Map Unit Description (MN)

Benton 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]

1002A--Udorthents, wet substratum, 0 to 2 percent slopes

Udorthents, wet substratum

Extent: 100 percent of the unit
Landform(s): moraines, outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: variable soil material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:

Texture	Permeability	Available water capacity	pH

1010--Pits, quarry

Pits, quarry

Extent: 100 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 50 percent
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
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

1011A--Fordum-Winterfield complex, 0 to 2 percent slopes, frequently flooded

Fordum, frequently flooded

Extent: 50 to 80 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .20
Land capability, nonirrigated 5w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	fine sandy loam	moderately rapid	0.99 to 1.28 in	5.1 to 7.3
Cg -- 7 to 28 in	sandy loam	moderately rapid	2.09 to 5.01 in	5.1 to 7.3
2Cg -- 28 to 80 in	sand	rapid	1.04 to 5.20 in	5.6 to 7.3

Winterfield, frequently flooded

Extent: 20 to 40 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: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .05
Land capability, nonirrigated 5w
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.6 to 7.3
C1,C2 -- 8 to 20 in	sand	rapid	0.61 to 1.34 in	5.6 to 7.3
C3,C4,C5 -- 20 to 80 in	sand	rapid	2.39 to 5.98 in	5.6 to 7.3

1013A--Seelyeville and Cathro soils, ponded, 0 to 1 percent slopes

Seelyeville, ponded

Extent: 0 to 95 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2,Oa5 -- 10 to 80 in	muck	moderately rapid	24.53 to 31.54 in	

Cathro, ponded, milaca catena

Extent: 0 to 95 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 31 in	muck	moderately rapid	10.89 to 14.00 in	
A -- 31 to 37 in	loam	moderate	1.18 to 1.42 in	5.6 to 6.5
BC -- 37 to 62 in	fine sandy loam	moderately rapid	2.02 to 3.02 in	5.6 to 7.3
BCd -- 62 to 80 in	fine sandy loam	moderately rapid	0.89 to 1.42 in	5.6 to 7.3

1020A--Bowstring and Fluvaquents, loamy, 0 to 2 percent slopes, frequently flooded

Bowstring, frequently flooded

Extent: 25 to 75 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic materials containing strata of alluvium
Restrictive feature(s): greater than 60 inches
Flooding: frequent
Ponding: none
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 38 in	muck	moderately rapid	13.37 to 17.19 in	
Cg -- 38 to 47 in	stratified fine sand to loamy fine sand	rapid	0.43 to 0.87 in	5.6 to 7.3
Oa' -- 47 to 80 in	muck	moderately rapid	11.57 to 14.88 in	

Fluvaquents, frequently flooded, loamy

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 6 in	mucky silt loam	moderate	1.18 to 1.42 in	5.6 to 7.3
Cg -- 6 to 80 in	stratified silt loam to gravelly loamy coarse sand	rapid	4.44 to 16.28 in	5.6 to 7.3

1023A--Seelyeville and Markey soils, ponded, 0 to 1 percent slopes

Seelyeville, ponded

Extent: 0 to 100 percent of the unit
Landform(s): lake plains, outwash plains, stream terraces
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 15 in	muck	moderately rapid	5.24 to 6.73 in	
Oa2,Oa5 -- 15 to 80 in	muck	moderately rapid	22.74 to 29.23 in	

Markey, ponded

Extent: 0 to 100 percent of the unit
Landform(s): lake plains, outwash plains, stream terraces
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material over outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 27 in	muck	moderately rapid	9.51 to 12.22 in	
A -- 27 to 32 in	loamy sand	rapid	0.28 to 0.57 in	5.6 to 7.3
Cg -- 32 to 80 in	sand	rapid	1.92 to 3.36 in	5.6 to 7.3

1025A--Fluvaquents and Udifluvents, loamy, 0 to 2 percent slopes, frequently flooded

Fluvaquents, frequently flooded, loamy

Extent: 25 to 80 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 5w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 6 in	silt loam	moderate	1.18 to 1.42 in	5.6 to 7.3
Cg --	6 to 80 in	stratified silt loam to gravelly loamy coarse sand	rapid	4.44 to 16.28 in	5.6 to 7.3

Udifluvents, frequently flooded, loamy

Extent: 10 to 50 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: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 4w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 6 in	silt loam	moderate	1.18 to 1.42 in	5.6 to 7.3
Cg --	6 to 80 in	stratified silt loam to gravelly loamy coarse sand	rapid	4.44 to 16.28 in	5.6 to 7.3

1052B--Udorthents, loamy-Rock outcrop complex, 1 to 6 percent slopes

Udorthents, loamy

Extent: 40 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 6 percent
Parent material: loamy drift over bedrock
Restrictive feature(s): lithic bedrock at 20 to 80 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
C -- 4 to 22 in	fine sandy loam	moderately rapid	1.99 to 3.44 in	5.1 to 6.5
2R -- 22 to 80 in	unweathered bedrock	impermeable		

Rock outcrop

Extent: 10 to 60 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 6 percent
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
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*

C2A--Adolph mucky silty clay loam, depressional, 0 to 1 percent slopes, stony

Adolph, depressional, stony

Extent: 80 to 95 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: loamy mantled dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .20
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1 -- 0 to 5 in	mucky silty clay loam	moderately slow	1.07 to 1.18 in	5.1 to 6.5
A2 -- 5 to 13 in	silt loam	moderate	1.65 to 1.89 in	5.1 to 6.5
Bg -- 13 to 32 in	silt loam	moderate	3.21 to 4.16 in	5.1 to 7.3
2BC -- 32 to 44 in	fine sandy loam	slow	0.98 to 1.46 in	5.6 to 7.3
2BCd -- 44 to 80 in	fine sandy loam	very slow	1.79 to 2.87 in	5.6 to 7.3

C4A--Cebana silt loam, 0 to 1 percent slopes, stony

Cebana, stony

Extent: 85 to 95 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: loamy mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
Eg,E/B -- 8 to 27 in	silt loam	moderate	3.28 to 4.24 in	5.1 to 6.5
2Bt -- 27 to 49 in	loam	moderate	1.95 to 3.90 in	5.1 to 7.3
2BCd -- 49 to 80 in	fine sandy loam	very slow	1.56 to 2.49 in	5.6 to 7.3

C5C--Milaca fine sandy loam, 8 to 15 percent slopes, stony

Milaca, stony

Extent: 70 to 90 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 8 to 15 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
E -- 4 to 15 in	fine sandy loam	moderately rapid	1.21 to 2.09 in	5.1 to 6.5
E/B,Bt1,Bt2 -- 15 to 42 in	fine sandy loam	moderately rapid	2.72 to 4.07 in	5.1 to 6.5
BCd -- 42 to 80 in	fine sandy loam	very slow	1.89 to 3.02 in	5.6 to 7.3

C5E--Milaca fine sandy loam, 15 to 30 percent slopes, stony

Milaca, stony

Extent: 70 to 90 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 15 to 30 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
E -- 4 to 15 in	fine sandy loam	moderately rapid	1.21 to 2.09 in	5.1 to 6.5
E/B,Bt1,Bt2 -- 15 to 42 in	fine sandy loam	moderately rapid	2.72 to 4.07 in	5.1 to 6.5
BCd -- 42 to 80 in	fine sandy loam	very slow	1.89 to 3.02 in	5.6 to 7.3

C8A--Brennyville, wet-Cebana complex, 0 to 3 percent slopes, stony

Brennyville, wet, stony

Extent: 68 to 98 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 1 to 3 percent
Parent material: silt mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
B/E -- 8 to 11 in	silt loam	moderate	0.63 to 0.69 in	5.1 to 6.5
Bt1 -- 11 to 21 in	silt loam	moderate	1.67 to 2.17 in	5.1 to 6.5
2Bt2,2Bt3 -- 21 to 38 in	fine sandy loam	moderately rapid	1.56 to 3.12 in	5.1 to 7.3
2BC -- 38 to 45 in	fine sandy loam	slow	0.54 to 0.80 in	5.6 to 7.3
2BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

Cebana, stony

Extent: 5 to 30 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 0 to 2 percent
Parent material: loamy mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
Eg,E/B -- 8 to 27 in	silt loam	moderate	3.28 to 4.24 in	5.1 to 6.5
2Bt -- 27 to 49 in	loam	moderate	1.95 to 3.90 in	5.1 to 7.3
2BCd -- 49 to 80 in	fine sandy loam	very slow	1.56 to 2.49 in	5.6 to 7.3

C10B--Brennyville complex, 1 to 6 percent slopes, stony

Brennyville, stony

Extent: 40 to 85 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 3 to 6 percent
Parent material: silt mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
B/E -- 8 to 11 in	silt loam	moderate	0.63 to 0.69 in	5.1 to 6.5
Bt1 -- 11 to 21 in	silt loam	moderate	1.67 to 2.17 in	5.1 to 6.5
2Bt2,2Bt3 -- 21 to 38 in	fine sandy loam	moderately rapid	1.56 to 3.12 in	5.1 to 7.3
2BC -- 38 to 45 in	fine sandy loam	slow	0.54 to 0.80 in	5.6 to 7.3
2BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

Brennyville, wet, stony

Extent: 5 to 35 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 1 to 3 percent
Parent material: silt mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 3w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
B/E -- 8 to 11 in	silt loam	moderate	0.63 to 0.69 in	5.1 to 6.5
Bt1 -- 11 to 21 in	silt loam	moderate	1.67 to 2.17 in	5.1 to 6.5
2Bt2,2Bt3 -- 21 to 38 in	fine sandy loam	moderately rapid	1.56 to 3.12 in	5.1 to 7.3
2BC -- 38 to 45 in	fine sandy loam	slow	0.54 to 0.80 in	5.6 to 7.3
2BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

C10B--Brennyville complex, 1 to 6 percent slopes, stony

C14A--Cathro, Twig, and Adolph soils, ponded, 0 to 1 percent slopes

Adolph, ponded, stony

Extent: 0 to 100 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: loamy mantled dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .20
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A1 -- 0 to 5 in	mucky silty clay loam	moderately slow	1.07 to 1.18 in	5.1 to 6.5
A2 -- 5 to 13 in	silt loam	moderate	1.65 to 1.89 in	5.1 to 6.5
Bg -- 13 to 32 in	silt loam	moderate	3.21 to 4.16 in	5.1 to 7.3
2BC -- 32 to 44 in	fine sandy loam	slow	0.98 to 1.46 in	5.6 to 7.3
2BCd -- 44 to 80 in	fine sandy loam	very slow	1.79 to 2.87 in	5.6 to 7.3

Cathro, ponded, milaca catena

Extent: 0 to 100 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 31 in	muck	moderately rapid	10.89 to 14.00 in	
A -- 31 to 37 in	loam	moderate	1.18 to 1.42 in	5.6 to 6.5
BC -- 37 to 62 in	fine sandy loam	slow	2.02 to 3.02 in	5.6 to 7.3
BCd -- 62 to 80 in	fine sandy loam	very slow	0.89 to 1.42 in	5.6 to 7.3

