to 3.78 in	7.4 to 8.4

J8A--Egeland sandy loam, 0 to 2 percent slopes

Egeland

Extent: 70 to 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 15 in	sandy loam	moderately rapid	1.65 to 2.54 in	6.1 to 7.3
Bw -- 15 to 40 in	sandy loam	moderately rapid	2.27 to 3.78 in	6.1 to 7.8
Bk -- 40 to 60 in	sandy loam	moderately rapid	1.77 to 2.95 in	7.4 to 8.4
C -- 60 to 80 in	loamy sand	moderately rapid	1.61 to 2.01 in	6.6 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J8B--Egeland sandy loam, 2 to 6 percent slopes

Egeland

Extent: 70 to 90 percent of the unit

Landform(s): hills on outwash plains

Slope gradient: 2 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 9 in	sandy loam	moderately rapid	1.00 to 1.54 in	6.1 to 7.3
Bw -- 9 to 26 in	sandy loam	moderately rapid	1.52 to 2.54 in	6.1 to 7.8
Bk -- 26 to 39 in	loamy sand	moderately rapid	1.04 to 1.30 in	6.6 to 8.4
C -- 39 to 80 in	loamy sand	moderately rapid	3.28 to 4.09 in	6.6 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J9A--Estelline silt loam, 0 to 2 percent slopes

Estelline

Extent: 85 to 95 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: lacustrine deposits over 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): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	silt loam	moderate	1.12 to 1.30 in	6.1 to 7.3
Bw -- 6 to 27 in	silty clay loam	moderate	3.83 to 4.46 in	6.1 to 7.8
Bk -- 27 to 37 in	silt loam	moderate	1.57 to 1.97 in	7.4 to 8.4
2C -- 37 to 60 in	gravelly sand	very rapid	0.69 to 1.37 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J11A--Vallers clay loam, 0 to 2 percent slopes

Vallers

Extent: 75 to 95 percent of the unit

Landform(s): rims on depressions on till plains, flats on till plains, drainageways on till plains

Slope gradient: 0 to 2 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

Representative soil profile:

			<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 14 in	clay loam		moderate	2.41 to 2.69 in	7.4 to 8.4
Bkg --	14 to 38 in	loam		moderate	3.60 to 4.56 in	7.4 to 8.4
Cg --	38 to 80 in	loam		moderately slow	6.26 to 7.93 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J12A--Marysland loam, 0 to 2 percent slopes

Marysland

Extent: 75 to 95 percent of the unit

Landform(s): rims on depressions on outwash plains, flats on outwash plains, drainageways on outwash plains

Slope gradient: 0 to 2 percent

Parent material: 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:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 9 in	loam	moderate	1.54 to 1.99 in	7.4 to 8.4
Ak --	9 to 12 in	loam	moderate	0.47 to 0.61 in	7.4 to 8.4
Bkg --	12 to 27 in	loam	moderate	2.30 to 2.92 in	7.4 to 8.4
2Cg --	27 to 80 in	gravelly sand	rapid	1.06 to 3.69 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J15B--Eckman silt loam, 2 to 6 percent slopes

Eckman

Extent: 70 to 90 percent of the unit

Landform(s): hills on lake plains

Slope gradient: 2 to 6 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	silt loam	moderate	2.86 to 3.12 in	6.6 to 7.3
Bw -- 13 to 22 in	silt loam	moderate	1.54 to 1.99 in	6.6 to 7.8
Bk -- 22 to 30 in	silt loam	moderate	1.57 to 1.73 in	7.4 to 8.4
BC,C -- 30 to 80 in	silt loam	moderate	10.00 to 11.00 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J17A--Quam silty clay loam, depressional, 0 to 1 percent slopes

Quam, depressional

Extent: 85 to 95 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderately slow	1.77 to 2.17 in	6.6 to 7.3
A1,A2 -- 10 to 45 in	silty clay loam	moderately slow	5.61 to 6.66 in	6.6 to 7.3
Cg -- 45 to 80 in	silty clay loam	moderately slow	5.61 to 6.66 in	6.6 to 7.8

