

Map Unit Description (MN)

Isanti 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]

120--Brill silt loam

Brill

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: silty drift over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 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: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.94 in	4.5 to 7.3
E -- 4 to 14 in	silt loam	moderate	1.64 to 2.25 in	4.5 to 6.5
B/E,Bt -- 14 to 25 in	silt loam	moderate	1.76 to 2.43 in	4.5 to 6.5
2C -- 25 to 60 in	gravelly sand	rapid	0.35 to 2.43 in	4.5 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

302--Rosholt fine sandy loam

Rosholt

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 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): 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: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.39 to 0.71 in	4.5 to 7.3
E,E/B -- 4 to 20 in	fine sandy loam	moderately rapid	1.61 to 3.55 in	4.5 to 6.5
Bt1 -- 20 to 28 in	fine sandy loam	moderately rapid	0.71 to 1.50 in	4.5 to 6.5
2BC -- 28 to 34 in	gravelly loamy sand	moderately rapid	0.24 to 0.94 in	4.5 to 6.5
2C -- 34 to 60 in	stratified coarse sand to extremely gravelly sand	rapid	0.52 to 1.04 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

541--Rifle and Seelyeville soils

Rifle

Extent: 45 percent of the unit

Landform(s): depressions

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 6w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oe --	0 to 60 in mucky peat	rapid	20.94 to 26.93 in	

Seelyeville

Extent: 45 percent of the unit

Landform(s): depressions

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 6w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oe --	0 to 10 in mucky peat	rapid	3.44 to 4.43 in	
Oa --	10 to 60 in muck	moderately rapid	17.50 to 22.50 in	

Map Unit Description (MN)

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543--Markey muck

Markey

Extent: 95 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material: 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): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa -- 0 to 32 in	muck	moderately rapid	11.16 to 14.35 in	
Cg -- 32 to 60 in	fine sand	rapid	0.84 to 2.24 in	

544--Cathro muck

Cathro

Extent: 95 percent of the unit

Landform(s): depressions

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): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oa1 -- 0 to 11 in	muck	moderately rapid	4.96 to 6.06 in	
Oa2 -- 11 to 23 in	muck	moderately rapid	4.13 to 5.31 in	
Cg -- 23 to 60 in	loam	moderate	4.07 to 8.14 in	

Map Unit Description (MN)

Isanti County, Minnesota

683--Chetek loamy sand, moderately wet

Chetek, moderately wet

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately 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 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E -- 5 to 12 in	sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2BC -- 18 to 25 in	gravelly loamy sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2C -- 25 to 60 in	gravelly coarse sand	very rapid	0.35 to 2.08 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

686--Anigon very fine sandy loam

Anigon

Extent: 95 percent of the unit

Landform(s): lake plains, outwash plains

Slope gradient: 2 to 7 percent

Parent material: silty drift 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): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .24

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	very fine sandy loam	moderate	0.63 to 0.69 in	5.1 to 6.5
E -- 3 to 14 in	silt loam	moderate	1.76 to 2.43 in	4.5 to 6.5
B/E,Bt -- 14 to 22 in	silt loam	moderate	1.26 to 1.73 in	4.5 to 6.5
2C -- 22 to 60 in	gravelly sand	rapid	0.38 to 2.65 in	4.5 to 6.5

730B--Sanburn fine sandy loam, 2 to 7 percent slopes

Sanburn

Extent: 90 percent of the unit

Landform(s): outwash plains, moraines

Slope gradient: 2 to 7 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) .20

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 19 in	sandy loam	moderately rapid	0.96 to 1.65 in	5.1 to 6.5
2BC,2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	5.1 to 6.5

Map Unit Description (MN)

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730C--Sanburn fine sandy loam, 7 to 12 percent slopes

Sanburn

Extent: 90 percent of the unit
Landform(s): outwash plains, moraines
Slope gradient: 7 to 12 percent
Parent material: outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 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: B
Potential for frost action: low

Representative soil profile:	Texture	Permeability	Available water capacity	pH
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 19 in	sandy loam	moderately rapid	0.96 to 1.65 in	5.1 to 6.5
2BC,2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	5.1 to 6.5

730D--Sanburn fine sandy loam, 7 to 18 percent slopes

Sanburn

Extent: 90 percent of the unit
Landform(s): outwash plains, moraines
Slope gradient: 7 to 18 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) .20
Land capability, nonirrigated 4e
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	fine sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 19 in	sandy loam	moderately rapid	0.96 to 1.65 in	5.1 to 6.5
2BC,2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	5.1 to 6.5