C14A--Cathro, Twig, and Adolph soils, ponded, 0 to 1 percent slopes

Twig, ponded

Extent: 0 to 100 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: thin highly decomposed organic material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 8w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	3.5 to 6.0
A -- 10 to 16 in	loam	moderate	1.07 to 1.51 in	3.5 to 6.0
Eg -- 16 to 21 in	fine sandy loam	moderately rapid	0.61 to 1.04 in	3.5 to 6.0
2Bg,2Bw -- 21 to 44 in	sandy loam	moderately rapid	2.09 to 4.41 in	3.5 to 6.0
2BC -- 44 to 52 in	fine sandy loam	slow	0.63 to 0.94 in	5.6 to 7.3
2BCd -- 52 to 80 in	fine sandy loam	very slow	1.40 to 2.24 in	5.6 to 7.3

C23B--Antigo-Chetek complex, 2 to 8 percent slopes

Antigo

Extent: 45 to 80 percent of the unit
Landform(s): outwash plains, stream terraces
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): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	silt loam	moderate	0.75 to 0.87 in	5.1 to 6.5
E -- 4 to 12 in	silt loam	moderate	1.50 to 1.73 in	5.1 to 6.5
B/E -- 12 to 18 in	silt loam	moderate	1.20 to 1.39 in	5.1 to 6.5
2Bt -- 18 to 30 in	fine sandy loam	moderate	1.06 to 2.13 in	5.1 to 6.5
3C -- 30 to 80 in	gravelly coarse sand	very rapid	0.50 to 3.00 in	5.1 to 6.5

Chetek

Extent: 15 to 40 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 2 to 8 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): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 0.92 in	5.1 to 6.0
E -- 5 to 12 in	fine sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt1 -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2Bt2 -- 18 to 25 in	gravelly loamy coarse sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2BC,2C -- 25 to 80 in	gravelly coarse sand	very rapid	0.55 to 3.28 in	5.1 to 6.5

C26A--Foglake silt loam, 0 to 2 percent slopes

Foglake

Extent: 75 to 90 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 2 percent
Parent material: silty glaciolacustrine
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .24
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.73 to 1.89 in	5.1 to 7.3
Eg -- 8 to 16 in	silt loam	moderate	1.41 to 1.82 in	5.1 to 7.3
Btg,BCg -- 16 to 47 in	silty clay loam	slow	2.46 to 6.14 in	5.1 to 7.3
Cg -- 47 to 80 in	silty clay loam	moderately slow	5.95 to 7.28 in	7.4 to 8.4

C28A--Cathro and Twig soils, depressional, 0 to 1 percent slopes

Cathro, depressional, milaca catena

Extent: 0 to 95 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 31 in	muck	moderately rapid	10.89 to 14.00 in	
A -- 31 to 37 in	loam	moderate	1.18 to 1.42 in	5.6 to 6.5
BC -- 37 to 62 in	fine sandy loam	slow	2.02 to 3.02 in	5.6 to 7.3
BCd -- 62 to 80 in	fine sandy loam	very slow	0.89 to 1.42 in	5.6 to 7.3

Twig, depressional

Extent: 0 to 95 percent of the unit
Landform(s): interdrumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: thin highly decomposed organic material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	3.5 to 6.0
A -- 10 to 16 in	loam	moderate	1.07 to 1.51 in	3.5 to 6.0
Eg -- 16 to 21 in	fine sandy loam	moderately rapid	0.61 to 1.04 in	3.5 to 6.0
2Bg,2Bw -- 21 to 44 in	sandy loam	moderately rapid	2.09 to 4.41 in	3.5 to 6.0
2BC -- 44 to 52 in	fine sandy loam	slow	0.63 to 0.94 in	5.6 to 7.3
2BCd -- 52 to 80 in	fine sandy loam	very slow	1.40 to 2.24 in	5.6 to 7.3

C28A--Cathro and Twig soils, depressional, 0 to 1 percent slopes

C36A--Nokasippi loamy fine sand, depressional, 0 to 1 percent slopes

Nokasippi, depressional

Extent: 75 to 95 percent of the unit
Landform(s): drainageways on interdrumlins, depressions on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 10 in	loamy fine sand	rapid	0.98 to 1.18 in	4.5 to 6.5
Bg1 -- 10 to 21 in	loamy sand	rapid	0.66 to 1.32 in	4.5 to 7.3
Bg2 -- 21 to 32 in	loamy sand	moderately rapid	1.21 to 1.98 in	4.5 to 7.3
2Bg3 -- 32 to 41 in	sandy loam	slow	0.00 to 0.72 in	4.5 to 7.3
2BCd -- 41 to 80 in	fine sandy loam	very slow	1.95 to 3.12 in	5.6 to 7.3

C37C--Braham loamy fine sand, 6 to 12 percent slopes

Braham

Extent: 75 to 95 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 6 to 12 percent
Parent material: sandy outwash 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 9 in	loamy fine sand	rapid	0.91 to 1.09 in	5.6 to 7.3
E --	9 to 28 in	loamy fine sand	rapid	1.51 to 1.89 in	5.6 to 7.3
2Bt --	28 to 39 in	sandy clay loam	moderate	1.65 to 1.98 in	5.1 to 7.3
2C --	39 to 60 in	loam	moderate	3.13 to 3.76 in	7.4 to 8.4

C38B--Grasston fine sandy loam, terrace, 2 to 6 percent slopes

Grasston, terrace

Extent: 55 to 85 percent of the unit
Landform(s): lake plains, terraces
Slope gradient: 2 to 6 percent
Parent material: silty and clayey glaciolacustrine 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) .15
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	fine sandy loam	moderately rapid	1.27 to 1.63 in	5.1 to 6.5
B/E -- 9 to 14 in	silty clay loam	moderately slow	0.56 to 1.13 in	5.1 to 7.3
Bt1,Bt2 -- 14 to 42 in	silty clay	slow	2.24 to 5.59 in	5.1 to 7.3
Bk -- 42 to 66 in	silt loam	moderate	4.32 to 5.28 in	7.4 to 8.4
C -- 66 to 80 in	silt loam	moderate	2.34 to 3.03 in	7.4 to 8.4

C39A--Foglake fine sandy loam, terrace, 0 to 2 percent slopes

Foglake, terrace

Extent: 50 to 75 percent of the unit
Landform(s): lake plains, terraces
Slope gradient: 0 to 2 percent
Parent material: silty and clayey glaciolacustrine 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) .15
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	fine sandy loam	moderately rapid	1.10 to 1.42 in	5.1 to 6.5
Eg -- 8 to 16 in	loam	moderate	1.41 to 1.82 in	5.1 to 7.3
Btg,BCg -- 16 to 47 in	silty clay loam	slow	2.46 to 6.14 in	5.1 to 7.3
Cg -- 47 to 80 in	silty clay loam	moderately slow	5.95 to 7.28 in	7.4 to 8.4

C42B--Sartell, till substratum-Bushville complex, 1 to 6 percent slopes

Sartell, till substratum

Extent: 65 to 95 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 6 percent
Parent material: eolian sands over till
Restrictive feature(s): dense material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sand	rapid	0.35 to 0.43 in	5.1 to 6.0
Bw -- 4 to 33 in	fine sand	rapid	1.75 to 2.91 in	5.1 to 6.0
C -- 33 to 66 in	fine sand	rapid	1.65 to 2.98 in	5.6 to 7.3
2BCd -- 66 to 80 in	fine sandy loam	very slow	0.69 to 1.10 in	5.6 to 7.3

C46A--Foglake loam, terrace, 0 to 2 percent slopes

Foglake, terrace

Extent: 50 to 75 percent of the unit
Landform(s): lake plains, terraces
Slope gradient: 0 to 2 percent
Parent material: silty and clayey glaciolacustrine 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 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 8 in	loam	moderate	1.42 to 1.81 in	5.1 to 6.5
Eg --	8 to 16 in	loam	moderate	1.41 to 1.82 in	5.1 to 7.3
Btg,BCg --	16 to 47 in	silty clay loam	slow	2.46 to 6.14 in	5.1 to 7.3
Cg --	47 to 80 in	silty clay loam	moderately slow	5.95 to 7.28 in	7.4 to 8.4

C48A--Ronneby loam, 0 to 2 percent slopes, stony

Ronneby, stony

Extent: 75 to 95 percent of the unit
Landform(s): interdrumlins
Slope gradient: 0 to 2 percent
Parent material: dense till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.71 to 0.91 in	5.1 to 6.5
E -- 4 to 12 in	fine sandy loam	moderately rapid	0.94 to 1.50 in	5.1 to 6.5
Bt1,Bt2 -- 12 to 33 in	fine sandy loam	moderate	2.55 to 4.04 in	5.6 to 6.5
Bt3 -- 33 to 45 in	fine sandy loam	moderately slow	0.94 to 1.42 in	5.6 to 7.3
BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

C49A--Antigo silt loam, 0 to 2 percent slopes

Antigo

Extent: 55 to 93 percent of the unit
Landform(s): outwash plains, stream terraces
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): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 4 in	silt loam	moderate	0.75 to 0.87 in	5.1 to 6.5
E --	4 to 12 in	silt loam	moderate	1.50 to 1.73 in	5.1 to 6.5
B/E --	12 to 18 in	silt loam	moderate	1.20 to 1.39 in	5.1 to 6.5
2Bt --	18 to 30 in	fine sandy loam	moderate	1.06 to 2.13 in	5.1 to 6.5
3C --	30 to 80 in	gravelly coarse sand	very rapid	0.50 to 3.00 in	5.1 to 6.5

C51D--Emmert-St. Francis complex, 6 to 25 percent slopes

Emmert

Extent: 50 to 80 percent of the unit
Landform(s): outwash plains, terraces
Slope gradient: 6 to 25 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	rapid	0.16 to 0.24 in	5.1 to 6.5
E -- 2 to 12 in	gravelly loamy sand	rapid	0.49 to 1.48 in	5.1 to 6.5
Bt -- 12 to 37 in	gravelly loamy coarse sand	rapid	0.76 to 2.27 in	5.1 to 6.5
C -- 37 to 80 in	very gravelly coarse sand	very rapid	0.43 to 2.57 in	5.1 to 6.5

St. francis

Extent: 20 to 50 percent of the unit
Landform(s): terraces, outwash plains
Slope gradient: 3 to 8 percent
Parent material: loamy glaciofluvial deposits over sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.83 to 1.06 in	5.1 to 6.5
E -- 6 to 11 in	fine sandy loam	moderately rapid	0.51 to 0.87 in	5.1 to 6.5
Bt1 -- 11 to 16 in	loam	moderate	0.46 to 0.97 in	5.1 to 6.5
2Bt2 -- 16 to 20 in	gravelly loamy coarse sand	rapid	0.04 to 0.35 in	5.1 to 6.5
2C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