J18A--Malachy sandy loam, 1 to 3 percent slopes

Malachy

Extent: 75 to 95 percent of the unit

Landform(s): knolls on outwash plains

Slope gradient: 1 to 3 percent

Parent material: 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	sandy loam	moderately rapid	2.20 to 3.05 in	7.4 to 8.4
Bk -- 17 to 28 in	sandy loam	moderately rapid	1.32 to 2.09 in	7.4 to 8.4
2C -- 28 to 80 in	loamy sand	rapid	1.04 to 5.20 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J20A--Clontarf sandy loam, 1 to 3 percent slopes

Clontarf

Extent: 70 to 90 percent of the unit
Landform(s): flats on outwash plains, swales on outwash plains
Slope gradient: 1 to 3 percent
Parent material: 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) .10
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	sandy loam	moderately rapid	1.94 to 2.24 in	6.1 to 7.3
Bw -- 15 to 25 in	sandy loam	moderately rapid	1.23 to 1.43 in	6.1 to 7.3
2C -- 25 to 80 in	sand	rapid	2.74 to 3.83 in	6.6 to 7.8

J23A--Lamoure silty clay loam, 0 to 2 percent slopes, occasionally flooded

Lamoure, occasionally flooded

Extent: 75 to 95 percent of the unit
Landform(s): flats on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1,A2 -- 0 to 27 in	silty clay loam	moderate	4.89 to 5.98 in	7.4 to 8.4
Cg1 -- 27 to 34 in	silty clay loam	moderate	1.07 to 1.27 in	7.4 to 8.4
Cg2 -- 34 to 60 in	silt loam	moderate	5.20 to 5.72 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J24F--Buse loam, 18 to 40 percent slopes

Buse

Extent: 75 to 95 percent of the unit

Landform(s): hills on till plains

Slope gradient: 18 to 40 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 7e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 8 in	loam	moderate	1.34 to 1.73 in	7.4 to 8.4
Bk -- 8 to 37 in	loam	moderate	4.37 to 5.54 in	7.4 to 8.4
C -- 37 to 80 in	loam	moderate	6.44 to 8.15 in	7.4 to 8.4

J26B--Darnen loam, 2 to 6 percent slopes

Darnen

Extent: 85 to 95 percent of the unit

Landform(s): hills on moraines

Slope gradient: 2 to 6 percent

Parent material: 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) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 24 in	loam	moderate	4.80 to 5.28 in	6.6 to 7.3
AB,Bw1 -- 24 to 34 in	loam	moderate	1.67 to 1.87 in	6.1 to 7.3
Bw2 -- 34 to 80 in	loam	moderate	7.83 to 8.75 in	6.6 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J27A--Hantho silt loam, 1 to 3 percent slopes

Hantho

Extent: 75 to 95 percent of the unit

Landform(s): flats on lake plains, swales on lake plains

Slope gradient: 1 to 3 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 12 in	silt loam	moderate	2.60 to 2.83 in	6.6 to 7.8
Bw -- 12 to 24 in	silt loam	moderate	2.07 to 2.69 in	6.6 to 7.8
Bk,Bkg -- 24 to 65 in	silt loam	moderate	6.96 to 9.01 in	7.4 to 8.4
Cg -- 65 to 80 in	silt loam	moderate	2.54 to 3.29 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J30A--Tara silt loam, 1 to 3 percent slopes

Tara

Extent: 85 to 95 percent of the unit

Landform(s): flats on till plains, swales on till plains

Slope gradient: 1 to 3 percent

Parent material: lacustrine deposits over till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .37

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silt loam	moderate	3.78 to 4.54 in	6.1 to 7.3
Bw -- 19 to 27 in	silt loam	moderate	1.41 to 1.82 in	6.6 to 7.8
2Bk -- 27 to 33 in	loam	moderate	0.89 to 1.12 in	7.4 to 8.4
2C -- 33 to 80 in	loam	moderate	7.03 to 8.90 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J31B--Arvilla-Sandberg complex, 2 to 6 percent slopes

Arvilla

Extent: 35 to 55 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 2 to 6 percent
Parent material: 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) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.36 in	6.1 to 7.3
Bw -- 9 to 14 in	sandy loam	moderately rapid	0.61 to 0.72 in	6.6 to 7.3
2Bk -- 14 to 48 in	gravelly sand	very rapid	0.68 to 1.69 in	7.4 to 8.4
2C -- 48 to 80 in	gravelly sand	very rapid	0.64 to 1.59 in	7.4 to 8.4