Map Unit Description (MN)

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730E--Sanburn fine sandy loam, 12 to 25 percent slopes

Sanburn

Extent: 90 percent of the unit
Landform(s): outwash plains, moraines
Slope gradient: 12 to 25 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) .20
Land capability, nonirrigated 6e
Hydric soil: no
Hydrologic group: B
Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sandy loam	moderately rapid	0.61 to 0.77 in	5.1 to 6.5
Bt -- 5 to 19 in	sandy loam	moderately rapid	0.96 to 1.65 in	5.1 to 6.5
2BC,2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

1030--Pits, gravel-Udipsamments complex

Pits, gravel

Extent: 80 percent of the unit

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

Slope gradient: 0 to 45 percent

Parent material: sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

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

Extent: 20 percent of the unit

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

Slope gradient: 0 to 6 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class: excessively drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group: A

Potential for frost action:

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

Isanti County, Minnesota

1253B--Stonelake-Sanburn complex, 2 to 7 percent slopes

Stonelake

Extent: 60 percent of the unit

Landform(s): moraines, outwash plains

Slope gradient: 2 to 7 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): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .17

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	gravelly sandy loam	rapid	0.39 to 0.59 in	5.1 to 6.5
Bw -- 4 to 11 in	gravelly coarse sand	very rapid	0.21 to 0.28 in	5.1 to 6.5
Bt -- 11 to 24 in	very gravelly coarse sand	very rapid	0.39 to 1.04 in	5.1 to 6.5
BC,C -- 24 to 60 in	gravelly sand	very rapid	0.72 to 1.79 in	5.1 to 7.8

Sanburn

Extent: 30 percent of the unit

Landform(s): moraines, outwash plains

Slope gradient: 2 to 7 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) .20

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 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 60 in	gravelly coarse sand	rapid	0.80 to 1.59 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

1253D--Stonelake-Sanburn complex, 7 to 18 percent slopes

Stonelake

Extent: 65 percent of the unit

Landform(s): moraines, outwash plains

Slope gradient: 7 to 18 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): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .17

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	gravelly sandy loam	rapid	0.39 to 0.59 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 60 in	gravelly sand	very rapid	0.36 to 2.15 in	5.1 to 7.3

Sanburn

Extent: 25 percent of the unit

Landform(s): moraines, outwash plains

Slope gradient: 7 to 18 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) .20

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 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 60 in	gravelly coarse sand	very rapid	0.80 to 1.59 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

1253D2--Stonelake-Sanburn complex, 7 to 18 percent slopes, moderately eroded

Stonelake, moderately eroded

Extent: 65 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 7 to 18 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): 8
Wind erodibility index (WEI): 0
Kw factor (surface layer) .17
Land capability, nonirrigated 6s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	gravelly sandy loam	rapid	0.31 to 0.47 in	5.1 to 6.5
Bw -- 3 to 11 in	gravelly coarse sand	very rapid	0.08 to 0.71 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 60 in	gravelly sand	very rapid	0.36 to 2.15 in	5.1 to 7.3

Sanburn, moderately eroded

Extent: 25 percent of the unit
Landform(s): moraines, outwash plains
Slope gradient: 7 to 18 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) .20
Land capability, nonirrigated 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	sandy loam	moderately rapid	0.47 to 0.59 in	5.1 to 6.5
Bt -- 4 to 20 in	gravelly sandy loam	moderately rapid	1.13 to 1.94 in	5.1 to 6.5
2BC,2C -- 20 to 60 in	gravelly coarse sand	very rapid	0.80 to 1.59 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

1253E3--Stonelake-Sanburn complex, 12 to 25 percent slopes, severely eroded

Stonelake, severely eroded

Extent: 65 percent of the unit

Landform(s): moraines, outwash plains

Slope gradient: 12 to 25 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): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .17

Land capability, nonirrigated 7s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	gravelly sandy loam	rapid	0.20 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 60 in	gravelly coarse sand	very rapid	0.87 to 2.19 in	5.1 to 7.8

Sanburn, severely eroded

Extent: 25 percent of the unit

Landform(s): moraines, outwash plains

Slope gradient: 12 to 25 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) .20

Land capability, nonirrigated 6e

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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 60 in	coarse sand	rapid	0.91 to 1.83 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