C52B--Waukon fine sandy loam, dense substratum, 2 to 6 percent slopes

Waukon, dense substratum

Extent: 65 to 90 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 6 percent
Parent material: loamy till over dense loamy till
Restrictive feature(s): dense material at 60 to 80 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 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap	-- 0 to 8 in	fine sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 7.3
E	-- 8 to 12 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.6 to 7.3
BE,Bt	-- 12 to 43 in	loam	moderate	4.67 to 5.91 in	6.1 to 8.4
Bk	-- 43 to 64 in	loam	moderate	3.19 to 4.04 in	7.4 to 8.4
2BCd	-- 64 to 80 in	fine sandy loam	very slow	0.79 to 1.26 in	5.6 to 7.3

C53C--Pomroy loamy fine sand, 6 to 12 percent slopes

Pomroy

Extent: 75 to 95 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 6 to 12 percent
Parent material: sandy mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	loamy fine sand	rapid	0.47 to 0.71 in	5.1 to 6.5
E -- 6 to 22 in	loamy fine sand	rapid	0.81 to 1.78 in	5.1 to 6.5
2Bt -- 22 to 31 in	sandy loam	moderately rapid	0.91 to 1.45 in	5.1 to 6.5
2BC -- 31 to 41 in	sandy loam	slow	0.79 to 1.18 in	5.6 to 7.3
2BCd -- 41 to 60 in	fine sandy loam	very slow	0.94 to 1.51 in	5.6 to 7.3

C54B--Chetek-Mahtomedi complex, 2 to 6 percent slopes

Chetek

Extent: 45 to 70 percent of the unit
Landform(s): outwash plains, stream terraces, moraines
Slope gradient: 2 to 6 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 0.92 in	5.1 to 6.0
E -- 5 to 12 in	fine sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt1 -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2Bt2 -- 18 to 25 in	gravelly loamy coarse sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2BC,2C -- 25 to 80 in	gravelly coarse sand	very rapid	0.55 to 3.28 in	5.1 to 6.5

Mahtomedi

Extent: 10 to 40 percent of the unit
Landform(s): outwash plains, stream terraces, moraines
Slope gradient: 2 to 6 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
E -- 4 to 9 in	gravelly coarse sandy loam	moderately rapid	0.20 to 0.77 in	5.1 to 6.5
Bw -- 9 to 20 in	gravelly coarse sand	very rapid	0.11 to 0.66 in	5.1 to 6.5
BC,C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

C54C--Chetek-Mahtomedi complex, 6 to 12 percent slopes

Chetek

Extent: 45 to 75 percent of the unit
Landform(s): outwash plains, stream terraces, moraines
Slope gradient: 6 to 12 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 0.92 in	5.1 to 6.0
E -- 5 to 12 in	fine sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt1 -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2Bt2 -- 18 to 25 in	gravelly loamy coarse sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2BC,2C -- 25 to 80 in	gravelly coarse sand	very rapid	0.55 to 3.28 in	5.1 to 6.5

Mahtomedi

Extent: 10 to 40 percent of the unit
Landform(s): outwash plains, stream terraces, moraines
Slope gradient: 6 to 12 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
E -- 4 to 9 in	gravelly coarse sandy loam	moderately rapid	0.20 to 0.77 in	5.1 to 6.5
Bw -- 9 to 20 in	gravelly coarse sand	very rapid	0.11 to 0.66 in	5.1 to 6.5
BC,C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

C55A--Watab loamy fine sand, 0 to 2 percent slopes

Watab

Extent: 75 to 95 percent of the unit
Landform(s): flats on interdrumlins
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy fine sand	rapid	0.79 to 0.94 in	5.1 to 6.0
E,Bw -- 8 to 23 in	loamy fine sand	rapid	0.90 to 1.35 in	5.1 to 6.5
2Bt -- 23 to 33 in	fine sandy loam	moderately rapid	0.82 to 1.23 in	5.1 to 6.5
2BC -- 33 to 45 in	fine sandy loam	slow	0.94 to 1.42 in	5.6 to 7.3
2BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

C56A--Langola loamy fine sand, 0 to 2 percent slopes

Langola, wet

Extent: 80 to 95 percent of the unit
Landform(s): drumlins
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loamy fine sand	rapid	1.50 to 1.80 in	5.1 to 6.5
Bw -- 15 to 31 in	loamy sand	rapid	1.29 to 1.61 in	5.1 to 6.5
2Bt -- 31 to 39 in	sandy loam	moderate	0.79 to 1.18 in	5.1 to 6.5
2BC -- 39 to 43 in	fine sandy loam	slow	0.31 to 0.47 in	5.6 to 7.3
2BCd -- 43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

C57A--Warman loam, depressional, 0 to 1 percent slopes

Warman, depressional

Extent: 70 to 95 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 1 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 16 in	loam	moderate	2.74 to 3.55 in	5.1 to 6.5
Bg -- 16 to 34 in	loam	moderate	1.77 to 3.37 in	5.1 to 6.5
2Cg -- 34 to 60 in	gravelly coarse sand	very rapid	0.26 to 1.56 in	5.1 to 6.5

C58A--Ogilvie loam, 0 to 2 percent slopes

Ogilvie

Extent: 65 to 90 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.18 to 1.50 in	5.1 to 6.5
E -- 8 to 18 in	loam	moderate	1.54 to 2.25 in	5.1 to 6.5
Bt -- 18 to 31 in	loam	moderate	1.95 to 2.86 in	5.1 to 6.5
2C -- 31 to 60 in	gravelly coarse sand	very rapid	0.29 to 1.72 in	5.1 to 6.5

C59A--Pierz sandy loam, 0 to 2 percent slopes

Pierz

Extent: 75 to 95 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 2 percent
Parent material: loamy glaciofluvial deposits over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 10 in	sandy loam	moderately rapid	1.28 to 1.67 in	5.1 to 6.5
Bt --	10 to 23 in	sandy loam	moderately rapid	2.08 to 2.60 in	5.1 to 6.5
2Bt --	23 to 27 in	gravelly sandy loam	moderately rapid	0.69 to 0.87 in	5.1 to 6.5
2C --	27 to 60 in	gravelly coarse sand	very rapid	0.65 to 1.31 in	5.1 to 6.5

C60A--Bushville fine sand, 0 to 2 percent slopes

Bushville

Extent: 75 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sand	rapid	0.69 to 0.98 in	5.1 to 6.5
E -- 10 to 24 in	loamy fine sand	rapid	0.85 to 1.28 in	5.1 to 6.5
2Bt1 -- 24 to 30 in	fine sandy loam	moderate	0.59 to 0.89 in	5.1 to 6.5
2Bt2 -- 30 to 42 in	sandy loam	moderately slow	0.98 to 1.46 in	5.1 to 7.3
2BCd -- 42 to 80 in	fine sandy loam	very slow	1.89 to 3.02 in	5.6 to 7.3

C62C--Sartell fine sand, till substratum, 6 to 12 percent slopes

Sartell, till substratum

Extent: 65 to 95 percent of the unit
Landform(s): drumlins
Slope gradient: 6 to 12 percent
Parent material: eolian sands over dense till
Restrictive feature(s): dense material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 4 in	fine sand	rapid	0.35 to 0.43 in	5.1 to 6.0
Bw --	4 to 33 in	fine sand	rapid	1.75 to 2.91 in	5.1 to 6.0
C --	33 to 66 in	fine sand	rapid	1.65 to 2.98 in	5.6 to 7.3
2BCd --	66 to 80 in	fine sandy loam	very slow	0.69 to 1.10 in	5.6 to 7.3

C63B--Kost, till substratum-Langola complex, 1 to 6 percent slopes

Kost, till substratum

Extent: 45 to 70 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 60 to 80 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	loamy fine sand	rapid	1.28 to 1.70 in	5.1 to 7.3
Bw -- 14 to 33 in	fine sand	rapid	1.13 to 1.51 in	5.1 to 7.3
BC -- 33 to 66 in	fine sand	rapid	1.65 to 2.31 in	5.6 to 7.3
2BCd -- 66 to 80 in	fine sandy loam	very slow	0.69 to 1.10 in	5.6 to 7.3

Langola

Extent: 30 to 60 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loamy fine sand	rapid	1.50 to 1.80 in	5.1 to 6.5
Bw -- 15 to 31 in	loamy sand	rapid	1.29 to 1.61 in	5.1 to 6.5
2Bt -- 31 to 39 in	sandy loam	moderate	0.79 to 1.18 in	5.1 to 6.5
2BC -- 39 to 43 in	fine sandy loam	slow	0.31 to 0.47 in	5.6 to 7.3
2BCd -- 43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

C64A--Mora fine sandy loam, 1 to 3 percent slopes, stony

Mora, stony

Extent: 65 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 3 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	fine sandy loam	moderately rapid	1.10 to 1.42 in	5.1 to 6.5
E -- 8 to 12 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt -- 12 to 36 in	fine sandy loam	moderately rapid	2.40 to 4.56 in	5.1 to 6.5
BC -- 36 to 46 in	fine sandy loam	slow	0.82 to 1.23 in	5.6 to 7.3
BCd -- 46 to 80 in	fine sandy loam	very slow	1.69 to 2.71 in	5.6 to 7.3

C64B--Mora fine sandy loam, 3 to 5 percent slopes, stony

Mora, stony

Extent: 70 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 3 to 5 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	fine sandy loam	moderately rapid	1.10 to 1.42 in	5.1 to 6.5
E -- 8 to 12 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt -- 12 to 36 in	fine sandy loam	moderately rapid	2.40 to 4.56 in	5.1 to 6.5
BC -- 36 to 46 in	fine sandy loam	slow	0.82 to 1.23 in	5.6 to 7.3
BCd -- 46 to 80 in	fine sandy loam	very slow	1.69 to 2.71 in	5.6 to 7.3

C65A--Parent loam, 0 to 2 percent slopes, stony

Parent, stony

Extent: 65 to 95 percent of the unit
Landform(s): flats on interdrumlins
Slope gradient: 0 to 2 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.6 to 7.3
Bg -- 7 to 28 in	fine sandy loam	moderate	2.50 to 3.55 in	5.6 to 7.3
BC -- 28 to 40 in	fine sandy loam	slow	0.98 to 1.46 in	5.6 to 7.3
BCd -- 40 to 80 in	fine sandy loam	very slow	1.99 to 3.18 in	5.6 to 7.3

