Map Unit Description (MN)

Itasca 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]

32B--Nebish very fine sandy loam, 2 to 6 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 6 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 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*
A -- 0 to 2 in	very fine sandy loam	moderately rapid	0.26 to 0.35 in	5.6 to 7.3
E -- 2 to 8 in	very fine sandy loam	moderately rapid	0.65 to 1.12 in	5.6 to 7.3
B/E,Bt1-Bt3 -- 8 to 39 in	loam	moderate	4.67 to 5.91 in	5.6 to 7.8
C -- 39 to 64 in	loam	moderate	2.73 to 4.71 in	7.4 to 8.4

32D--Nebish fine sandy loam, 10 to 25 percent slopes

Nebish

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 10 to 25 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.57 in	5.6 to 7.3
E -- 3 to 9 in	fine sandy loam	moderately rapid	0.65 to 1.12 in	5.6 to 7.3
B/E,Bt -- 9 to 29 in	loam	moderate	3.01 to 3.81 in	5.6 to 7.8
C -- 29 to 60 in	loam	moderate	3.38 to 5.83 in	7.4 to 8.4

72--Shooker very fine sandy loam

Shooker

Extent: 85 percent of the unit
Landform(s): flats on 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .32
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	very fine sandy loam	moderately rapid	0.26 to 0.30 in	5.6 to 7.3
E,B/E,Btg -- 2 to 27 in	clay loam	moderate	3.72 to 4.71 in	5.6 to 7.8
Cg1,Cg2 -- 27 to 60 in	loam	moderate	3.64 to 6.28 in	7.4 to 8.4

147--Spooner silt loam

Spooner

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

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.94 in	5.6 to 7.8
E -- 4 to 9 in	silt loam	moderately rapid	0.87 to 0.97 in	5.6 to 7.8
B/E,Bt,BC -- 9 to 20 in	loam	moderate	1.87 to 2.43 in	6.1 to 7.8
Cg1-Cg3 -- 20 to 60 in	silt loam	moderate	6.76 to 8.75 in	7.4 to 8.4

158B--Zimmerman loamy fine sand, 1 to 8 percent slopes

Zimmerman

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 8 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
Bw,E',E&Bt,C -- 3 to 60 in	fine sand	rapid	3.40 to 5.67 in	5.1 to 7.3

167B--Baudette silt loam, 0 to 5 percent slopes

Baudette

Extent: 90 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 5 percent
Parent material: silty lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .37
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	silt loam	moderate	1.42 to 1.56 in	5.6 to 7.3
E -- 7 to 9 in	silt loam	moderate	0.28 to 0.39 in	5.6 to 7.3
B/E,Bt,BC -- 9 to 36 in	silt loam	moderate	4.55 to 6.43 in	5.6 to 7.8
C -- 36 to 60 in	silt loam	moderate	4.08 to 5.28 in	7.4 to 8.4

202--Meehan loamy sand

Meehan

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: 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 4w
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	loamy sand	moderately rapid	0.12 to 0.14 in	3.5 to 7.3
E,Bw -- 1 to 35 in	loamy sand	rapid	2.03 to 3.72 in	3.5 to 6.5
C -- 35 to 60 in	coarse sand	rapid	0.50 to 1.74 in	3.5 to 7.3

240B--Warba fine sandy loam, 1 to 8 percent slopes

Warba

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 8 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderately rapid	0.21 to 0.27 in	5.1 to 6.5
E,E/B,Bt -- 1 to 48 in	clay loam	moderately slow	7.50 to 8.90 in	5.1 to 7.3
C -- 48 to 60 in	sandy clay loam	moderate	1.89 to 2.24 in	6.6 to 8.4

240D--Warba fine sandy loam, 10 to 25 percent slopes

Warba

Extent: 90 percent of the unit
Landform(s): moraines
Slope gradient: 10 to 25 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderately rapid	0.21 to 0.27 in	5.1 to 6.5
E,E/B,Bt -- 1 to 42 in	clay loam	moderately slow	6.55 to 7.78 in	5.1 to 7.3
C -- 42 to 60 in	loam	moderate	2.83 to 3.37 in	6.6 to 8.4

243--Stuntz very fine sandy loam

Stuntz

Extent: 90 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 3 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
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 1 in	very fine sandy loam	moderately rapid	0.21 to 0.27 in	4.5 to 6.5
E,E/B,B/E,Bt -- 1 to 43 in	clay loam	moderately slow	6.68 to 7.93 in	5.1 to 7.8
C -- 43 to 60 in	clay loam	moderately slow	2.71 to 3.22 in	6.6 to 8.4

268B--Cromwell fine sandy loam, 1 to 10 percent slopes

Cromwell

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 10 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderate	0.50 to 0.57 in	4.5 to 6.0
E,Bw,2Bw,2C -- 3 to 60 in	coarse sand	rapid	2.83 to 3.97 in	5.1 to 7.3

268D--Cromwell fine sandy loam, 10 to 25 percent slopes

Cromwell

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 10 to 25 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 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 sandy loam	moderate	0.50 to 0.57 in	4.5 to 6.0
E,Bw,2Bw,2C -- 3 to 60 in	coarse sand	rapid	2.83 to 3.97 in	5.1 to 7.3