1255--Elkriver fine sandy loam, occasionally flooded

Elkriver, occasionally flooded

Extent: 95 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: alluvium

Restrictive feature(s): greater than 60 inches

Flooding: occasional

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 2w

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 10 in	fine sandy loam	moderately rapid	1.57 to 1.97 in	5.1 to 7.3
A2,A3 -- 10 to 24 in	fine sandy loam	moderately rapid	2.13 to 2.83 in	5.1 to 7.3
Bw -- 24 to 32 in	very fine sandy loam	moderately rapid	1.18 to 1.50 in	5.6 to 7.8
2C -- 32 to 60 in	sand	rapid	0.56 to 2.80 in	5.6 to 7.8

A--Alluvial land, well drained

Alluvial land, well drained, occasionally flooded

Extent: 95 percent of the unit

Landform(s): flood plains

Slope gradient: 0 to 2 percent

Parent material: sandy alluvium

Restrictive feature(s): greater than 60 inches

Flooding: occasional

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .15

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 15 in	loamy sand	rapid	0.90 to 1.80 in	5.1 to 7.0
C -- 15 to 60 in	stratified coarse sand to fine sand	rapid	1.80 to 6.28 in	5.1 to 7.0

Map Unit Description (MN)

Isanti County, Minnesota

Ad--Adolph silty clay loam

Adolph

Extent: 95 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: 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): 7

Wind erodibility index (WEI): 38

Kw factor (surface layer) .28

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 9 in	silty clay loam	moderate	1.63 to 2.17 in	5.6 to 7.3
Bg -- 9 to 35 in	silty clay loam	moderate	4.68 to 6.24 in	5.6 to 7.3
2BCd -- 35 to 60 in	sandy loam	impermeable	0.00 to 0.99 in	5.6 to 7.3

Aw--Alluvial land, poorly drained

Alluvial land, poorly drained, frequently flooded

Extent: 95 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: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 16 in	silt loam	moderate	2.91 to 3.87 in	5.6 to 7.8
C -- 16 to 80 in	stratified loamy sand to silt loam	rapid	2.55 to 12.76 in	5.6 to 7.8

Map Unit Description (MN)

Isanti County, Minnesota

B--Hayden silt loam, 2 to 7 percent slopes

Hayden

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 2 to 7 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.69 in	5.1 to 7.8
E -- 3 to 8 in	fine sandy loam	moderate	0.43 to 0.85 in	5.1 to 7.8
Bt -- 8 to 42 in	fine sandy loam	moderate	3.08 to 6.17 in	5.1 to 7.8
C -- 42 to 60 in	sandy clay loam	moderate	1.59 to 3.19 in	5.1 to 6.5

Bc--Bluffton loam and silty clay loam

Bluffton

Extent: 95 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 2 percent

Parent material: loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 19 in	loam	moderate	3.78 to 4.54 in	5.6 to 7.3
Bg -- 19 to 22 in	sandy clay loam	moderate	0.47 to 0.54 in	5.6 to 7.3
Cg -- 22 to 60 in	loam	moderately slow	5.67 to 7.18 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Bd--Hayden silt loam, 7 to 12 percent slopes, moderately eroded

Hayden, moderately eroded

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 7 to 12 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.76 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Bk--Brickton silt loam

Brickton

Extent: 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material: silty 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): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.94 in	5.6 to 7.8
E -- 4 to 10 in	loamy very fine sand	moderately rapid	1.00 to 1.12 in	5.6 to 7.8
Btg,BCg -- 10 to 30 in	loam	moderate	3.41 to 4.42 in	6.1 to 7.8
Cg -- 30 to 60 in	very fine sandy loam	moderate	5.09 to 6.58 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Bp--Hayden silt loam, 7 to 12 percent slopes

Hayden

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 7 to 12 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.76 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Br--Hayden silt loam, 12 to 18 percent slopes

Hayden

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 12 to 18 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.76 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Bu--Hayden silt loam, 2 to 7 percent slopes, moderately eroded

Hayden, moderately eroded

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 2 to 7 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.69 in	5.1 to 7.8
E -- 3 to 8 in	fine sandy loam	moderate	0.43 to 0.85 in	5.1 to 7.8
Bt -- 8 to 42 in	fine sandy loam	moderate	3.08 to 6.17 in	5.1 to 7.8
C -- 42 to 60 in	sandy clay loam	moderate	1.59 to 3.19 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