C66A--St. Francis fine sandy loam, 0 to 2 percent slopes

St. francis

Extent: 75 to 95 percent of the unit
Landform(s): stream terraces, outwash plains, moraines
Slope gradient: 0 to 2 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.83 to 1.06 in	5.1 to 6.5
E -- 6 to 11 in	fine sandy loam	moderately rapid	0.51 to 0.87 in	5.1 to 6.5
Bt1 -- 11 to 16 in	loam	moderate	0.46 to 0.97 in	5.1 to 6.5
2Bt2 -- 16 to 20 in	gravelly loamy coarse sand	rapid	0.04 to 0.35 in	5.1 to 6.5
2C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

C67B--Bushville complex, 1 to 6 percent slopes

Bushville

Extent: 55 to 70 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sand	rapid	0.69 to 0.98 in	5.1 to 6.5
E -- 10 to 24 in	loamy fine sand	rapid	0.85 to 1.28 in	5.1 to 6.5
2Bt1 -- 24 to 30 in	fine sandy loam	moderate	0.59 to 0.89 in	5.1 to 6.5
2Bt2 -- 30 to 42 in	sandy loam	moderately slow	0.98 to 1.46 in	5.1 to 7.3
2BCd -- 42 to 80 in	fine sandy loam	very slow	1.89 to 3.02 in	5.6 to 7.3

Bushville, wet

Extent: 25 to 40 percent of the unit
Landform(s): drumlins
Slope gradient: 0 to 3 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sand	rapid	0.69 to 0.98 in	5.1 to 6.5
E -- 10 to 24 in	loamy fine sand	rapid	0.85 to 1.28 in	5.1 to 6.5
2Bt1 -- 24 to 30 in	fine sandy loam	moderate	0.59 to 0.89 in	5.1 to 6.5
2Bt2 -- 30 to 42 in	sandy loam	moderately slow	0.98 to 1.46 in	5.1 to 7.3
2BCd -- 42 to 80 in	fine sandy loam	very slow	1.89 to 3.02 in	5.6 to 7.3

C68B--Milaca fine sandy loam, 3 to 6 percent slopes, stony

Milaca, stony

Extent: 75 to 95 percent of the unit
Landform(s): drumlins
Slope gradient: 3 to 6 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	fine sandy loam	moderately rapid	1.18 to 1.63 in	5.1 to 6.5
E -- 9 to 13 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt -- 13 to 43 in	fine sandy loam	moderately rapid	2.99 to 4.49 in	5.1 to 6.5
BCd -- 43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

C68C--Milaca fine sandy loam, 6 to 12 percent slopes, stony

Milaca, stony

Extent: 70 to 90 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 6 to 12 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
E -- 4 to 15 in	fine sandy loam	moderately rapid	1.21 to 2.09 in	5.1 to 6.5
E/B,Bt1,Bt2 -- 15 to 42 in	fine sandy loam	moderately rapid	2.72 to 4.07 in	5.1 to 6.5
BCd -- 42 to 80 in	fine sandy loam	very slow	1.89 to 3.02 in	5.6 to 7.3

C68E--Milaca fine sandy loam, 12 to 25 percent slopes, stony

Milaca, stony

Extent: 70 to 90 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 12 to 25 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
E -- 4 to 15 in	fine sandy loam	moderately rapid	1.21 to 2.09 in	5.1 to 6.5
E/B,Bt1,Bt2 -- 15 to 42 in	fine sandy loam	moderately rapid	2.72 to 4.07 in	5.1 to 6.5
BCd -- 42 to 80 in	fine sandy loam	very slow	1.89 to 3.02 in	5.6 to 7.3

C69B--Milaca, stony-St. Francis complex, 3 to 8 percent slopes

Milaca, stony

Extent: 40 to 75 percent of the unit
Landform(s): end moraines, moraines
Slope gradient: 3 to 8 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	fine sandy loam	moderately rapid	1.27 to 1.63 in	5.1 to 6.5
E -- 9 to 13 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt -- 13 to 43 in	fine sandy loam	moderately rapid	2.99 to 4.49 in	5.1 to 6.5
BCd -- 43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

St. francis

Extent: 20 to 50 percent of the unit
Landform(s): end moraines, moraines
Slope gradient: 3 to 8 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.83 to 1.06 in	5.1 to 6.5
E -- 6 to 11 in	fine sandy loam	moderately rapid	0.51 to 0.87 in	5.1 to 6.5
Bt1 -- 11 to 16 in	loam	moderate	0.46 to 0.97 in	5.1 to 6.5
2Bt2 -- 16 to 20 in	gravelly loamy coarse sand	rapid	0.04 to 0.35 in	5.1 to 6.5
2C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

C69C--Milaca, stony-St. Francis complex, 8 to 15 percent slopes

Milaca, stony

Extent: 25 to 75 percent of the unit
Landform(s): end moraines, moraines
Slope gradient: 8 to 15 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 9 in	fine sandy loam	moderately rapid	1.27 to 1.63 in	5.1 to 6.5
E --	9 to 13 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt --	13 to 43 in	fine sandy loam	moderately rapid	2.99 to 4.49 in	5.1 to 6.5
BCd --	43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

St. francis

Extent: 15 to 45 percent of the unit
Landform(s): end moraines, moraines
Slope gradient: 8 to 15 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 6 in	fine sandy loam	moderately rapid	0.83 to 1.06 in	5.1 to 6.5
E --	6 to 11 in	fine sandy loam	moderately rapid	0.51 to 0.87 in	5.1 to 6.5
Bt1 --	11 to 16 in	loam	moderate	0.46 to 0.97 in	5.1 to 6.5
2Bt2 --	16 to 20 in	gravelly loamy coarse sand	rapid	0.04 to 0.35 in	5.1 to 6.5
2C --	20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

C70B--St. Francis-Mahtomedi complex, 2 to 6 percent slopes

St. francis

Extent: 60 to 90 percent of the unit
Landform(s): outwash plains, stream terraces, moraines
Slope gradient: 2 to 6 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.83 to 1.06 in	5.1 to 6.5
E -- 6 to 11 in	fine sandy loam	moderately rapid	0.51 to 0.87 in	5.1 to 6.5
Bt1 -- 11 to 16 in	loam	moderate	0.46 to 0.97 in	5.1 to 6.5
2Bt2 -- 16 to 20 in	gravelly loamy coarse sand	rapid	0.04 to 0.35 in	5.1 to 6.5
2C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

Mahtomedi

Extent: 10 to 40 percent of the unit
Landform(s): outwash plains, stream terraces, moraines
Slope gradient: 2 to 6 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
E -- 4 to 9 in	gravelly coarse sandy loam	moderately rapid	0.20 to 0.77 in	5.1 to 6.5
Bw -- 9 to 20 in	gravelly coarse sand	very rapid	0.11 to 0.66 in	5.1 to 6.5
BC,C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

C70C--St. Francis-Mahtomedi complex, 6 to 12 percent slopes

St. francis

Extent: 50 to 85 percent of the unit
Landform(s): outwash plains, stream terraces, moraines
Slope gradient: 6 to 12 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 6 in	fine sandy loam	moderately rapid	0.83 to 1.06 in	5.1 to 6.5
E -- 6 to 11 in	fine sandy loam	moderately rapid	0.51 to 0.87 in	5.1 to 6.5
Bt1 -- 11 to 16 in	loam	moderate	0.46 to 0.97 in	5.1 to 6.5
2Bt2 -- 16 to 20 in	gravelly loamy coarse sand	rapid	0.04 to 0.35 in	5.1 to 6.5
2C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

Mahtomedi

Extent: 15 to 50 percent of the unit
Landform(s): outwash plains, stream terraces, moraines
Slope gradient: 6 to 12 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	fine sandy loam	moderately rapid	0.55 to 0.71 in	5.1 to 6.5
E -- 4 to 9 in	gravelly coarse sandy loam	moderately rapid	0.20 to 0.77 in	5.1 to 6.5
Bw -- 9 to 20 in	gravelly coarse sand	very rapid	0.11 to 0.66 in	5.1 to 6.5
BC,C -- 20 to 80 in	gravelly coarse sand	very rapid	0.60 to 3.59 in	5.1 to 6.5

C71A--Blomford loamy fine sand, 0 to 2 percent slopes

Blomford

Extent: 80 to 90 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: sandy outwash 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loamy fine sand	rapid	0.72 to 1.09 in	5.1 to 7.3
E,E&Bt -- 9 to 33 in	fine sand	rapid	1.20 to 1.92 in	5.1 to 7.3
2Btg -- 33 to 42 in	fine sandy loam	moderate	1.18 to 1.54 in	5.1 to 7.3
2Cg -- 42 to 60 in	fine sandy loam	moderate	1.77 to 2.66 in	6.1 to 8.4

C72B--Langola complex, 1 to 6 percent slopes

Langola

Extent: 50 to 85 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 6 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loamy fine sand	rapid	1.50 to 1.80 in	5.1 to 6.5
Bw -- 15 to 31 in	loamy sand	rapid	1.29 to 1.61 in	5.1 to 6.5
2Bt -- 31 to 39 in	sandy loam	moderate	0.79 to 1.18 in	5.1 to 6.5
2BC -- 39 to 43 in	fine sandy loam	slow	0.31 to 0.47 in	5.6 to 7.3
2BCd -- 43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

Langola, wet

Extent: 15 to 35 percent of the unit
Landform(s): drumlins
Slope gradient: 0 to 3 percent
Parent material: sandy outwash over dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loamy fine sand	rapid	1.50 to 1.80 in	5.1 to 6.5
Bw -- 15 to 31 in	loamy sand	rapid	1.29 to 1.61 in	5.1 to 6.5
2Bt -- 31 to 39 in	sandy loam	moderate	0.79 to 1.18 in	5.1 to 6.5
2BC -- 39 to 43 in	fine sandy loam	slow	0.31 to 0.47 in	5.6 to 7.3
2BCd -- 43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

C73A--Mora loam, 1 to 3 percent slopes, stony

Mora, stony

Extent: 65 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 3 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.42 to 1.81 in	5.1 to 6.5
E -- 8 to 12 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt -- 12 to 36 in	fine sandy loam	moderately rapid	2.40 to 4.56 in	5.1 to 6.5
BC -- 36 to 46 in	fine sandy loam	slow	0.82 to 1.23 in	5.6 to 7.3
BCd -- 46 to 80 in	fine sandy loam	very slow	1.69 to 2.71 in	5.6 to 7.3

C74A--Parent loam, depressional, 0 to 1 percent slopes, stony

Parent, depressional, stony

Extent: 70 to 95 percent of the unit
Landform(s): depressions on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.6 to 7.3
Bg -- 7 to 28 in	fine sandy loam	moderate	2.50 to 3.55 in	5.6 to 7.3
BC -- 28 to 40 in	fine sandy loam	slow	0.98 to 1.46 in	5.6 to 7.3
BCd -- 40 to 80 in	fine sandy loam	very slow	1.99 to 3.18 in	5.6 to 7.3

C75A--Seelyeville and Cathro soils, milaca catena, depressional, 0 to 1 percent slopes