458E--Menahga loamy sand, 10 to 30 percent slopes

Menahga

Extent: 95 percent of the unit
Landform(s): outwash plains
Slope gradient: 10 to 30 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 -- 0 to 1 in	loamy sand	rapid	0.12 to 0.14 in	4.5 to 6.5
E,Bw,BC -- 1 to 44 in	sand	rapid	2.15 to 3.00 in	4.5 to 6.5
C -- 44 to 60 in	coarse sand	rapid	0.79 to 1.10 in	5.6 to 7.8

533--Loxley peat

Loxley

Extent: 95 percent of the unit
Landform(s): bogs
Slope gradient: 0 to 1 percent
Parent material: 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi,Oe1 -- 0 to 12 in	peat	very rapid	4.13 to 7.68 in	
Oa1,Oe2,Oa2 -- 12 to 60 in	muck	moderately rapid	16.81 to 21.61 in	

541--Rifle mucky peat

Rifle

Extent: 95 percent of the unit
Landform(s): swamps
Slope gradient: 0 to 1 percent
Parent material: herbaceous 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe1 -- 0 to 4 in	mucky peat	rapid	1.89 to 2.28 in	
Oe2-Oe5 -- 4 to 60 in	mucky peat	rapid	26.83 to 32.43 in	

544--Cathro muck

Cathro

Extent: 95 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 2 percent
Parent material: organic material over loamy till
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 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1,Oe -- 0 to 14 in	muck	moderately rapid	4.96 to 6.38 in	
Oa2 -- 14 to 39 in	muck	moderately rapid	8.68 to 11.16 in	
Cg -- 39 to 60 in	loam	moderate	2.30 to 4.59 in	

549--Greenwood peat

Greenwood

Extent: 95 percent of the unit
Landform(s): bogs
Slope gradient: 0 to 1 percent
Parent material: herbaceous 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): 7
Wind erodibility index (WEI): 38
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 15 in	peat	very rapid	8.23 to 9.72 in	
Oe1,Oe2 -- 15 to 60 in	mucky peat	rapid	20.20 to 24.68 in	

550--Dora mucky peat

Dora

Extent: 95 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
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*
Oe	0 to 12 in	mucky peat	rapid	4.13 to 6.50 in	
Oa1,Oa2	12 to 32 in	muck	moderately rapid	7.03 to 11.04 in	
A	32 to 36 in	mucky silty clay loam	moderately slow	0.71 to 0.94 in	
Cg1,Cg2,Cg3	36 to 60 in	silty clay	impermeable	2.40 to 4.80 in	

614--Blackhoof muck

Blackhoof

Extent: 85 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: organic material over loamy till
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 6w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 8 in	muck	moderately rapid	4.33 to 5.12 in	5.1 to 6.5
A -- 8 to 11 in	loam	slow	0.50 to 0.63 in	5.1 to 6.5
Bg1-Bg3,Cg -- 11 to 60 in	loam	slow	6.83 to 8.30 in	5.1 to 7.8

615--Cowhorn loamy very fine sand

Cowhorn

Extent: 90 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 3 percent
Parent material: sandy outwash over sandy and silty 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): 2
Wind erodibility index (WEI): 134
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*
A -- 0 to 8 in	loamy very fine sand	moderately rapid	1.26 to 1.57 in	5.1 to 6.5
Bw1-Bw4 -- 8 to 51 in	loamy very fine sand	moderately rapid	5.20 to 8.23 in	5.1 to 6.5
C -- 51 to 60 in	very fine sand	moderately rapid	1.04 to 1.65 in	6.1 to 8.4

616--Effie loam

Effie

Extent: 85 percent of the unit
Landform(s): flats on 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) .37
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 5 in	loam	moderate	1.02 to 1.23 in	5.6 to 7.3
B/E,Btg1-2 -- 5 to 19 in	clay loam	slow	1.65 to 2.62 in	5.1 to 8.4
Cg1,Cg2 -- 19 to 60 in	clay loam	slow	4.91 to 7.78 in	7.9 to 8.4

617B--Goodland silt loam, 1 to 10 percent slopes

Goodland

Extent: 90 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 10 percent
Parent material: sandy and silty glaciolacustrine deposits over sandy and gravelly 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	silt loam	moderate	0.63 to 0.76 in	5.1 to 6.5
Bw,2E/B,2Bt -- 3 to 28 in	fine sandy loam	moderate	2.98 to 4.71 in	5.1 to 6.5
3BC -- 28 to 34 in	gravelly loamy coarse sand	moderately rapid	0.35 to 0.59 in	5.1 to 6.5
3C -- 34 to 60 in	gravelly sand	rapid	0.52 to 1.82 in	5.6 to 7.8

618B--Itasca silt loam, 1 to 10 percent slopes

Itasca

Extent: 90 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 10 percent
Parent material: silty glaciolacustrine deposits over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	silt loam	moderate	0.69 to 0.76 in	5.1 to 6.5
Bw,E' -- 3 to 19 in	silt loam	moderate	2.68 to 3.46 in	5.1 to 6.0
2E/B,2Bt1 -- 19 to 43 in	fine sandy loam	moderate	2.64 to 4.56 in	5.6 to 7.3
2Bt2,2C -- 43 to 60 in	fine sandy loam	moderate	1.86 to 3.22 in	6.6 to 8.4