Sandberg

Extent: 30 to 50 percent of the unit
Landform(s): hills on outwash plains
Slope gradient: 2 to 6 percent
Parent material: 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	gravelly sandy loam	very rapid	0.39 to 1.02 in	6.1 to 7.8
Bk -- 8 to 32 in	very gravelly sand	very rapid	0.48 to 1.44 in	7.4 to 8.4
C -- 32 to 80 in	gravelly sand	very rapid	0.96 to 2.88 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J32A--Bigstone silty clay loam, depressional, 0 to 1 percent slopes

Bigstone, depressional

Extent: 70 to 90 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.77 to 2.17 in	7.4 to 8.4
A -- 10 to 30 in	silty clay loam	moderate	3.61 to 4.42 in	7.4 to 8.4
Cg -- 30 to 80 in	loam	moderate	7.50 to 9.50 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J34B--Byrne-Buse complex, 2 to 6 percent slopes

Byrne

Extent: 35 to 55 percent of the unit

Landform(s): hills on till plains

Slope gradient: 2 to 6 percent

Parent material: lacustrine deposits over 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) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silt loam	moderate	2.36 to 2.76 in	6.1 to 7.3
Bw -- 10 to 23 in	silt loam	moderate	2.21 to 2.86 in	6.1 to 7.3
Bk -- 23 to 28 in	silt loam	moderate	0.87 to 1.13 in	7.4 to 8.4
2Bk -- 28 to 40 in	loam	moderate	1.83 to 2.32 in	7.4 to 8.4
2C -- 40 to 80 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

Buse

Extent: 25 to 45 percent of the unit

Landform(s): hills on till plains

Slope gradient: 3 to 6 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.34 to 1.73 in	7.4 to 8.4
Bk -- 8 to 40 in	loam	moderate	4.84 to 6.13 in	7.4 to 8.4
C -- 40 to 60 in	loam	moderate	2.95 to 3.74 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J35B--Hokans-Buse complex, 2 to 6 percent slopes

Hokans

Extent: 45 to 65 percent of the unit

Landform(s): hills on moraines, hills on till plains

Slope gradient: 2 to 6 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	loam	moderate	2.99 to 3.29 in	6.1 to 7.3
Bw -- 15 to 22 in	loam	moderate	1.20 to 1.35 in	6.1 to 7.3
Bk -- 22 to 40 in	loam	moderate	2.72 to 3.44 in	7.4 to 8.4
C -- 40 to 80 in	loam	moderately slow	5.96 to 7.56 in	7.4 to 8.4

Buse

Extent: 10 to 20 percent of the unit

Landform(s): hills on moraines, hills on till plains

Slope gradient: 2 to 6 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.34 to 1.73 in	7.4 to 8.4
Bk -- 8 to 40 in	loam	moderate	4.84 to 6.13 in	7.4 to 8.4
C -- 40 to 60 in	loam	moderate	2.95 to 3.74 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J36C2--Buse-Barnes complex 6 to 12 percent slopes, moderately eroded

Buse, moderately eroded

Extent: 35 to 55 percent of the unit

Landform(s): hills on till plains

Slope gradient: 6 to 12 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.54 to 1.99 in	7.4 to 8.4
Bk -- 9 to 34 in	loam	moderate	3.72 to 4.71 in	7.4 to 8.4
C -- 34 to 80 in	loam	moderate	6.91 to 8.75 in	7.4 to 8.4

Barnes, moderately eroded

Extent: 10 to 30 percent of the unit

Landform(s): hills on till plains

Slope gradient: 6 to 12 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	loam	moderate	1.77 to 2.36 in	6.1 to 7.3
Bw -- 10 to 22 in	loam	moderate	1.83 to 2.32 in	6.1 to 7.3
Bk -- 22 to 42 in	loam	moderate	3.01 to 3.81 in	7.4 to 8.4
C -- 42 to 80 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J37D2--Langhei-Barnes complex, 12 to 20 percent slopes, moderately eroded