Seelyeville, depressional

Extent: 0 to 95 percent of the unit
Landform(s): depressions on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 --	0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2,Oa5 --	10 to 80 in	muck	moderately rapid	24.53 to 31.54 in	

Cathro, depressional, milaca catena

Extent: 0 to 95 percent of the unit
Landform(s): depressions on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material over dense loamy till
Restrictive feature(s): dense material at 40 to 80 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa --	0 to 31 in	muck	moderately rapid	10.89 to 14.00 in	
A --	31 to 37 in	loam	moderate	1.18 to 1.42 in	5.6 to 6.5
BC --	37 to 62 in	fine sandy loam	slow	2.02 to 3.02 in	5.6 to 7.3
BCd --	62 to 80 in	fine sandy loam	very slow	0.89 to 1.42 in	5.6 to 7.3

C77A--Novak loam, 0 to 2 percent slopes

Novak

Extent: 65 to 80 percent of the unit
Landform(s): outwash plains, stream terraces
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): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 8 in	loam	moderate	1.18 to 1.50 in	5.1 to 6.5
B/E --	8 to 15 in	loam	moderate	1.06 to 1.56 in	5.1 to 6.5
Bt1 --	15 to 26 in	loam	moderate	1.65 to 2.43 in	5.1 to 6.5
2Bt2 --	26 to 30 in	sandy loam	moderate	0.35 to 0.67 in	5.1 to 6.5
3C --	30 to 60 in	gravelly coarse sand	very rapid	0.30 to 1.80 in	5.1 to 6.5

C77B--Novak loam, 2 to 6 percent slopes

Novak

Extent: 70 to 90 percent of the unit
Landform(s): outwash plains, stream terraces
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): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loam	moderate	1.06 to 1.35 in	5.1 to 6.5
B/E -- 7 to 17 in	loam	moderate	1.48 to 2.17 in	5.1 to 6.5
Bt1 -- 17 to 23 in	loam	moderate	0.89 to 1.30 in	5.1 to 6.5
2Bt2 -- 23 to 26 in	sandy loam	moderate	0.28 to 0.54 in	5.1 to 6.5
3C -- 26 to 60 in	gravelly coarse sand	very rapid	0.34 to 2.03 in	5.1 to 6.5

C78A--Warman loam, 0 to 2 percent slopes

Warman

Extent: 70 to 90 percent of the unit
Landform(s): outwash plains, stream terraces
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): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 9 in	loam	moderate	1.36 to 1.99 in	5.1 to 6.5
AB --	9 to 12 in	loam	moderate	0.28 to 0.52 in	5.1 to 6.5
Bg --	12 to 33 in	loam	moderate	1.91 to 4.04 in	5.1 to 6.5
2C --	33 to 60 in	gravelly coarse sand	very rapid	0.27 to 1.61 in	5.1 to 6.5

C79A--Mora loam, 1 to 3 percent slopes, very stony

Mora, very stony

Extent: 70 to 90 percent of the unit
Landform(s): drumlins
Slope gradient: 1 to 3 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loam	moderate	1.42 to 1.81 in	5.1 to 6.5
E -- 8 to 12 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt -- 12 to 36 in	fine sandy loam	moderately rapid	2.40 to 4.56 in	5.1 to 6.5
BC -- 36 to 46 in	fine sandy loam	slow	0.82 to 1.23 in	5.6 to 7.3
BCd -- 46 to 80 in	fine sandy loam	very slow	1.69 to 2.71 in	5.6 to 7.3

C80A--Parent loam, depressional, 0 to 1 percent slopes, very stony

Parent, depressional, very stony

Extent: 70 to 95 percent of the unit
Landform(s): depressions on interdrumlins
Slope gradient: 0 to 1 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
A --	0 to 7 in	loam	moderate	1.42 to 1.56 in	5.6 to 7.3
Bg --	7 to 28 in	fine sandy loam	moderate	2.50 to 3.55 in	5.6 to 7.3
BC --	28 to 40 in	fine sandy loam	slow	0.98 to 1.46 in	5.6 to 7.3
BCd --	40 to 80 in	fine sandy loam	very slow	1.99 to 3.18 in	5.6 to 7.3

C82A--Ronneby loam, 0 to 2 percent slopes, very stony

Ronneby, very stony

Extent: 75 to 95 percent of the unit
Landform(s): interdrumlins
Slope gradient: 0 to 2 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .32
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	loam	moderate	0.71 to 0.91 in	5.1 to 6.5
E -- 4 to 12 in	fine sandy loam	moderately rapid	0.94 to 1.50 in	5.1 to 6.5
Bt1,Bt2 -- 12 to 33 in	fine sandy loam	moderate	2.55 to 4.04 in	5.6 to 6.5
Bt3 -- 33 to 45 in	fine sandy loam	moderately slow	0.94 to 1.42 in	5.6 to 7.3
BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

C83A--Parent loam, 0 to 2 percent slopes, very stony

Parent, very stony

Extent: 70 to 95 percent of the unit
Landform(s): flats on interdrumlins
Slope gradient: 0 to 2 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 48
Kw factor (surface layer) .32
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.6 to 7.3
Bg -- 7 to 28 in	fine sandy loam	moderate	2.50 to 3.55 in	5.6 to 7.3
BC -- 28 to 40 in	fine sandy loam	slow	0.98 to 1.46 in	5.6 to 7.3
BCd -- 40 to 80 in	fine sandy loam	very slow	1.99 to 3.18 in	5.6 to 7.3

C84B--Brennyville complex, 1 to 6 percent slopes, very stony

Brennyville, very stony

Extent: 40 to 85 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 3 to 6 percent
Parent material: silt mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
B/E -- 8 to 11 in	silt loam	moderate	0.63 to 0.69 in	5.1 to 6.5
Bt1 -- 11 to 21 in	silt loam	moderate	1.67 to 2.17 in	5.1 to 6.5
2Bt2,2Bt3 -- 21 to 38 in	fine sandy loam	moderately rapid	1.56 to 3.12 in	5.1 to 7.3
2BC -- 38 to 45 in	fine sandy loam	slow	0.54 to 0.80 in	5.6 to 7.3
2BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

Brennyville, wet, very stony

Extent: 5 to 35 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 1 to 3 percent
Parent material: silt mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
B/E -- 8 to 11 in	silt loam	moderate	0.63 to 0.69 in	5.1 to 6.5
Bt1 -- 11 to 21 in	silt loam	moderate	1.67 to 2.17 in	5.1 to 6.5
2Bt2,2Bt3 -- 21 to 38 in	fine sandy loam	moderately rapid	1.56 to 3.12 in	5.1 to 7.3
2BC -- 38 to 45 in	fine sandy loam	slow	0.54 to 0.80 in	5.6 to 7.3
2BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

C84B--Brennyville complex, 1 to 6 percent slopes, very stony

C89A--Cathro and Seelyeville soils, grasston catena, depressional, 0 to 1 percent slopes

Cathro, depressional, grasston catena

Extent: 0 to 95 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material over clayey glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa --	0 to 31 in	muck	moderately rapid	10.89 to 14.00 in	
A --	31 to 37 in	loam	moderate	1.18 to 1.30 in	5.6 to 6.5
Cg1 --	37 to 62 in	silty clay	slow	2.02 to 5.04 in	7.4 to 8.4
Cg2 --	62 to 80 in	silty clay	slow	1.42 to 3.54 in	7.4 to 8.4

Seelyeville, depressional

Extent: 0 to 95 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 --	0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2,Oa5 --	10 to 80 in	muck	moderately rapid	24.53 to 31.54 in	

C90A--Brennyville-Cebana complex, 0 to 3 percent slopes, very stony

Brennyville, wet, very stony

Extent: 68 to 98 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 1 to 3 percent
Parent material: silt mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .28
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
B/E -- 8 to 11 in	silt loam	moderate	0.63 to 0.69 in	5.1 to 6.5
Bt1 -- 11 to 21 in	silt loam	moderate	1.67 to 2.17 in	5.1 to 6.5
2Bt2,2Bt3 -- 21 to 38 in	fine sandy loam	moderately rapid	1.56 to 3.12 in	5.1 to 7.3
2BC -- 38 to 45 in	fine sandy loam	slow	0.54 to 0.80 in	5.6 to 7.3
2BCd -- 45 to 80 in	fine sandy loam	very slow	1.75 to 2.80 in	5.6 to 7.3

Cebana, very stony

Extent: 5 to 30 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 0 to 1 percent
Parent material: loamy mantled dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 6s
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	silt loam	moderate	1.50 to 1.89 in	5.1 to 6.5
Eg,E/B -- 8 to 27 in	silt loam	moderate	3.28 to 4.24 in	5.1 to 6.5
2Bt -- 27 to 49 in	loam	moderate	1.95 to 3.90 in	5.1 to 7.3
2BCd -- 49 to 80 in	fine sandy loam	very slow	1.56 to 2.49 in	5.6 to 7.3

C91B--Milaca, stony-Chetek complex, 3 to 8 percent slopes

Milaca, stony

Extent: 30 to 70 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 3 to 8 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 9 in	fine sandy loam	moderately rapid	1.27 to 1.63 in	5.1 to 6.5
E --	9 to 13 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt --	13 to 43 in	fine sandy loam	moderately rapid	2.99 to 4.49 in	5.1 to 6.5
BCd --	43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

Chetek

Extent: 20 to 50 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 3 to 8 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 5 in	fine sandy loam	moderately rapid	0.72 to 0.92 in	5.1 to 6.0
E --	5 to 12 in	fine sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt1 --	12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2Bt2 --	18 to 25 in	gravelly loamy coarse sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2BC,2C --	25 to 80 in	gravelly coarse sand	very rapid	0.55 to 3.28 in	5.1 to 6.5

C91C--Milaca, stony-Chetek complex, 8 to 15 percent slopes

Milaca, stony

Extent: 30 to 70 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 8 to 15 percent
Parent material: dense loamy till
Restrictive feature(s): dense material at 40 to 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 9 in	fine sandy loam	moderately rapid	1.27 to 1.63 in	5.1 to 6.5
E --	9 to 13 in	fine sandy loam	moderately rapid	0.43 to 0.75 in	5.1 to 6.5
B/E,Bt --	13 to 43 in	fine sandy loam	moderately rapid	2.99 to 4.49 in	5.1 to 6.5
BCd --	43 to 80 in	fine sandy loam	very slow	1.85 to 2.96 in	5.6 to 7.3

Chetek

Extent: 20 to 50 percent of the unit
Landform(s): drumlins, moraines
Slope gradient: 8 to 15 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 5 in	fine sandy loam	moderately rapid	0.72 to 0.92 in	5.1 to 6.0
E --	5 to 12 in	fine sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt1 --	12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2Bt2 --	18 to 25 in	gravelly loamy coarse sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2BC,2C --	25 to 80 in	gravelly coarse sand	very rapid	0.55 to 3.28 in	5.1 to 6.5