619--Keewatin silt loam

Keewatin

Extent: 90 percent of the unit
Landform(s): swales on moraines
Slope gradient: 0 to 3 percent
Parent material: loamy till
Restrictive feature(s): dense material at 6 to 14 inches
Flooding: none
Ponding: none
Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3
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: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	silt loam	moderate	0.19 to 0.24 in	5.1 to 6.5
E1,E2 -- 1 to 11 in	fine sandy loam	moderate	1.38 to 1.77 in	4.5 to 6.0
E3 -- 11 to 16 in	sandy loam	slow	0.51 to 0.72 in	5.1 to 6.5
B/E,Bt1,Bt2 -- 16 to 60 in	loam	slow	3.50 to 6.12 in	5.1 to 6.5
C -- 60 to 65 in	loam	slow	0.15 to 0.51 in	6.1 to 8.4

620B--Cutaway loamy sand, 0 to 8 percent slopes

Cutaway

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 0 to 8 percent
Parent material: sandy outwash over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .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*
E -- 0 to 4 in	loamy sand	rapid	0.39 to 0.47 in	5.1 to 6.5
Bw1-Bw3,E' -- 4 to 35 in	sand	rapid	1.87 to 3.42 in	5.1 to 6.5
2B/E,2Bt -- 35 to 51 in	clay loam	moderate	1.94 to 3.07 in	5.1 to 7.8
2BC,2C -- 51 to 60 in	loam	moderate	1.04 to 1.65 in	6.1 to 8.4

621--Morph very fine sandy loam

Morph

Extent: 85 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
A	--	0 to 4 in	very fine sandy loam	moderately rapid	0.51 to 0.87 in	5.1 to 6.5
E	--	4 to 13 in	very fine sandy loam	moderate	1.00 to 1.72 in	5.1 to 6.5
B/E,Bt1,Bt2	--	13 to 33 in	fine sandy loam	moderate	2.21 to 3.81 in	5.1 to 7.3
BC,C1,C2,C3	--	33 to 60 in	stratified loamy sand to silty clay loam	moderate	2.94 to 5.09 in	6.6 to 8.4

622B--Nashwauk fine sandy loam, 1 to 10 percent slopes

Nashwauk

Extent: 85 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 10 percent
Parent material: loamy till
Restrictive feature(s): dense material at 6 to 14 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderate	0.15 to 0.24 in	5.1 to 6.5
E,Bw -- 1 to 7 in	fine sandy loam	moderate	0.83 to 1.06 in	4.5 to 6.0
E',B/E -- 7 to 16 in	loam	slow	0.91 to 1.27 in	5.1 to 6.5
Bt1,Bt2,Bt3 -- 16 to 58 in	loam	slow	3.34 to 5.84 in	5.1 to 6.5
C -- 58 to 72 in	silt loam	slow	0.43 to 1.42 in	6.1 to 8.4

622E--Nashwauk fine sandy loam, 12 to 35 percent slopes

Nashwauk

Extent: 90 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 35 percent
Parent material: loamy till
Restrictive feature(s): dense material at 6 to 14 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderately rapid	0.15 to 0.19 in	5.1 to 6.5
E,Bw -- 1 to 12 in	fine sandy loam	moderate	1.49 to 1.91 in	4.5 to 6.0
B/E -- 12 to 16 in	fine sandy loam	slow	0.43 to 0.61 in	5.1 to 6.5
Bt1,Bt2,Bt3 -- 16 to 58 in	clay loam	slow	3.34 to 5.84 in	5.1 to 6.5
C -- 58 to 60 in	loam	slow	0.06 to 0.20 in	6.1 to 8.4

624B--Rosy very fine sandy loam, 0 to 6 percent slopes

Rosy

Extent: 85 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 6 percent
Parent material: 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) .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*
E	--	0 to 9 in	very fine sandy loam	moderate	1.27 to 1.72 in	5.1 to 7.3
B/E,Bt,E&Bt	--	9 to 50 in	loam	moderate	5.73 to 7.78 in	5.1 to 7.3
C1,C2	--	50 to 64 in	stratified sand to silty clay loam	moderate	1.52 to 2.34 in	5.6 to 8.4

625--Sandwick loamy fine sand

Sandwick

Extent: 85 percent of the unit
Landform(s): flats on moraines
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over loamy till
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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:			*Texture*	*Permeability*	*Available water capacity*	*pH*
E	--	0 to 4 in	loamy fine sand	rapid	0.31 to 0.39 in	5.1 to 6.5
Bw,E'1	--	4 to 22 in	loamy fine sand	rapid	1.09 to 1.63 in	5.1 to 6.5
2E'2,2Btg1-2	--	22 to 38 in	loam	moderately slow	1.57 to 2.52 in	5.6 to 7.3
2Cg	--	38 to 60 in	loam	moderately slow	0.44 to 2.20 in	6.6 to 8.4