Langhei, moderately eroded

Extent: 50 to 70 percent of the unit

Landform(s): hills on moraines

Slope gradient: 12 to 20 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	loam	moderate	1.00 to 1.30 in	6.6 to 8.4
Bk -- 6 to 15 in	loam	moderate	1.36 to 1.72 in	7.4 to 8.4
C -- 15 to 60 in	loam	moderate	6.73 to 8.53 in	7.4 to 8.4

Barnes, moderately eroded

Extent: 10 to 20 percent of the unit

Landform(s): hills on moraines

Slope gradient: 12 to 20 percent

Parent material: 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	loam	moderate	1.77 to 2.36 in	6.1 to 7.3
Bw -- 10 to 22 in	loam	moderate	1.83 to 2.32 in	6.1 to 7.3
Bk -- 22 to 42 in	loam	moderate	3.01 to 3.81 in	7.4 to 8.4
C -- 42 to 80 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J38B--Zell-Eckman complex, 2 to 6 percent slopes

Zell

Extent: 30 to 55 percent of the unit

Landform(s): hills on moraines

Slope gradient: 2 to 6 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .49

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silt loam	moderate	1.87 to 2.17 in	6.6 to 8.4
Bk -- 10 to 43 in	silt loam	moderate	4.96 to 6.61 in	7.4 to 8.4
C -- 43 to 80 in	silt loam	moderate	5.55 to 7.40 in	7.4 to 8.4

Eckman

Extent: 30 to 50 percent of the unit

Landform(s): hills on moraines

Slope gradient: 2 to 6 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silt loam	moderate	3.29 to 3.59 in	6.6 to 7.3
Bw -- 15 to 32 in	silt loam	moderate	2.88 to 3.72 in	6.6 to 7.8
Bk -- 32 to 42 in	silt loam	moderate	2.05 to 2.25 in	7.4 to 8.4
C -- 42 to 80 in	silt loam	moderate	7.56 to 8.31 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J38C2--Zell-Eckman complex, 6 to 12 percent slopes, moderately eroded

Zell, moderately eroded

Extent: 35 to 55 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .49

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	silt loam	moderate	1.72 to 1.99 in	6.6 to 8.4
Bk -- 9 to 28 in	silt loam	moderate	2.83 to 3.78 in	7.4 to 8.4
C -- 28 to 80 in	silt loam	moderate	7.80 to 10.39 in	7.4 to 9.0

Eckman, moderately eroded

Extent: 10 to 30 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .43

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silt loam	moderate	1.73 to 1.89 in	6.6 to 7.3
Bw -- 8 to 31 in	silt loam	moderate	3.95 to 5.11 in	6.6 to 7.8
Bk -- 31 to 50 in	silt loam	moderate	3.78 to 4.16 in	7.4 to 8.4
C -- 50 to 80 in	silt loam	moderate	5.98 to 6.58 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J41A--Urness mucky silty clay loam, depressional, 0 to 1 percent slopes

Urness, depressional

<p><i>Extent:</i> 70 to 90 percent of the unit</p> <p><i>Landform(s):</i> depressions on moraines, depressions on lake plains, depressions on till plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> lacustrine deposits over till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> frequent</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 4L</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer):</i> .24</p> <p><i>Land capability, nonirrigated:</i> 3w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> B/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	mucky silty clay loam	moderate	1.63 to 2.17 in	7.4 to 8.4
Cg -- 9 to 32 in	mucky silt loam	moderate	3.65 to 5.02 in	7.4 to 8.4
2Cg -- 32 to 80 in	silty clay loam	moderate	7.20 to 9.13 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J42C--Sandberg-Arvilla complex, 6 to 12 percent slopes

Sandberg

<i>Extent:</i> 50 to 70 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> hills on outwash plains	<i>Wind erodibility group (WEG):</i> 5
<i>Slope gradient:</i> 6 to 12 percent	<i>Wind erodibility index (WEI):</i> 56
<i>Parent material:</i> outwash	<i>Kw factor (surface layer)</i> .17
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 6s
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> A
<i>Drainage class:</i> excessively drained	<i>Potential for frost action:</i> low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	gravelly sandy loam	very rapid	0.49 to 1.28 in	6.1 to 7.8
Bk -- 10 to 22 in	gravelly sand	very rapid	0.24 to 0.73 in	7.4 to 8.4
C -- 22 to 80 in	gravelly sand	very rapid	1.16 to 3.47 in	7.4 to 8.4