Bv--Brickton silt loam, clayey subsoil variant

Brickton, clayey subsoil

Extent: 95 percent of the unit

Landform(s): lake plains

Slope gradient: 0 to 2 percent

Parent material: 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) .43

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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,BCg -- 10 to 30 in	silty clay	moderately slow	3.21 to 3.81 in	5.1 to 7.8
Cg -- 30 to 60 in	silty clay	moderately slow	4.79 to 6.58 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Bx--Hayden silt loam, 12 to 18 percent slopes, moderately eroded

Hayden, moderately eroded

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 12 to 18 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	silt loam	moderate	0.50 to 0.76 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

C--Chetek loamy sand, 2 to 7 percent slopes

Chetek

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 7 percent

Parent material: 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): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .15

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E -- 5 to 12 in	sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2BC -- 18 to 25 in	gravelly loamy sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2C -- 25 to 60 in	gravelly coarse sand	very rapid	0.35 to 2.08 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

Cd--Chetek loamy sand, 7 to 12 percent slopes, moderately eroded

Chetek, moderately eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 to 12 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): 3

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .15

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E -- 5 to 12 in	sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2BC -- 18 to 25 in	gravelly loamy sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2C -- 25 to 60 in	gravelly coarse sand	very rapid	0.35 to 2.08 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

Cp--Chetek loamy sand, 7 to 12 percent slopes

Chetek

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 to 12 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): 3

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .15

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E -- 5 to 12 in	sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2BC -- 18 to 25 in	gravelly loamy sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2C -- 25 to 60 in	gravelly coarse sand	very rapid	0.35 to 2.08 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

Cx--Chetek loamy sand, 12 to 18 percent slopes, moderately eroded

Chetek, moderately eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 12 to 18 percent

Parent material: sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 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: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E -- 5 to 12 in	sandy loam	moderately rapid	0.67 to 1.14 in	5.1 to 6.0
Bt -- 12 to 18 in	sandy loam	moderately rapid	0.57 to 1.20 in	5.1 to 6.0
2BC -- 18 to 25 in	gravelly loamy sand	rapid	0.07 to 0.64 in	5.1 to 6.5
2C -- 25 to 60 in	gravelly coarse sand	very rapid	0.35 to 2.08 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

D--Dalbo silt loam, 2 to 7 percent slopes

Dalbo

Extent: 95 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 7 percent

Parent material: silty 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): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.71 to 0.94 in	6.1 to 7.3
E -- 4 to 10 in	fine sandy loam	moderately rapid	0.89 to 1.18 in	6.1 to 7.3
Bt -- 10 to 32 in	silt loam	moderate	3.53 to 4.85 in	6.1 to 7.3
C -- 32 to 60 in	silt loam	moderate	3.91 to 6.15 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Df--Dalbo fine sandy loam, 2 to 12 percent slopes

Dalbo

Extent: 95 percent of the unit

Landform(s): lake plains

Slope gradient: 2 to 12 percent

Parent material: silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	fine sandy loam	moderately rapid	0.63 to 0.87 in	6.1 to 7.3
E -- 4 to 10 in	fine sandy loam	moderately rapid	0.89 to 1.18 in	6.1 to 7.3
Bt -- 10 to 32 in	silt loam	moderate	3.53 to 4.85 in	6.1 to 7.3
C -- 32 to 60 in	silt loam	moderate	3.91 to 6.15 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Dp--Dalbo silt loam, 7 to 12 percent slopes

Dalbo

Extent: 95 percent of the unit

Landform(s): lake plains

Slope gradient: 7 to 12 percent

Parent material: silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.71 to 0.94 in	6.1 to 7.3
E -- 4 to 10 in	fine sandy loam	moderately rapid	0.89 to 1.18 in	6.1 to 7.3
Bt -- 10 to 32 in	silt loam	moderate	3.53 to 4.85 in	6.1 to 7.3
C -- 32 to 60 in	silt loam	moderate	3.91 to 6.15 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Dx--Dalbo silt loam, 12 to 18 percent slopes, moderately eroded