626B--Suomi silt loam, 1 to 8 percent slopes

Suomi

Extent: 90 percent of the unit
Landform(s): lake plains
Slope gradient: 1 to 8 percent
Parent material: silty and clayey till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .43
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	silt loam	moderate	0.63 to 0.76 in	5.1 to 7.3
E,E/B,Bt -- 3 to 36 in	clay	slow	3.27 to 6.21 in	5.1 to 7.3
C -- 36 to 60 in	clay	slow	2.64 to 4.08 in	7.4 to 8.4

626D--Suomi loam, 10 to 25 percent slopes

Suomi

Extent: 85 percent of the unit
Landform(s): lake plains
Slope gradient: 10 to 25 percent
Parent material: silty and clayey till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .43
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loam	moderate	0.63 to 0.76 in	5.1 to 7.3
E,Bt -- 3 to 33 in	clay	slow	2.99 to 5.69 in	5.1 to 7.3
C1,C2 -- 33 to 60 in	silty clay loam	slow	2.94 to 4.55 in	7.4 to 8.4

627--Tawas muck

Tawas

Extent: 90 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: organic material over loamy till
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 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 13 in	muck	moderately rapid	4.55 to 5.85 in	
Oa2,Oa3,Oa4 -- 13 to 31 in	muck	moderately rapid	4.35 to 8.15 in	
2Cg1,2Cg2 -- 31 to 60 in	sand	rapid	0.86 to 2.87 in	

628--Talmoon silt loam

Talmoon

Extent: 85 percent of the unit
Landform(s): depressions on moraines
Slope gradient: 0 to 1 percent
Parent material: loamy glaciolacustrine deposits over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 3w
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 1.30 in	5.1 to 7.3
E1,E2 -- 6 to 16 in	very fine sandy loam	moderate	1.33 to 2.25 in	5.1 to 7.3
Btg,BCg -- 16 to 42 in	loam	moderately slow	4.16 to 4.94 in	5.6 to 7.3
Cg -- 42 to 60 in	loam	moderately slow	2.66 to 3.37 in	7.4 to 8.4

629B--Wawina loamy very fine sand, 0 to 10 percent slopes

Wawina

Extent: 90 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 10 percent
Parent material: eolian sands
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) .24
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	loamy very fine sand	moderately rapid	0.50 to 0.57 in	5.1 to 6.5
Bw,BC,C -- 3 to 65 in	very fine sand	moderately rapid	8.65 to 9.89 in	5.1 to 7.3

630--Wildwood muck

Wildwood

Extent: 85 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material: organic material over clayey lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 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*
Oa1,Oa2 -- 0 to 12 in	muck	moderately rapid	4.13 to 5.31 in	5.1 to 6.5
A,Bg -- 12 to 24 in	clay	slow	0.00 to 0.49 in	5.6 to 7.3
Cg1,Cg2 -- 24 to 60 in	clay	slow	0.00 to 1.43 in	7.4 to 8.4

655--Bearville loamy sand

Bearville

Extent: 85 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash over 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 3w
Hydric soil: yes
Hydrologic group: C
Potential for frost action: high

Representative soil profile:

		Texture	*Permeability*	*Available water capacity*	*pH*
A --	0 to 2 in	loamy sand	rapid	0.20 to 0.24 in	5.1 to 7.3
E1,E2 --	2 to 16 in	loamy sand	rapid	0.85 to 1.42 in	5.1 to 7.3
2Btg1 --	16 to 25 in	sandy clay loam	moderately slow	1.18 to 1.63 in	5.6 to 7.3
3Btg2,3BCg --	25 to 35 in	clay	slow	0.79 to 1.57 in	6.6 to 7.8
3Cg --	35 to 60 in	clay	impermeable	2.98 to 3.97 in	7.4 to 8.4

656B--Thistledew loamy fine sand, 0 to 6 percent slopes

Thistledew

Extent: 90 percent of the unit
Landform(s): lake plains
Slope gradient: 0 to 6 percent
Parent material: sandy outwash over 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .15
Land capability, nonirrigated 3s
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 2 in	loamy fine sand	rapid	0.16 to 0.20 in	5.1 to 6.5
Bw1,Bw2,E' -- 2 to 23 in	loamy sand	rapid	1.25 to 1.88 in	5.1 to 6.5
2Bt -- 23 to 38 in	sandy clay loam	moderately slow	1.50 to 2.39 in	5.6 to 7.8
3BC,3C -- 38 to 60 in	clay	slow	1.54 to 3.09 in	6.1 to 8.4

797--Mooselake and Lupton mucky peats

Mooselake

Extent: 48 percent of the unit
Landform(s): swamps
Slope gradient: 0 to 1 percent
Parent material: herbaceous 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi --	0 to 3 in	mucky peat	rapid	1.10 to 1.73 in	
Oe1,Oe2,Oe3 --	3 to 71 in	mucky peat	rapid	27.09 to 33.86 in	

Lupton

Extent: 48 percent of the unit
Landform(s): swamps
Slope gradient: 0 to 1 percent
Parent material: 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .02
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi,Oe --	0 to 8 in	mucky peat	rapid	3.54 to 4.33 in	
Oa1,Oa2 --	8 to 65 in	muck	moderately rapid	19.98 to 25.69 in	