Arvilla

<i>Extent:</i> 25 to 35 percent of the unit	<i>Soil loss tolerance (T factor):</i> 2
<i>Landform(s):</i> hills on outwash plains	<i>Wind erodibility group (WEG):</i> 3
<i>Slope gradient:</i> 6 to 12 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> outwash	<i>Kw factor (surface layer)</i> .15
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 4e
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> A
<i>Drainage class:</i> somewhat excessively drained	<i>Potential for frost action:</i> low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.36 in	6.1 to 7.3
Bw -- 9 to 14 in	sandy loam	moderately rapid	0.61 to 0.72 in	6.6 to 7.3
2Bk -- 14 to 48 in	gravelly sand	very rapid	0.68 to 1.69 in	7.4 to 8.4
2C -- 48 to 80 in	gravelly sand	very rapid	0.64 to 1.59 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J46B--Byrne silt loam, 2 to 4 percent slopes

Byrne

Extent: 75 to 95 percent of the unit

Landform(s): hills on till plains

Slope gradient: 2 to 4 percent

Parent material: lacustrine deposits over 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) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silt loam	moderate	1.57 to 1.89 in	6.1 to 7.3
Bw -- 8 to 23 in	silt loam	moderate	2.54 to 3.59 in	6.1 to 7.3
Bk -- 23 to 28 in	silt loam	moderate	0.87 to 1.23 in	7.4 to 8.4
2Bk -- 28 to 72 in	loam	moderate	6.61 to 8.38 in	7.4 to 8.4
2C -- 72 to 80 in	loam	moderate	1.18 to 1.50 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J48A--Bigstone and Parnell soils, ponded, 0 to 1 percent slopes

Bigstone, ponded

<p><i>Extent:</i> 0 to 85 percent of the unit</p> <p><i>Landform(s):</i> depressions on moraines, depressions on lake plains, depressions on till plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> lacustrine deposits</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> frequent</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .24</p> <p><i>Land capability, nonirrigated</i> 8w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> B/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 18 in	silty clay loam	moderate	3.26 to 3.98 in	7.4 to 8.4
A2 -- 18 to 48 in	silty clay loam	moderate	5.39 to 6.58 in	7.4 to 8.4
2Cg -- 48 to 80 in	loam	moderate	4.78 to 6.06 in	7.4 to 8.4

Parnell, ponded

<p><i>Extent:</i> 0 to 85 percent of the unit</p> <p><i>Landform(s):</i> depressions on moraines, depressions on lake plains, depressions on till plains</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> frequent</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 8</p> <p><i>Wind erodibility index (WEI):</i> 0</p> <p><i>Kw factor (surface layer)</i> .32</p> <p><i>Land capability, nonirrigated</i> 8w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> C/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1,A2 -- 0 to 22 in	silty clay loam	moderately slow	3.97 to 4.85 in	6.1 to 7.3
Btg -- 22 to 55 in	silty clay	slow	4.30 to 5.29 in	6.1 to 7.3
BCg -- 55 to 80 in	silty clay loam	slow	3.97 to 4.71 in	6.6 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J50A--Balaton-Tara complex, 1 to 3 percent slopes

Balaton

Extent: 35 to 55 percent of the unit

Landform(s): knolls on lake plains

Slope gradient: 1 to 3 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	loam	moderate	2.60 to 2.86 in	7.4 to 8.4
ABk,Bk -- 13 to 31 in	loam	moderate	2.72 to 3.44 in	7.4 to 8.4
C -- 31 to 80 in	loam	moderate	7.32 to 9.28 in	7.4 to 8.4

Tara

Extent: 25 to 45 percent of the unit

Landform(s): flats on lake plains, swales on lake plains

Slope gradient: 1 to 3 percent

Parent material: lacustrine deposits over till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 22 in	silty clay loam	moderate	4.41 to 5.29 in	6.1 to 7.3
Bw -- 22 to 38 in	silt loam	moderate	2.74 to 3.55 in	6.6 to 7.8
2C -- 38 to 80 in	loam	moderate	6.26 to 7.93 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J51A--Bearden-Quam, depressional, complex, 0 to 2 percent slopes