Dalbo, moderately eroded

Extent: 95 percent of the unit

Landform(s): lake plains

Slope gradient: 12 to 18 percent

Parent material: silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.71 to 0.94 in	6.1 to 7.3
E -- 4 to 10 in	fine sandy loam	moderately rapid	0.89 to 1.18 in	6.1 to 7.3
Bt -- 10 to 32 in	silt loam	moderate	3.53 to 4.85 in	6.1 to 7.3
C -- 32 to 60 in	silt loam	moderate	3.91 to 6.15 in	7.4 to 8.4

E--Emmert loamy fine sand, 12 to 25 percent slopes

Emmert

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 12 to 25 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) .10

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E,Bt -- 3 to 30 in	gravelly loamy sand	rapid	1.34 to 4.02 in	5.1 to 6.5
C -- 30 to 60 in	very gravelly coarse sand	very rapid	0.30 to 1.80 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

Eh--Emmert loamy fine sand, 12 to 25 percent slopes, moderately eroded

Emmert, moderately eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 12 to 25 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) .10

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E,Bt -- 3 to 30 in	gravelly loamy sand	rapid	1.34 to 4.02 in	5.1 to 6.5
C -- 30 to 60 in	very gravelly coarse sand	very rapid	0.30 to 1.80 in	5.1 to 6.5

Es--Emmert loamy fine sand, 18 to 25 percent slopes, severely eroded

Emmert, severely eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 18 to 25 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) .10

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	loamy fine sand	rapid	0.31 to 0.38 in	5.1 to 6.5
E,Bt -- 3 to 30 in	gravelly loamy sand	rapid	1.34 to 4.02 in	5.1 to 6.5
C -- 30 to 60 in	very gravelly coarse sand	very rapid	0.30 to 1.80 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

F--Freer silt loam

Freer

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 0 to 2 percent

Parent material: silty lacustrine deposits over loamy till

Restrictive feature(s): dense material at 30 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) .37

Land capability, nonirrigated 2w

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.94 in	4.5 to 6.0
E -- 4 to 10 in	silt loam	moderate	1.06 to 1.30 in	4.5 to 6.0
B/E -- 10 to 16 in	silt loam	moderate	0.88 to 1.32 in	5.1 to 6.0
Bt -- 16 to 32 in	loam	moderate	2.68 to 2.99 in	5.1 to 6.0
2Bt,2Cd -- 32 to 60 in	sandy loam	impermeable	0.00 to 1.12 in	5.6 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

G--Anoka loamy fine sand, 0 to 2 percent slopes

Anoka

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: occasional

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: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	1.02 to 1.26 in	5.6 to 6.5
E -- 8 to 32 in	very fine sand	moderate	2.40 to 3.84 in	5.1 to 6.5
Bt -- 32 to 54 in	very fine sandy loam	moderate	2.20 to 3.53 in	5.1 to 6.5
E&Bt -- 54 to 60 in	fine sand	rapid	0.35 to 0.71 in	6.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Gp--Anoka loamy fine sand, 7 to 12 percent slopes

Anoka

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 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 4e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	1.02 to 1.26 in	5.6 to 6.5
E -- 8 to 32 in	very fine sand	moderate	2.40 to 3.84 in	5.1 to 6.5
Bt -- 32 to 54 in	very fine sandy loam	moderate	2.20 to 3.53 in	5.1 to 6.5
E&Bt -- 54 to 60 in	fine sand	rapid	0.35 to 0.71 in	6.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Gu--Anoka loamy fine sand, 2 to 7 percent slopes

Anoka

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 7 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 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	1.02 to 1.26 in	5.6 to 6.5
E -- 8 to 32 in	very fine sand	moderate	2.40 to 3.84 in	5.1 to 6.5
Bt -- 32 to 54 in	very fine sandy loam	moderate	2.20 to 3.53 in	5.1 to 6.5
E&Bt -- 54 to 60 in	fine sand	rapid	0.35 to 0.71 in	6.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Gy--Anoka loamy fine sand, 7 to 18 percent slopes, moderately eroded

Anoka, moderately eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 to 18 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 6e

Hydric soil: no

Hydrologic group: A

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loamy fine sand	rapid	1.02 to 1.26 in	5.6 to 6.5
E -- 8 to 32 in	very fine sand	moderate	2.40 to 3.84 in	5.1 to 6.5
Bt -- 32 to 54 in	very fine sandy loam	moderate	2.20 to 3.53 in	5.1 to 6.5
E&Bt -- 54 to 60 in	fine sand	rapid	0.35 to 0.71 in	6.1 to 7.3