798--Sago and Roscommon soils

Sago

Extent: 45 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 1 percent
Parent material: organic material over sandy and silty glaciolacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 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 13 in	muck	moderately rapid	4.55 to 5.85 in	4.5 to 6.5
A,Bg1,Bg2,Cg --	13 to 60 in	stratified fine sand to silt loam	moderate	6.56 to 9.37 in	5.6 to 8.4

Roscommon

Extent: 45 percent of the unit
Landform(s): depressions on outwash plains
Slope gradient: 0 to 2 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very 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 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:		*Texture*	*Permeability*	*Available water capacity*	*pH*
A --	0 to 6 in	mucky loamy sand	rapid	0.47 to 1.18 in	5.6 to 7.8
Cg1,Cg2,Cg3 --	6 to 60 in	sand	rapid	2.70 to 4.85 in	5.6 to 8.4

799--Seelyeville-Bowstring association

Seelyeville

Extent: 45 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 2 percent
Parent material: organic material
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 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 28 in	muck	moderately rapid	9.78 to 12.58 in	
Oe,Oa2,Oa3 -- 28 to 60 in	muck	moderately rapid	11.16 to 14.35 in	

Bowstring

Extent: 45 percent of the unit
Landform(s): flood plains
Slope gradient: 0 to 1 percent
Parent material: organic material and/or 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .02
Land capability, nonirrigated 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa -- 0 to 38 in	muck	moderately rapid	13.23 to 17.01 in	
C -- 38 to 43 in	stratified sand to fine sandy loam	rapid	0.41 to 0.72 in	
Oa,Cg -- 43 to 56 in	stratified muck to mucky sand	moderately rapid	4.55 to 5.85 in	

801B--Taylor and Dalbo silt loams, 0 to 6 percent slopes

Taylor

Extent: 43 percent of the unit
Landform(s): lake plains
Slope gradient: 0 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) .43
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 2 in	silt loam	moderate	0.43 to 0.47 in	5.6 to 7.3
E,Bt1,Bt2,BC -- 2 to 21 in	clay	slow	1.89 to 2.65 in	5.1 to 7.8
C1,C2 -- 21 to 60 in	clay	impermeable	3.51 to 5.07 in	7.4 to 8.4

Dalbo

Extent: 43 percent of the unit
Landform(s): lake plains
Slope gradient: 0 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) .37
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	silt loam	moderate	0.26 to 0.28 in	5.6 to 7.3
E,B/E,Bt,BC -- 1 to 35 in	clay	moderately slow	3.39 to 6.09 in	5.1 to 7.3
C -- 35 to 60 in	silty clay loam	moderate	2.48 to 4.46 in	7.4 to 8.4

803B--Warba-Menahga complex, 1 to 8 percent slopes

Warba

Extent: 50 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 8 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 2e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderately rapid	0.21 to 0.27 in	5.1 to 6.5
E,E/B,Bt -- 1 to 48 in	clay loam	moderately slow	7.50 to 8.90 in	5.1 to 7.3
C -- 48 to 60 in	sandy clay loam	moderate	1.89 to 2.24 in	6.6 to 8.4

Menahga

Extent: 35 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 8 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*
A -- 0 to 1 in	loamy coarse sand	rapid	0.12 to 0.14 in	4.5 to 6.5
E,Bw,BC -- 1 to 38 in	sand	rapid	2.56 to 3.30 in	4.5 to 6.5
C -- 38 to 60 in	coarse sand	rapid	1.10 to 1.54 in	5.6 to 6.5

803D--Warba-Menahga complex, 10 to 25 percent slopes

Warba

Extent: 50 percent of the unit
Landform(s): moraines
Slope gradient: 10 to 25 percent
Parent material: loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .20
Land capability, nonirrigated 4e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderately rapid	0.21 to 0.27 in	5.1 to 6.5
E,E/B,Bt -- 1 to 48 in	clay loam	moderately slow	7.50 to 8.90 in	5.1 to 7.3
C -- 48 to 60 in	sandy clay loam	moderate	1.89 to 2.24 in	6.6 to 8.4

Menahga

Extent: 40 percent of the unit
Landform(s): moraines
Slope gradient: 10 to 25 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*
A -- 0 to 1 in	loamy coarse sand	rapid	0.12 to 0.14 in	4.5 to 6.5
E,Bw,BC -- 1 to 38 in	sand	rapid	2.56 to 3.30 in	4.5 to 6.5
C -- 38 to 60 in	coarse sand	rapid	1.10 to 1.54 in	5.6 to 6.5

844F--Mahtomedi and Emmert soils, 12 to 50 percent slopes

Mahtomedi

Extent: 43 percent of the unit
Landform(s): outwash plains
Slope gradient: 12 to 45 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 3 in	loamy sand	rapid	0.31 to 0.38 in	5.1 to 6.5
Bw1 -- 3 to 7 in	coarse sand	rapid	0.24 to 0.31 in	5.1 to 6.5
Bw2,Bw3 -- 7 to 33 in	gravelly sand	rapid	1.30 to 1.82 in	5.1 to 6.5
C1,C2 -- 33 to 60 in	gravelly sand	rapid	1.07 to 2.41 in	5.1 to 7.8