Bearden

Extent: 50 to 70 percent of the unit
Landform(s): rims on depressions on lake plains, flats on lake plains, drainageways on lake plains
Slope gradient: 0 to 2 percent
Parent material: lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	silty clay loam	moderate	2.74 to 3.71 in	7.4 to 8.4
Bk -- 16 to 37 in	silt loam	moderate	3.34 to 4.59 in	7.4 to 8.4
Cg -- 37 to 80 in	stratified silt loam to silty clay loam	moderate	6.87 to 9.44 in	7.4 to 8.4

Quam, depressional

Extent: 20 to 40 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 28 in	silty clay loam	moderately slow	5.03 to 6.15 in	6.6 to 7.8
Bg -- 28 to 48 in	silty clay loam	moderately slow	3.21 to 4.42 in	6.6 to 7.8
2Cg -- 48 to 80 in	silty clay loam	moderately slow	4.46 to 6.06 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J52A--Rondell silty clay loam, 1 to 3 percent slopes

Rondell

Extent: 75 to 95 percent of the unit

Landform(s): knolls on lake plains

Slope gradient: 1 to 3 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	silty clay loam	moderate	1.72 to 1.99 in	6.6 to 8.4
Bk -- 9 to 30 in	silty clay loam	moderate	2.92 to 3.55 in	7.4 to 9.0
C -- 30 to 80 in	silty clay loam	moderate	7.00 to 8.50 in	7.4 to 8.4

J53A--Ortonville loam, 1 to 3 percent slopes

Ortonville

Extent: 75 to 95 percent of the unit

Landform(s): knolls on moraines

Slope gradient: 1 to 3 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.34 to 1.73 in	7.4 to 8.4
Bk -- 8 to 24 in	stratified sandy loam to loam to silt loam	moderate	2.10 to 2.91 in	7.4 to 8.4
C -- 24 to 80 in	stratified sandy loam to loam to silt loam	moderate	7.27 to 10.06 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J56A--Winger-Balaton-Parnell, depressional, complex, 0 to 3 percent slopes

Winger

Extent: 30 to 50 percent of the unit
Landform(s): rims on depressions on lake plains, flats on lake plains, drainageways on lake plains
Slope gradient: 0 to 2 percent
Parent material: lacustrine deposits over 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) .32
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	silty clay loam	moderate	1.28 to 1.56 in	7.4 to 8.4
Ak -- 7 to 22 in	silt loam	moderate	3.29 to 3.59 in	7.4 to 8.4
Bkg -- 22 to 27 in	silt loam	moderate	1.02 to 1.13 in	7.4 to 8.4
Cg1 -- 27 to 31 in	silt loam	moderate	0.79 to 0.87 in	7.4 to 8.4
2Cg2 -- 31 to 80 in	loam	moderately slow	7.32 to 9.28 in	7.4 to 8.4

Balaton

Extent: 20 to 40 percent of the unit
Landform(s): knolls on lake plains
Slope gradient: 1 to 3 percent
Parent material: till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	loam	moderate	2.60 to 2.86 in	7.4 to 8.4
ABk,Bk -- 13 to 31 in	loam	moderate	2.72 to 3.44 in	7.4 to 8.4
C -- 31 to 80 in	loam	moderate	7.32 to 9.28 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J56A--Winger-Balaton-Parnell, depressional, complex, 0 to 3 percent slopes

Parnell, depressional

Extent: 10 to 30 percent of the unit

Landform(s): depressions on lake plains

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits 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): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1,A2 -- 0 to 22 in	silty clay loam	moderately slow	3.97 to 4.85 in	6.1 to 7.3
Btg -- 22 to 55 in	silty clay	slow	4.30 to 5.29 in	6.1 to 7.3
BCg -- 55 to 80 in	silty clay loam	slow	3.97 to 4.71 in	6.6 to 8.4

J57A--Balaton loam, 1 to 3 percent slopes

Balaton

Extent: 75 to 95 percent of the unit

Landform(s): knolls on till plains

Slope gradient: 1 to 3 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	loam	moderate	2.60 to 2.86 in	7.4 to 8.4
ABk,Bk -- 13 to 31 in	loam	moderate	2.72 to 3.44 in	7.4 to 8.4
C -- 31 to 80 in	loam	moderate	7.32 to 9.28 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J58B--Torning-Egeland complex, 2 to 6 percent slopes