C122D--Emmert-Chetek complex, 8 to 25 percent slopes

Emmert

Extent: 30 to 60 percent of the unit
Landform(s): eskers, outwash plains, stream terraces
Slope gradient: 8 to 25 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	fine sandy loam	rapid	0.16 to 0.24 in	5.1 to 6.5
E -- 2 to 12 in	gravelly loamy sand	rapid	0.49 to 1.48 in	5.1 to 6.5
Bt -- 12 to 37 in	gravelly loamy coarse sand	rapid	0.76 to 2.27 in	5.1 to 6.5
C -- 37 to 80 in	very gravelly coarse sand	very rapid	0.43 to 2.57 in	5.1 to 6.5

Chetek

Extent: 30 to 40 percent of the unit
Landform(s): eskers, outwash plains, stream terraces
Slope gradient: 8 to 25 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.72 to 0.92 in	5.1 to 6.0
E -- 5 to 12 in	fine sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt1 -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2Bt2 -- 18 to 25 in	gravelly loamy coarse sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2BC,2C -- 25 to 80 in	gravelly coarse sand	very rapid	0.55 to 3.28 in	5.1 to 6.5

C125A--Hulligan loam, depressional, 0 to 1 percent slopes

Hulligan, depressional

Extent: 70 to 85 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 1 percent
Parent material: loamy glaciofluvial deposits and/or sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .24
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 9 in	loam	moderate	1.54 to 1.99 in	5.1 to 6.5
Bw -- 9 to 17 in	loam	moderate	0.79 to 1.50 in	5.1 to 6.5
Bg -- 17 to 27 in	loam	moderate	0.92 to 1.94 in	5.1 to 6.5
2Cg -- 27 to 60 in	gravelly coarse sand	very rapid	0.33 to 1.96 in	5.6 to 6.5

C126B--Balmlake-Rosy complex, 1 to 6 percent slopes

Balmlake

Extent: 50 to 80 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 6 percent
Parent material: loamy glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	very fine sandy loam	moderate	1.57 to 2.17 in	5.1 to 6.5
B/E -- 10 to 15 in	loam	moderate	0.41 to 0.97 in	5.1 to 6.5
Bt -- 15 to 41 in	loam	moderate	1.82 to 5.72 in	5.1 to 7.3
2BC,2C -- 41 to 80 in	stratified loamy very fine sand to silty clay loam	rapid	3.12 to 8.57 in	5.1 to 7.3

Rosy

Extent: 15 to 30 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 4 percent
Parent material: loamy glaciolacustrine 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .37
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	very fine sandy loam	moderate	1.45 to 1.99 in	5.1 to 6.5
E -- 9 to 20 in	loamy very fine sand	moderately rapid	0.99 to 2.09 in	5.1 to 6.5
Bt -- 20 to 54 in	loam	moderate	2.71 to 7.45 in	5.1 to 7.3
2C -- 54 to 80 in	stratified loamy very fine sand to silty clay loam	rapid	2.08 to 5.72 in	5.1 to 7.3

C128A--Talmoon loam, 0 to 2 percent slopes

Talmoon

Extent: 80 to 95 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 2 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 7 in	loam	moderate	1.20 to 1.49 in	5.1 to 6.5
Eg --	7 to 12 in	fine sandy loam	moderately rapid	0.61 to 0.85 in	5.1 to 6.5
Btg --	12 to 32 in	loam	moderate	2.41 to 3.61 in	5.6 to 7.3
Cg --	32 to 80 in	loam	moderate	5.76 to 8.65 in	7.4 to 8.4

C129A--Longsiding fine sandy loam, terrace, 0 to 2 percent slopes

Longsiding, terrace

Extent: 50 to 75 percent of the unit
Landform(s): lake plains, terraces
Slope gradient: 0 to 2 percent
Parent material: silty and clayey glaciolacustrine 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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .15
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:

		Texture	Permeability	Available water capacity	pH
Ap --	0 to 9 in	fine sandy loam	moderately rapid	1.27 to 1.63 in	5.1 to 6.5
B/E --	9 to 12 in	silty clay loam	moderately slow	0.30 to 0.61 in	5.1 to 7.3
Bt --	12 to 35 in	silty clay	slow	1.86 to 4.65 in	5.1 to 7.3
Bk --	35 to 45 in	silt loam	moderate	1.77 to 2.17 in	7.4 to 8.4
C --	45 to 80 in	silt loam	moderate	5.96 to 7.71 in	7.4 to 8.4

D1B--Anoka and Zimmerman soils, terrace, 2 to 6 percent slopes

Anoka, terrace

Extent: 30 to 60 percent of the unit
Landform(s): hills on stream terraces
Slope gradient: 2 to 6 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 10 in	loamy fine sand	rapid	1.28 to 1.57 in	5.1 to 6.5
E,E&Bt --	10 to 60 in	fine sand	rapid	3.00 to 6.00 in	5.1 to 7.3

Zimmerman, terrace

Extent: 30 to 60 percent of the unit
Landform(s): hills on stream terraces
Slope gradient: 2 to 4 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 9 in	fine sand	rapid	0.63 to 0.81 in	5.1 to 6.5
E,E&Bt --	9 to 60 in	fine sand	rapid	3.05 to 5.08 in	5.1 to 7.3

D1C--Anoka and Zimmerman soils, terrace, 6 to 12 percent slopes

Anoka, terrace

Extent: 35 to 65 percent of the unit
Landform(s): hills on stream terraces
Slope gradient: 6 to 12 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 10 in	loamy fine sand	rapid	1.28 to 1.57 in	5.1 to 6.5
E,E&Bt --	10 to 60 in	fine sand	rapid	3.00 to 6.00 in	5.1 to 7.3

Zimmerman, terrace

Extent: 35 to 65 percent of the unit
Landform(s): hills on stream terraces
Slope gradient: 6 to 12 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap --	0 to 9 in	fine sand	rapid	0.63 to 0.81 in	5.1 to 6.5
E,E&Bt --	9 to 60 in	fine sand	rapid	3.05 to 5.08 in	5.1 to 7.3

D2A--Elkriver fine sandy loam, 0 to 2 percent slopes, rarely flooded

Elkriver, rarely flooded

Extent: 90 to 100 percent of the unit
Landform(s): flats on benches on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: rare
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.57 to 1.97 in	5.1 to 7.3
A1,A2,A3 -- 10 to 35 in	fine sandy loam	moderately rapid	3.78 to 5.04 in	5.1 to 7.3
Bw -- 35 to 39 in	fine sandy loam	moderately rapid	0.59 to 0.75 in	5.6 to 7.8
2C -- 39 to 80 in	sand	rapid	0.82 to 4.09 in	5.6 to 7.8

D3A--Elkriver fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Elkriver, occasionally flooded

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

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .15
Land capability, nonirrigated 2w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.38 to 1.77 in	5.1 to 7.3
A1,A2,A3 -- 10 to 26 in	fine sandy loam	moderately rapid	2.26 to 3.07 in	5.1 to 7.3
Bw -- 26 to 32 in	very fine sandy loam	moderate	0.77 to 1.12 in	5.6 to 7.8
2C -- 32 to 80 in	sand	very rapid	1.92 to 3.36 in	5.6 to 7.8

D6A--Verndale sandy loam, acid substratum, 0 to 2 percent slopes

Verndale, acid substratum

Extent: 80 to 100 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 2 percent
Parent material: loamy glaciofluvial deposits over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	sandy loam	moderately rapid	1.28 to 1.67 in	5.1 to 7.3
Bt -- 10 to 19 in	sandy loam	moderate	1.27 to 1.63 in	5.1 to 7.3
2Bw -- 19 to 28 in	sand	rapid	0.54 to 0.72 in	5.1 to 7.3
2C -- 28 to 80 in	sand	rapid	1.04 to 3.12 in	5.1 to 7.3

D7A--Hubbard loamy sand, 0 to 2 percent slopes

Hubbard

Extent: 90 to 100 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB --	0 to 20 in	loamy sand	rapid	1.61 to 2.41 in	5.1 to 7.3
Bw --	20 to 32 in	loamy sand	rapid	0.35 to 0.83 in	5.1 to 7.3
BC,C --	32 to 80 in	sand	rapid	1.44 to 3.36 in	5.6 to 7.8

D7B--Hubbard loamy sand, 2 to 6 percent slopes

Hubbard

Extent: 85 to 100 percent of the unit
Landform(s): hills on stream terraces, hills on outwash plains
Slope gradient: 2 to 6 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A --	0 to 18 in	loamy sand	rapid	1.45 to 2.17 in	5.1 to 7.3
Bw --	18 to 23 in	loamy sand	rapid	0.14 to 0.33 in	5.1 to 7.3
BC,C --	23 to 80 in	sand	rapid	1.71 to 4.00 in	5.6 to 7.8

D7C--Hubbard loamy sand, 6 to 12 percent slopes

Hubbard

Extent: 85 to 95 percent of the unit
Landform(s): hills on stream terraces, hills on outwash plains
Slope gradient: 6 to 12 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 12 in	loamy sand	rapid	0.94 to 1.42 in	5.1 to 7.3
Bw -- 12 to 33 in	coarse sand	rapid	0.64 to 1.49 in	5.1 to 7.3
C -- 33 to 80 in	coarse sand	rapid	1.41 to 3.28 in	5.6 to 7.8

D7E--Hubbard loamy sand, 18 to 35 percent slopes

Hubbard

Extent: 75 to 95 percent of the unit
Landform(s): hills on stream terraces, hills on outwash plains
Slope gradient: 18 to 35 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,AB -- 0 to 12 in	loamy sand	rapid	0.94 to 1.42 in	5.1 to 7.3
Bw -- 12 to 33 in	coarse sand	rapid	0.64 to 1.49 in	5.1 to 7.3
C -- 33 to 80 in	coarse sand	rapid	1.41 to 3.28 in	5.6 to 7.8

D8E--Sandberg loamy coarse sand, 18 to 35 percent slopes

Sandberg

Extent: 70 to 90 percent of the unit
Landform(s): escarpments on stream terraces, hills on stream terraces
Slope gradient: 18 to 35 percent
Parent material: sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 11 in	loamy coarse sand	rapid	1.10 to 1.32 in	5.6 to 7.8
Bw -- 11 to 27 in	coarse sand	rapid	0.48 to 1.61 in	6.1 to 7.8
C -- 27 to 80 in	gravelly coarse sand	very rapid	1.06 to 3.17 in	7.4 to 8.4

D9B--Stonelake-Sanburn complex, 1 to 6 percent slopes

Stonelake

Extent: 50 to 75 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 1 to 6 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	gravelly loamy sand	rapid	0.20 to 0.35 in	5.1 to 6.5
Bw -- 4 to 11 in	gravelly coarse sand	very rapid	0.07 to 0.64 in	5.1 to 6.5
Bt -- 11 to 24 in	very gravelly coarse sand	very rapid	0.13 to 0.91 in	5.1 to 6.5
BC,C -- 24 to 80 in	gravelly sand	very rapid	0.56 to 3.35 in	5.1 to 7.3