Emmert

Extent: 43 percent of the unit
Landform(s): outwash plains
Slope gradient: 12 to 50 percent
Parent material: sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .10
Land capability, nonirrigated 7s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	gravelly loamy coarse sand	very rapid	0.07 to 0.12 in	5.1 to 6.5
E,Bw,BC,C -- 1 to 60 in	very gravelly coarse sand	very rapid	1.17 to 2.35 in	5.1 to 7.3

866B--Menahga-Itasca complex, 1 to 10 percent slopes

Menahga

Extent: 55 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 10 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*
A -- 0 to 1 in	loamy sand	rapid	0.12 to 0.14 in	4.5 to 6.5
E,Bw,BC -- 1 to 38 in	sand	rapid	2.56 to 3.30 in	4.5 to 6.5
C -- 38 to 60 in	coarse sand	rapid	1.10 to 1.54 in	5.6 to 6.5

Itasca

Extent: 35 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 10 percent
Parent material: silty glaciolacustrine deposits over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	silt loam	moderate	0.69 to 0.76 in	5.1 to 6.5
Bw,E' -- 3 to 19 in	silt loam	moderate	2.68 to 3.46 in	5.1 to 6.0
2E/B,2Bt1 -- 19 to 55 in	fine sandy loam	moderate	3.98 to 6.88 in	5.6 to 7.3
2Bt2,2C -- 55 to 60 in	fine sandy loam	moderate	0.52 to 0.90 in	6.6 to 8.4

866E--Menahga-Itasca complex, 10 to 25 percent slopes

Menahga

Extent: 60 percent of the unit
Landform(s): moraines
Slope gradient: 10 to 25 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*
A -- 0 to 1 in	loamy sand	rapid	0.12 to 0.14 in	4.5 to 6.5
E,Bw,BC -- 1 to 33 in	sand	rapid	2.23 to 2.87 in	4.5 to 6.5
C -- 33 to 60 in	coarse sand	rapid	1.34 to 1.87 in	5.6 to 6.5

Itasca

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 10 to 25 percent
Parent material: silty glaciolacustrine deposits over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	silt loam	moderate	0.69 to 0.76 in	5.1 to 6.5
Bw,E' -- 3 to 19 in	silt loam	moderate	2.68 to 3.46 in	5.1 to 6.0
2E/B,2Bt1 -- 19 to 55 in	fine sandy loam	moderate	3.98 to 6.88 in	5.6 to 7.3
2Bt2,2C -- 55 to 60 in	fine sandy loam	moderate	0.52 to 0.90 in	6.6 to 8.4

867B--Menahga and Graycalm soils, 0 to 8 percent slopes

Menahga

Extent: 48 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 8 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*
A -- 0 to 1 in	loamy coarse sand	rapid	0.12 to 0.14 in	4.5 to 6.5
E,Bw,BC -- 1 to 38 in	sand	rapid	1.83 to 2.56 in	4.5 to 6.5
C -- 38 to 60 in	coarse sand	rapid	1.10 to 1.54 in	5.6 to 7.8

Graycalm

Extent: 48 percent of the unit
Landform(s): outwash plains
Slope gradient: 0 to 8 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) .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 1 in	loamy sand	rapid	0.07 to 0.14 in	3.5 to 6.5
E,Bw1,Bw2 -- 1 to 17 in	loamy sand	rapid	0.79 to 1.57 in	3.5 to 7.3
E'1,E'2,E&Bt -- 17 to 58 in	sand	rapid	1.64 to 3.69 in	3.5 to 7.3
C -- 58 to 72 in	sand	rapid	0.57 to 0.85 in	3.5 to 8.4

868B--Mahtomedi and Graycalm soils, 1 to 10 percent slopes

Mahtomedi

Extent: 48 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 10 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 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	loamy coarse sand	rapid	0.39 to 0.47 in	5.1 to 6.5
Bw1,Bw2,Bw3 -- 4 to 34 in	gravelly sand	rapid	1.50 to 2.09 in	5.1 to 6.5
C -- 34 to 60 in	gravelly sand	rapid	1.04 to 2.34 in	5.1 to 7.8

Graycalm

Extent: 48 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 10 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) .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 1 in	loamy sand	rapid	0.07 to 0.14 in	3.5 to 6.5
E,Bw1,Bw2 -- 1 to 17 in	loamy sand	rapid	0.79 to 1.57 in	3.5 to 7.3
E'1,E'2,E&Bt -- 17 to 58 in	sand	rapid	1.64 to 3.69 in	3.5 to 7.3
C -- 58 to 60 in	sand	rapid	0.08 to 0.12 in	3.5 to 8.4

869--Lobo and Waskish peats

Lobo

Extent: 48 percent of the unit
Landform(s): bogs
Slope gradient: 0 to 1 percent
Parent material: mossy organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
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 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 44 in	peat	very rapid	24.25 to 28.66 in	
Oe -- 44 to 60 in	mucky peat	rapid	7.09 to 8.66 in	

Waskish

Extent: 48 percent of the unit
Landform(s): bogs
Slope gradient: 0 to 2 percent
Parent material: mossy organic material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
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 7w
Hydric soil: yes
Hydrologic group: D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oi -- 0 to 60 in	peat	very rapid	32.91 to 38.90 in	