Torning

Extent: 35 to 55 percent of the unit

Landform(s): hills on outwash plains

Slope gradient: 2 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	fine sandy loam	moderately rapid	1.42 to 1.73 in	7.4 to 7.8
Bk -- 8 to 30 in	fine sandy loam	moderately rapid	3.97 to 4.85 in	7.4 to 8.4
C -- 30 to 80 in	fine sand	moderately rapid	4.50 to 9.50 in	7.4 to 8.4

Egeland

Extent: 30 to 50 percent of the unit

Landform(s): hills on outwash plains

Slope gradient: 2 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 7.3
Bw1,Bw2 -- 8 to 30 in	sandy loam	moderately rapid	2.65 to 3.09 in	6.1 to 7.3
Bw3 -- 30 to 35 in	loamy sand	moderately rapid	0.46 to 0.56 in	6.1 to 7.3
Bk -- 35 to 48 in	loamy fine sand	moderately rapid	1.17 to 1.43 in	7.4 to 8.4
C -- 48 to 80 in	loamy fine sand	moderately rapid	2.55 to 3.19 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J64A--Quam silty clay loam, 0 to 2 percent slopes

Quam

Extent: 80 to 95 percent of the unit

Landform(s): flats on till plains, drainageways on till plains

Slope gradient: 0 to 2 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	silty clay loam	moderately slow	1.63 to 1.99 in	6.6 to 7.8
A -- 9 to 60 in	silty clay loam	moderately slow	8.13 to 11.17 in	6.6 to 7.8
Bg -- 60 to 68 in	silty clay loam	moderately slow	1.32 to 1.82 in	6.6 to 7.8
2Cg -- 68 to 80 in	loam	moderately slow	1.65 to 2.24 in	7.4 to 8.4

J75A--Fordville loam, 0 to 2 percent slopes

Fordville

Extent: 80 to 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: 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): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .20

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	loam	moderate	1.18 to 1.30 in	6.1 to 7.3
Bw -- 6 to 24 in	loam	moderate	3.08 to 3.44 in	6.1 to 7.3
2C -- 24 to 80 in	gravelly loamy sand	very rapid	2.24 to 3.35 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J75B--Fordville loam, 2 to 6 percent slopes

Fordville

Extent: 80 to 90 percent of the unit

Landform(s): hills on outwash plains

Slope gradient: 2 to 6 percent

Parent material: 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): 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: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	loam	moderate	1.18 to 1.30 in	6.1 to 7.3
Bw -- 6 to 24 in	loam	moderate	3.08 to 3.44 in	6.1 to 7.3
2C -- 24 to 80 in	gravelly loamy sand	very rapid	2.24 to 3.35 in	7.4 to 8.4

J77A--Lamoure silty clay loam, 0 to 2 percent slopes, frequently flooded

Lamoure, frequently flooded

Extent: 75 to 95 percent of the unit

Landform(s): flats on flood plains

Slope gradient: 0 to 2 percent

Parent material: alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 5w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1,A2 -- 0 to 27 in	silty clay loam	moderate	4.89 to 5.98 in	7.4 to 8.4
Cg1 -- 27 to 34 in	silty clay loam	moderate	1.07 to 1.27 in	7.4 to 8.4
Cg2 -- 34 to 60 in	silt loam	moderate	5.20 to 5.72 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J101B--Hokans-Svea complex, 1 to 4 percent slopes

Hokans

Extent: 60 to 80 percent of the unit

Landform(s): hills on moraines

Slope gradient: 1 to 4 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	loam	moderate	2.99 to 3.29 in	6.1 to 7.3
Bw -- 15 to 22 in	loam	moderate	1.20 to 1.35 in	6.1 to 7.3
Bk -- 22 to 40 in	loam	moderate	2.72 to 3.44 in	7.4 to 8.4
C -- 40 to 80 in	loam	moderately slow	5.96 to 7.56 in	7.4 to 8.4