Sanburn

Extent: 25 to 45 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 1 to 4 percent
Parent material: loamy glaciofluvial deposits over sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 20 in	gravelly sandy loam	moderately rapid	1.05 to 1.80 in	5.1 to 6.5
2BC,2C -- 20 to 80 in	gravelly coarse sand	very rapid	1.20 to 2.39 in	5.1 to 6.5

D9C--Stonelake-Sanburn complex, 6 to 15 percent slopes

Stonelake

Extent: 55 to 80 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 6 to 15 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .02
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 4 in	gravelly loamy sand	rapid	0.20 to 0.35 in	5.1 to 6.5
Bw -- 4 to 11 in	gravelly coarse sand	very rapid	0.07 to 0.64 in	5.1 to 6.5
Bt -- 11 to 24 in	very gravelly coarse sand	very rapid	0.13 to 0.91 in	5.1 to 6.5
BC,C -- 24 to 80 in	gravelly sand	very rapid	0.56 to 3.35 in	5.1 to 7.3

Sanburn

Extent: 20 to 40 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 6 to 12 percent
Parent material: loamy glaciofluvial deposits over sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 5 in	sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 20 in	gravelly sandy loam	moderately rapid	1.05 to 1.80 in	5.1 to 6.5
2BC,2C -- 20 to 80 in	gravelly coarse sand	very rapid	1.20 to 2.39 in	5.1 to 6.5

D9E--Stonelake-Sanburn complex, 15 to 40 percent slopes

Stonelake

Extent: 60 to 85 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 15 to 40 percent
Parent material: gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	loamy coarse sand	rapid	0.12 to 0.30 in	5.1 to 6.5
E -- 2 to 8 in	very gravelly loamy coarse sand	very rapid	0.18 to 0.24 in	5.1 to 6.5
Bt -- 8 to 16 in	very gravelly coarse sand	very rapid	0.25 to 0.66 in	5.1 to 6.5
C -- 16 to 80 in	gravelly coarse sand	very rapid	1.28 to 3.19 in	5.1 to 7.8

Sanburn

Extent: 15 to 30 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 15 to 25 percent
Parent material: loamy glaciofluvial deposits over sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 5 in	sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 14 in	sandy loam	moderately rapid	0.63 to 1.09 in	5.1 to 6.5
2C -- 14 to 80 in	coarse sand	rapid	1.31 to 2.63 in	5.1 to 6.5

D14B--Elkriver-Mosford complex, 0 to 6 percent slopes, rarely flooded

Elkriver, rarely flooded

Extent: 60 to 80 percent of the unit
Landform(s): flats on benches on flood plains
Slope gradient: 1 to 6 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: rare
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.57 to 1.97 in	5.1 to 7.3
A1,A2,A3 -- 10 to 35 in	fine sandy loam	moderately rapid	3.78 to 5.04 in	5.1 to 7.3
Bw -- 35 to 39 in	fine sandy loam	moderately rapid	0.59 to 0.75 in	5.6 to 7.8
2C -- 39 to 80 in	sand	rapid	0.82 to 4.09 in	5.6 to 7.8

Mosford, rarely flooded

Extent: 25 to 35 percent of the unit
Landform(s): rises on benches on flood plains
Slope gradient: 0 to 2 percent
Parent material: alluvium
Restrictive feature(s): greater than 60 inches
Flooding: rare
Ponding: none
Drainage class: somewhat excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 11 in	fine sandy loam	moderate	1.43 to 1.98 in	5.1 to 7.3
Bw -- 11 to 16 in	fine sandy loam	moderate	0.46 to 0.87 in	5.1 to 7.3
2BC,2C1 -- 16 to 57 in	fine sand	rapid	2.05 to 2.87 in	5.1 to 7.3
2C2 -- 57 to 80 in	gravelly sand	very rapid	0.46 to 1.60 in	5.1 to 7.8

D17A--Duelm loamy sand, 0 to 2 percent slopes

Duelm

Extent: 75 to 95 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB -- 0 to 16 in	loamy sand	rapid	1.29 to 1.94 in	5.6 to 7.3
Bw -- 16 to 30 in	coarse sand	rapid	0.83 to 1.52 in	5.1 to 7.3
C -- 30 to 80 in	coarse sand	rapid	1.00 to 3.50 in	5.6 to 7.8

D20A--Isan sandy loam, 0 to 2 percent slopes

Isan

Extent: 80 to 95 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 14 in	sandy loam	moderately rapid	1.42 to 2.13 in	5.6 to 7.3
AB,Bg -- 14 to 34 in	loamy sand	rapid	1.18 to 1.97 in	5.1 to 6.5
Cg -- 34 to 80 in	coarse sand	rapid	1.84 to 2.76 in	5.6 to 7.3

D21A--Isan sandy loam, depressional, 0 to 1 percent slopes

Isan, depressional

Extent: 70 to 90 percent of the unit
Landform(s): depressions on outwash plains, depressions on stream terraces
Slope gradient: 0 to 1 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 14 in	sandy loam	moderately rapid	1.42 to 2.13 in	5.6 to 7.3
AB,Bg -- 14 to 34 in	loamy sand	rapid	1.18 to 1.97 in	5.1 to 6.5
Cg -- 34 to 80 in	coarse sand	rapid	1.84 to 2.76 in	5.6 to 7.3

D22A--Hubbard-Mosford complex, 0 to 3 percent slopes

Hubbard

Extent: 60 to 85 percent of the unit
Landform(s): stream terraces, outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,AB --	0 to 20 in	loamy sand	rapid	1.61 to 2.41 in	5.1 to 7.3
Bw --	20 to 32 in	loamy sand	rapid	0.35 to 0.83 in	5.1 to 7.3
BC,C --	32 to 80 in	sand	rapid	1.44 to 3.36 in	5.6 to 7.8

Mosford

Extent: 15 to 40 percent of the unit
Landform(s): swales on stream terraces, swales on outwash plains
Slope gradient: 0 to 2 percent
Parent material: loamy alluvium over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

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

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A --	0 to 13 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.1 to 7.3
Bw --	13 to 16 in	coarse sandy loam	moderately rapid	0.38 to 0.54 in	5.1 to 7.3
2Bw --	16 to 35 in	coarse sand	rapid	0.57 to 2.08 in	5.1 to 7.3
2C --	35 to 80 in	sand	rapid	0.90 to 3.14 in	5.1 to 7.8

D30A--Seelyeville and Markey soils, depressional, 0 to 1 percent slopes

Markey, depressional

Extent: 0 to 100 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 1 percent
Parent material: muck herbaceous organic material over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: very poorly drained

Soil loss tolerance (T factor): 2
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa --	0 to 36 in	muck	moderately rapid	12.54 to 16.12 in	
A --	36 to 42 in	loamy sand	rapid	0.38 to 0.94 in	5.6 to 7.3
Cg --	42 to 80 in	sand	rapid	1.13 to 3.02 in	5.6 to 7.3

Seelyeville, depressional

Extent: 0 to 100 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 1 percent
Parent material: highly decomposed organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: occasional
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 --	0 to 10 in	muck	moderately rapid	3.44 to 4.43 in	
Oa2,Oa3 --	10 to 80 in	muck	moderately rapid	24.53 to 31.54 in	

D32A--Mosford sandy loam, 0 to 2 percent slopes

Mosford

Extent: 90 to 100 percent of the unit

Landform(s): swales on stream terraces, swales on outwash plains

Slope gradient: 0 to 2 percent

Parent material: loamy alluvium over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 13 in	sandy loam	moderately rapid	1.69 to 2.34 in	5.1 to 7.3
Bw -- 13 to 16 in	coarse sandy loam	moderately rapid	0.38 to 0.54 in	5.1 to 7.3
2Bw -- 16 to 35 in	coarse sand	rapid	0.57 to 2.08 in	5.1 to 7.3
2C -- 35 to 80 in	sand	rapid	0.90 to 3.14 in	5.1 to 7.8

D36B--Eagleview loamy sand, 2 to 6 percent slopes

Eagleview

Extent: 80 to 100 percent of the unit
Landform(s): moraines, outwash plains, stream terraces
Slope gradient: 2 to 6 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 9 in	loamy sand	rapid	0.91 to 1.09 in	5.6 to 7.3
E -- 9 to 36 in	sand	rapid	2.41 to 2.94 in	5.6 to 7.3
E&Bt -- 36 to 54 in	loamy sand	rapid	1.09 to 1.45 in	6.1 to 7.3
C -- 54 to 80 in	sand	rapid	1.30 to 1.82 in	6.1 to 8.4

D36C--Eagleview loamy sand, 6 to 12 percent slopes

Eagleview

Extent: 80 to 100 percent of the unit
Landform(s): moraines, outwash plains, stream terraces
Slope gradient: 6 to 12 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy sand	rapid	0.31 to 0.38 in	5.6 to 7.3
E -- 3 to 37 in	sand	rapid	3.05 to 3.72 in	5.6 to 7.3
E&Bt -- 37 to 60 in	stratified sand to loamy sand	rapid	1.37 to 1.83 in	6.1 to 7.3
C -- 60 to 80 in	sand	rapid	1.00 to 1.41 in	6.1 to 8.4

D38A--Cantlin loamy fine sand, 0 to 3 percent slopes

Cantlin

Extent: 75 to 95 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy glaciofluvial 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 8 in	loamy fine sand	rapid	0.71 to 0.87 in	5.1 to 6.5
Bw -- 8 to 22 in	loamy fine sand	rapid	0.71 to 1.42 in	5.1 to 7.3
BC,C -- 22 to 80 in	fine sand	rapid	2.89 to 4.05 in	5.1 to 7.3

D39A--Fordum loam, 0 to 2 percent slopes, occasionally flooded

Fordum, occasionally flooded

Extent: 85 to 95 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: loamy alluvium over sandy and gravelly alluvium
Restrictive feature(s): greater than 60 inches
Flooding: occasional
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .24
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 9 in	loam	moderate	1.36 to 1.99 in	5.1 to 7.3
Cg -- 9 to 38 in	loam	moderate	2.91 to 6.41 in	5.1 to 7.3
2Cg -- 38 to 80 in	stratified sand to silt loam	rapid	2.09 to 8.35 in	5.6 to 7.3

D44A--Isanti loamy fine sand, 0 to 2 percent slopes

Isanti

Extent: 80 to 90 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 12 in	loamy fine sand	rapid	0.94 to 1.30 in	5.1 to 6.5
Bg -- 12 to 36 in	loamy sand	rapid	1.44 to 3.60 in	5.6 to 7.3
Cg -- 36 to 80 in	sand	rapid	1.32 to 3.53 in	5.6 to 7.3