870C--Itasca-Goodland silt loams, 2 to 12 percent slopes

Itasca

Extent: 55 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 12 percent
Parent material: silty glaciolacustrine deposits over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	silt loam	moderate	0.69 to 0.76 in	5.1 to 6.5
Bw,E' -- 3 to 19 in	silt loam	moderate	2.68 to 3.46 in	5.1 to 6.0
2E/B,2Bt1 -- 19 to 55 in	fine sandy loam	moderate	3.98 to 6.88 in	5.6 to 7.3
2Bt2,2C -- 55 to 60 in	fine sandy loam	moderate	0.52 to 0.90 in	6.6 to 8.4

Goodland

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 2 to 12 percent
Parent material: sandy and silty glaciolacustrine deposits over sandy and gravelly 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 3e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	silt loam	moderate	0.63 to 0.76 in	5.1 to 6.5
Bw,2E/B,2Bt -- 3 to 28 in	fine sandy loam	moderate	2.98 to 4.71 in	5.1 to 6.5
3BC -- 28 to 34 in	gravelly loamy coarse sand	moderately rapid	0.35 to 0.59 in	5.1 to 6.5
3C -- 34 to 60 in	gravelly sand	rapid	0.52 to 1.82 in	5.6 to 7.8

870E--Itasca-Goodland silt loams, 12 to 25 percent slopes

Itasca

Extent: 50 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 25 percent
Parent material: silty glaciolacustrine deposits over loamy till
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	silt loam	moderate	0.69 to 0.76 in	5.1 to 6.5
Bw,E' -- 3 to 19 in	silt loam	moderate	2.68 to 3.46 in	5.1 to 6.0
2E/B,2Bt1 -- 19 to 55 in	fine sandy loam	moderate	3.98 to 6.88 in	5.6 to 7.3
2Bt2,2C -- 55 to 60 in	fine sandy loam	moderate	0.52 to 0.90 in	6.6 to 8.4

Goodland

Extent: 40 percent of the unit
Landform(s): moraines
Slope gradient: 12 to 25 percent
Parent material: sandy and silty glaciolacustrine deposits over sandy and gravelly 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): 5
Wind erodibility index (WEI): 56
Kw factor (surface layer) .37
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
E -- 0 to 3 in	silt loam	moderate	0.63 to 0.76 in	5.1 to 6.5
Bw,2E/B,2Bt -- 3 to 28 in	fine sandy loam	moderate	2.98 to 4.71 in	5.1 to 6.5
3BC -- 28 to 34 in	gravelly loamy coarse sand	moderately rapid	0.35 to 0.59 in	5.1 to 6.5
3C -- 34 to 60 in	gravelly sand	rapid	0.52 to 1.82 in	5.6 to 7.8

871--Indus and Brickton soils

Indus

Extent: 43 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: clayey lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	clay	moderately slow	0.41 to 0.54 in	5.1 to 7.3
Eg -- 3 to 6 in	loam	moderately slow	0.52 to 0.63 in	5.1 to 7.3
B/E,Btg,BCg -- 6 to 29 in	clay	impermeable	2.79 to 3.72 in	5.6 to 8.4
Cg1,Cg2 -- 29 to 60 in	clay	impermeable	3.07 to 4.30 in	7.4 to 8.4

Brickton

Extent: 43 percent of the unit
Landform(s): flats on lake plains
Slope gradient: 0 to 2 percent
Parent material: clayey lacustrine deposits
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .43
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: C
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	silt loam	moderate	0.87 to 0.94 in	5.6 to 7.3
E -- 4 to 10 in	silt loam	moderate	0.94 to 1.18 in	5.6 to 7.3
Btg.BC -- 10 to 25 in	silty clay	moderately slow	2.46 to 2.92 in	5.1 to 7.8
Cg1,Cg2 -- 25 to 60 in	clay	moderately slow	5.54 to 7.62 in	7.4 to 8.4

872--Pengilly-Winterfield association

Pengilly

Extent: 60 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 7w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 4 in	very fine sandy loam	moderately rapid	0.51 to 0.87 in	5.6 to 7.3
C1,C2 -- 4 to 60 in	stratified loamy very fine sand to silt loam	moderate	6.71 to 11.18 in	6.1 to 8.4

Winterfield

Extent: 25 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): 2
Wind erodibility index (WEI): 134
Kw factor (surface layer) .17
Land capability, nonirrigated 7w
Hydric soil: no
Hydrologic group: A/D
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.6 to 7.8
C1 -- 3 to 14 in	loamy fine sand	rapid	0.66 to 1.21 in	5.6 to 7.8
C2,C3,C4 -- 14 to 60 in	sand	rapid	1.83 to 4.57 in	5.6 to 8.4

995--Borosaprists, depressional

Borosaprists, depressional

Extent: 85 percent of the unit
Landform(s): bogs
Slope gradient: 0 to 1 percent
Parent material: 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 6w
Hydric soil: yes
Hydrologic group: A/D
Potential for frost action: high

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oa1 -- 0 to 28 in	muck	moderately rapid	9.78 to 12.58 in	
Oe,Oa2,Oa3 -- 28 to 60 in	muck	moderately rapid	11.16 to 14.35 in	

1031--Histosols, ponded

Histosols, ponded

Extent: 95 percent of the unit
Landform(s): swamps
Slope gradient: 0 to 1 percent
Parent material: herbaceous organic material over sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 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:

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
Oe -- 0 to 40 in	mucky peat	rapid	14.06 to 18.07 in	
Cg -- 40 to 60 in	fine sand	rapid	1.18 to 1.38 in	

1033--Aquents, sandy

Aquents, sandy

Extent: 85 percent of the unit
Landform(s): beaches
Slope gradient: 0 to 1 percent
Parent material: sandy outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: very poorly drained

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

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

1041--Pits, mine

Pits, mine

Extent: 95 percent of the unit
Landform(s):
Slope gradient: 0 to 50 percent
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class:

Soil loss tolerance (T factor): 5
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*

1042--Dumps, mine

Dumps, mine

Extent: 95 percent of the unit
Landform(s):
Slope gradient: 0 to 50 percent
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class:

Soil loss tolerance (T factor): 5
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*

1043C--Udorthents, nearly level to rolling

Udorthents, nearly level to rolling

Extent: 90 percent of the unit
Landform(s):
Slope gradient: 2 to 12 percent
Parent 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,C -- 0 to 80 in	loam	moderately rapid	6.39 to 11.19 in	6.6 to 9.0

1043F--Udorthents, very steep

Udorthents, very steep

Extent: 90 percent of the unit
Landform(s):
Slope gradient: 30 to 50 percent
Parent 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): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: B
Potential for frost action: moderate

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A,C -- 0 to 80 in	loam	moderately rapid	6.39 to 11.19 in	6.6 to 9.0

1044--Slickens

Slickens

Extent: 95 percent of the unit
Landform(s):
Slope gradient: 0 to 8 percent
Parent material:
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class:

Soil loss tolerance (T factor): 5
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*

1826B--Nashwauk-Menahga complex, 1 to 10 percent slopes

Nashwauk

Extent: 55 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 10 percent
Parent material: loamy till
Restrictive feature(s): dense material at 6 to 14 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 3
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .24
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 1 in	fine sandy loam	moderate	0.10 to 0.16 in	5.1 to 6.5
E,Bw -- 1 to 7 in	fine sandy loam	moderate	0.88 to 1.13 in	4.5 to 6.0
E',B/E -- 7 to 10 in	fine sandy loam	slow	0.28 to 0.39 in	5.1 to 6.5
Bt -- 10 to 52 in	loam	slow	3.37 to 5.90 in	5.1 to 6.5
C -- 52 to 60 in	silt loam	slow	0.24 to 0.79 in	6.1 to 8.4

Menahga

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 1 to 10 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*
A -- 0 to 1 in	loamy sand	rapid	0.12 to 0.14 in	4.5 to 6.5
E,Bw,BC -- 1 to 38 in	sand	rapid	2.56 to 3.30 in	4.5 to 6.5
C -- 38 to 60 in	coarse sand	rapid	1.10 to 1.54 in	5.6 to 6.5

1826D--Nashwauk-Menahga complex, 10 to 25 percent slopes

Nashwauk

Extent: 45 percent of the unit
Landform(s): moraines
Slope gradient: 10 to 25 percent
Parent material: loamy till
Restrictive feature(s): dense material at 6 to 14 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.41 to 0.50 in	5.1 to 6.5
E,Bw -- 3 to 4 in	fine sandy loam	moderate	0.11 to 0.14 in	4.5 to 6.0
E',B/E -- 4 to 12 in	fine sandy loam	slow	0.79 to 1.10 in	5.1 to 6.5
Bt -- 12 to 58 in	clay loam	slow	3.69 to 6.45 in	5.1 to 6.5
C -- 58 to 60 in	loam	slow	0.06 to 0.20 in	6.1 to 8.4

Menahga

Extent: 40 percent of the unit
Landform(s): moraines
Slope gradient: 10 to 25 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*
A -- 0 to 1 in	loamy sand	rapid	0.12 to 0.14 in	4.5 to 6.5
E,Bw,BC -- 1 to 38 in	sand	rapid	2.56 to 3.30 in	4.5 to 6.5
C -- 38 to 60 in	coarse sand	rapid	1.10 to 1.54 in	5.6 to 6.5

1883D--Nashwauk-Rock outcrop complex, 6 to 25 percent slopes

Nashwauk

Extent: 55 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 25 percent
Parent material: loamy till
Restrictive feature(s): dense material at 6 to 14 inches
Flooding: none
Ponding: none
Drainage class: well drained

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

Representative soil profile:	*Texture*	*Permeability*	*Available water capacity*	*pH*
A -- 0 to 1 in	fine sandy loam	moderately rapid	0.10 to 0.13 in	5.1 to 6.5
E,Bw -- 1 to 7 in	fine sandy loam	moderate	0.88 to 1.13 in	4.5 to 6.0
E',B/E -- 7 to 16 in	loam	slow	0.91 to 1.27 in	5.1 to 6.5
Bt -- 16 to 58 in	loam	slow	3.34 to 5.84 in	5.1 to 6.5
C -- 58 to 60 in	silt loam	slow	0.06 to 0.20 in	6.1 to 8.4

Rock outcrop

Extent: 30 percent of the unit
Landform(s): moraines
Slope gradient: 6 to 25 percent
Parent material: igneous, metamorphic and sedimentary rock
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*

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.