Svea

Extent: 15 to 25 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.3
Bw -- 10 to 21 in	loam	moderate	1.87 to 2.09 in	6.6 to 7.3
Bk -- 21 to 36 in	clay loam	moderate	2.24 to 2.84 in	7.4 to 8.4
C -- 36 to 60 in	loam	moderately slow	3.60 to 4.56 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J256A--Waubay silty clay loam, 1 to 3 percent slopes

Waubay

Extent: 65 to 85 percent of the unit

Landform(s): flats on lake plains

Slope gradient: 1 to 3 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 13 in	silty clay loam	moderate	2.34 to 2.86 in	6.1 to 7.3
Bw1,2 -- 13 to 24 in	silty clay loam	moderate	1.76 to 2.09 in	6.1 to 7.3
Bk1,2 -- 24 to 45 in	silt loam	moderate	3.34 to 3.96 in	7.4 to 8.4
C1 -- 45 to 60 in	silt loam	moderate	2.39 to 2.84 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J259C--Buse-Doland complex, 6 to 12 percent slopes

Buse, moderately eroded

Extent: 35 to 45 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	7.4 to 8.4
Bk1,Bk2 -- 8 to 40 in	loam	moderate	4.84 to 6.13 in	7.4 to 8.4
C -- 40 to 60 in	loam	moderately slow	2.95 to 3.74 in	7.4 to 8.4

Doland, moderately eroded

Extent: 25 to 35 percent of the unit

Landform(s): hills on moraines

Slope gradient: 6 to 12 percent

Parent material: lacustrine deposits over 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) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silt loam	moderate	1.89 to 2.20 in	6.1 to 7.3
BA,Bw1 -- 8 to 22 in	silt loam	moderate	2.41 to 3.12 in	6.1 to 7.3
2Bw2 -- 22 to 24 in	loam	moderate	0.30 to 0.37 in	6.6 to 7.3
2C1,2 -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

J260A--Colvin-Quam complex, depressional, 0 to 1 percent slopes

Colvin, depressional

Extent: 50 to 70 percent of the unit

Landform(s): depressions on lake plains

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.67 to 2.26 in	7.4 to 8.4
Bkg1,2 -- 10 to 30 in	silty clay loam	moderate	3.21 to 4.42 in	7.4 to 8.4
Cg -- 30 to 60 in	silty clay loam	moderate	4.79 to 6.58 in	7.4 to 8.4

Quam, depressional

Extent: 20 to 40 percent of the unit

Landform(s): depressions on lake plains

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderately slow	1.77 to 2.17 in	6.6 to 7.3
A1,A2 -- 10 to 45 in	silty clay loam	moderately slow	5.61 to 6.66 in	6.6 to 7.3
Cg -- 45 to 80 in	silty clay loam	moderately slow	5.61 to 6.66 in	6.6 to 7.8

Map Unit Description (MN)

Chippewa County, Minnesota

J261A--Perella-Colvin complex, 0 to 2 percent slopes

Perella

Extent: 40 to 60 percent of the unit
Landform(s): flats on lake plains, drainageways on lake plains
Slope gradient: 0 to 2 percent
Parent material: lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	silty clay loam	moderately slow	1.63 to 1.99 in	6.6 to 7.8
A -- 9 to 14 in	silty clay loam	moderately slow	0.82 to 1.13 in	6.6 to 7.8
Bg1,2 -- 14 to 24 in	silty clay loam	moderately slow	1.57 to 2.17 in	6.6 to 7.8
Cg1,2,3 -- 24 to 60 in	silty clay loam	moderately slow	5.02 to 6.81 in	7.4 to 8.4

Colvin

Extent: 30 to 50 percent of the unit
Landform(s): rims on depressions on lake plains, flats on lake plains, drainageways on lake plains
Slope gradient: 0 to 2 percent
Parent material: lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	silty clay loam	moderate	1.67 to 2.26 in	7.4 to 8.4
Bk -- 10 to 25 in	silt loam	moderate	2.46 to 3.38 in	7.4 to 8.4
Cg -- 25 to 80 in	stratified silt loam to silty clay loam	moderate	8.76 to 12.04 in	7.4 to 8.4

Map Unit Description (MN)

Chippewa County, Minnesota

M-W--Water, miscellaneous

Water, miscellaneous

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

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

Water

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

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