D46A--Lino loamy fine sand, 0 to 2 percent slopes

Lino

Extent: 80 to 90 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loamy fine sand	rapid	0.64 to 0.78 in	5.1 to 6.5
Bw -- 7 to 45 in	fine sand	rapid	2.27 to 4.16 in	5.1 to 7.3
C -- 45 to 60 in	fine sand	rapid	0.75 to 1.05 in	5.1 to 7.3

D47A--Kost loamy fine sand, 0 to 2 percent slopes

Kost

Extent: 85 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 16 in	loamy fine sand	rapid	1.45 to 1.94 in	5.1 to 7.3
Bw -- 16 to 34 in	fine sand	rapid	1.06 to 1.42 in	5.1 to 7.3
C -- 34 to 60 in	fine sand	rapid	1.30 to 1.82 in	5.6 to 7.3

D47B--Kost loamy fine sand, 2 to 6 percent slopes

Kost

Extent: 85 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 to 6 percent
Parent material: sandy glaciofluvial deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	loamy fine sand	rapid	1.28 to 1.70 in	5.1 to 7.3
Bw -- 14 to 33 in	fine sand	rapid	1.13 to 1.51 in	5.1 to 7.3
C -- 33 to 60 in	fine sand	rapid	1.34 to 1.87 in	5.6 to 7.3

D47C--Kost loamy fine sand, 6 to 12 percent slopes

Kost

Extent: 90 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 12 percent
Parent material: sandy glaciofluvial deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	loamy fine sand	rapid	1.28 to 1.70 in	5.1 to 7.3
Bw -- 14 to 33 in	fine sand	rapid	1.13 to 1.51 in	5.1 to 7.3
C -- 33 to 60 in	fine sand	rapid	1.34 to 1.87 in	5.6 to 7.3

D48A--Cantlin loamy fine sand, thick surface, 0 to 2 percent slopes

Cantlin, thick surface

Extent: 85 to 95 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	loamy fine sand	rapid	1.28 to 1.56 in	5.1 to 6.5
Bw -- 14 to 30 in	loamy fine sand	rapid	0.79 to 1.57 in	5.1 to 7.3
BC,C -- 30 to 80 in	fine sand	rapid	2.50 to 3.50 in	5.1 to 7.3

D50A--Isanti fine sandy loam, depressional, 0 to 1 percent slopes

Isanti, depressional

Extent: 80 to 90 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: sandy glaciofluvial deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .17
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 16 in	fine sandy loam	moderately rapid	1.94 to 2.42 in	5.1 to 6.5
Bg -- 16 to 28 in	loamy fine sand	rapid	0.71 to 1.30 in	5.1 to 7.3
Cg -- 28 to 80 in	fine sand	rapid	2.60 to 3.64 in	5.6 to 7.3

D51A--Kost loamy fine sand, banded substratum, 0 to 2 percent slopes

Kost, banded substratum

Extent: 85 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 16 in	loamy fine sand	rapid	1.45 to 1.94 in	5.1 to 7.3
Bw -- 16 to 25 in	fine sand	rapid	0.54 to 0.72 in	5.1 to 7.3
E&Bt -- 25 to 80 in	fine sand	rapid	2.74 to 5.47 in	5.1 to 7.3

D51B--Kost loamy fine sand, banded substratum, 2 to 6 percent slopes

Kost, banded substratum

Extent: 85 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 2 to 6 percent
Parent material: sandy glaciofluvial deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	loamy fine sand	rapid	1.28 to 1.70 in	5.1 to 7.3
Bw -- 14 to 25 in	fine sand	rapid	0.66 to 0.88 in	5.1 to 7.3
E&Bt -- 25 to 80 in	fine sand	rapid	2.74 to 5.47 in	5.1 to 7.3

D51C--Kost loamy fine sand, banded substratum, 6 to 12 percent slopes

Kost, banded substratum

Extent: 85 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 12 percent
Parent material: sandy glaciofluvial deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 14 in	loamy fine sand	rapid	1.28 to 1.70 in	5.1 to 7.3
Bw -- 14 to 25 in	fine sand	rapid	0.66 to 0.88 in	5.1 to 7.3
E&Bt -- 25 to 80 in	fine sand	rapid	2.74 to 5.47 in	5.1 to 7.3

D52A--Glendorado loamy fine sand, 0 to 2 percent slopes

Glendorado

Extent: 75 to 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loamy fine sand	rapid	1.35 to 1.80 in	5.1 to 7.3
Bw1 -- 15 to 22 in	fine sand	rapid	0.43 to 0.57 in	5.1 to 7.3
Bw2 -- 22 to 48 in	sand	rapid	1.56 to 2.86 in	5.1 to 7.3
C -- 48 to 80 in	sand	rapid	0.64 to 2.23 in	5.6 to 7.8

D54B--Hubbard, bedrock substratum-Rock outcrop complex, 1 to 8 percent slopes

Hubbard, bedrock substratum

Extent: 60 to 80 percent of the unit
Landform(s): stream terraces
Slope gradient: 1 to 8 percent
Parent material: sandy outwash over bedrock
Restrictive feature(s): lithic bedrock at 40 to 80 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 18 in	loamy sand	rapid	1.45 to 2.17 in	5.1 to 7.3
Bw -- 18 to 23 in	loamy sand	rapid	0.14 to 0.33 in	5.1 to 7.3
BC,C -- 23 to 60 in	sand	rapid	1.11 to 2.59 in	5.6 to 7.8
2R -- 60 to 80 in	unweathered bedrock	impermeable		

Rock outcrop

Extent: 15 to 25 percent of the unit
Landform(s): stream terraces
Slope gradient: 1 to 8 percent
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding:
Ponding:
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*

D55B--Zimmerman fine sand, banded substratum, 1 to 6 percent slopes

Zimmerman, banded substratum

Extent: 80 to 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 6 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .02
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sand	rapid	0.43 to 0.57 in	5.1 to 6.5
Bw -- 7 to 63 in	fine sand	rapid	3.35 to 6.15 in	5.1 to 7.3
E&Bt -- 63 to 80 in	fine sand	rapid	0.85 to 1.69 in	5.1 to 7.3

D55C--Zimmerman fine sand, banded substratum, 6 to 12 percent slopes

Zimmerman, banded substratum

Extent: 80 to 95 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 12 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .02
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sand	rapid	0.43 to 0.57 in	5.1 to 6.5
Bw -- 7 to 63 in	fine sand	rapid	3.35 to 6.15 in	5.1 to 7.3
E&Bt -- 63 to 80 in	fine sand	rapid	0.85 to 1.69 in	5.1 to 7.3

D55E--Zimmerman fine sand, banded substratum, 12 to 35 percent slopes

Zimmerman, banded substratum

Extent: 80 to 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 12 to 35 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .02
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sand	rapid	0.22 to 0.28 in	5.1 to 6.5
Bw -- 3 to 63 in	fine sand	rapid	3.59 to 6.58 in	5.1 to 7.3
E&Bt -- 63 to 80 in	fine sand	rapid	0.85 to 1.69 in	5.1 to 7.3

D56A--Lino loamy fine sand, stratified substratum, 0 to 2 percent slopes

Lino, stratified substratum

Extent: 70 to 90 percent of the unit
Landform(s): lake plains, outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy glaciofluvial 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	loamy fine sand	rapid	0.64 to 0.78 in	5.1 to 6.5
Bw -- 7 to 65 in	loamy fine sand	rapid	3.47 to 6.37 in	5.1 to 7.3
2C -- 65 to 80 in	stratified loamy very fine sand to silty clay loam	rapid	1.20 to 3.29 in	5.1 to 7.3

D61A--Glendorado loamy sand, 0 to 2 percent slopes

Glendorado

Extent: 80 to 95 percent of the unit
Landform(s): outwash plains, stream terraces
Slope gradient: 0 to 2 percent
Parent material: sandy outwash
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap,A -- 0 to 15 in	loamy sand	rapid	1.20 to 1.80 in	5.6 to 7.3
Bw1 -- 15 to 22 in	loamy sand	rapid	0.43 to 0.78 in	5.1 to 7.3
Bw2 -- 22 to 48 in	sand	rapid	1.56 to 2.86 in	5.1 to 7.3
C -- 48 to 80 in	sand	rapid	0.64 to 2.23 in	5.6 to 7.8

D64A--Zimmerman fine sand, 0 to 3 percent slopes

Zimmerman

Extent: 80 to 95 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .02
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sand	rapid	0.43 to 0.57 in	5.1 to 6.5
Bw -- 7 to 27 in	fine sand	rapid	1.20 to 2.21 in	5.1 to 7.3
E&Bt -- 27 to 80 in	fine sand	rapid	2.64 to 5.28 in	5.1 to 7.3

D64B--Zimmerman fine sand, 3 to 6 percent slopes

Zimmerman

Extent: 95 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 3 to 6 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .02
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sand	rapid	0.43 to 0.57 in	5.1 to 6.5
Bw -- 7 to 27 in	fine sand	rapid	1.20 to 2.21 in	5.1 to 7.3
E&Bt -- 27 to 80 in	fine sand	rapid	2.64 to 5.28 in	5.1 to 7.3

D64C--Zimmerman fine sand, 6 to 12 percent slopes

Zimmerman

Extent: 90 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 6 to 12 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .02
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Ap -- 0 to 7 in	fine sand	rapid	0.43 to 0.57 in	5.1 to 6.5
Bw -- 7 to 27 in	fine sand	rapid	1.20 to 2.21 in	5.1 to 7.3
E&Bt -- 27 to 80 in	fine sand	rapid	2.64 to 5.28 in	5.1 to 7.3

D64E--Zimmerman fine sand, 12 to 30 percent slopes

Zimmerman

Extent: 90 to 100 percent of the unit
Landform(s): outwash plains
Slope gradient: 12 to 30 percent
Parent material: sandy glaciofluvial deposits
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): 1
Wind erodibility index (WEI): 220
Kw factor (surface layer) .02
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sand	rapid	0.22 to 0.28 in	5.1 to 6.5
Bw -- 3 to 25 in	fine sand	rapid	1.32 to 2.43 in	5.1 to 7.3
E&Bt -- 25 to 80 in	fine sand	rapid	2.74 to 5.47 in	5.1 to 7.3

GP--Pits, gravel-Udipsamments complex

Pits, gravel

Extent: 70 to 90 percent of the unit
Landform(s): moraines, stream terraces, outwash plains
Slope gradient: 0 to 45 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class:

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

Representative soil profile:

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

Udipsamments

Extent: 10 to 30 percent of the unit
Landform(s): moraines, stream terraces, outwash plains
Slope gradient: 0 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer)
Land capability, nonirrigated
Hydric soil:
Hydrologic group: A
Potential for frost action:

Representative soil profile:

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

Map Unit Description (MN)

Benton 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:

Representative soil profile:

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

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:

Representative soil profile:

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

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.