H--Hubbard loamy fine sand, 0 to 2 percent slopes

Hubbard

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 13 in	loamy fine sand	rapid	1.04 to 1.56 in	5.1 to 7.3
AB,Bw -- 13 to 40 in	sand	rapid	0.81 to 1.90 in	5.1 to 7.3
C -- 40 to 60 in	sand	rapid	0.59 to 1.38 in	5.6 to 7.8

Map Unit Description (MN)

Isanti County, Minnesota

Hp--Hubbard loamy fine sand, 7 to 12 percent slopes

Hubbard

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 13 in	loamy fine sand	rapid	1.04 to 1.56 in	5.1 to 7.3
AB,Bw -- 13 to 40 in	sand	rapid	0.81 to 1.90 in	5.1 to 7.3
C -- 40 to 60 in	sand	rapid	0.59 to 1.38 in	5.6 to 7.8

Hu--Hubbard loamy fine sand, 2 to 7 percent slopes

Hubbard

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 7 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 13 in	loamy fine sand	rapid	1.04 to 1.56 in	5.1 to 7.3
AB,Bw -- 13 to 40 in	sand	rapid	0.81 to 1.90 in	5.1 to 7.3
C -- 40 to 60 in	sand	rapid	0.59 to 1.38 in	5.6 to 7.8

Map Unit Description (MN)

Isanti County, Minnesota

Is--Isanti mucky loamy fine sand

Isanti

Extent: 95 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 10 in	mucky loamy fine sand	rapid	0.98 to 1.18 in	5.1 to 6.5
Bg -- 10 to 30 in	fine sand	rapid	1.20 to 1.61 in	5.1 to 6.5
Cg -- 30 to 60 in	fine sand	rapid	1.50 to 2.09 in	5.6 to 7.8

L--Lino loamy fine sand

Lino

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat 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: 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	loamy fine sand	rapid	0.39 to 0.47 in	5.1 to 6.0
Bw -- 4 to 16 in	fine sand	rapid	0.73 to 0.98 in	5.1 to 6.0
C -- 16 to 60 in	fine sand	rapid	2.19 to 3.06 in	5.1 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

M--Milaca silt loam, 2 to 7 percent slopes

Milaca

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 7 percent

Parent material: 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	silt loam	moderately rapid	0.26 to 0.35 in	5.1 to 6.5
E,B/E -- 2 to 15 in	silt loam	moderately rapid	1.69 to 2.34 in	5.1 to 6.5
Bt -- 15 to 42 in	fine sandy loam	moderately rapid	2.72 to 4.07 in	5.1 to 6.5
BCd -- 42 to 60 in	fine sandy loam	very slow	0.89 to 1.42 in	5.6 to 7.3

M-W--Water, miscellaneous

Water, miscellaneous

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

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

Isanti County, Minnesota

Md--Milaca fine sandy loam, 7 to 12 percent slopes, moderately eroded

Milaca, moderately eroded

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 7 to 12 percent

Parent material: loamy till

Restrictive feature(s): dense material at 40 to 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 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

Map Unit Description (MN)

Isanti County, Minnesota

Mf--Milaca fine sandy loam, 2 to 7 percent slopes

Milaca

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 7 percent

Parent material: 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): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

Map Unit Description (MN)

Isanti County, Minnesota

Mn--Milaca fine sandy loam, 7 to 12 percent slopes

Milaca

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 7 to 12 percent

Parent material: loamy till

Restrictive feature(s): dense material at 40 to 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 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E -- 3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt -- 13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C -- 34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

Map Unit Description (MN)

Isanti County, Minnesota

Mp--Milaca silt loam, 7 to 12 percent slopes

Milaca

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 7 to 12 percent

Parent material: 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): 56

Kw factor (surface layer) .37

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	silt loam	moderately rapid	0.26 to 0.35 in	5.1 to 6.5
E,B/E -- 2 to 15 in	silt loam	moderately rapid	1.69 to 2.34 in	5.1 to 6.5
Bt -- 15 to 42 in	fine sandy loam	moderately rapid	2.72 to 4.07 in	5.1 to 6.5
BCd -- 42 to 60 in	fine sandy loam	very slow	0.89 to 1.42 in	5.6 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Mr--Milaca fine sandy loam, 12 to 18 percent slopes

Milaca

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 18 percent

Parent material: loamy till

Restrictive feature(s): dense material at 40 to 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

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E --	3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt --	13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C --	34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

Map Unit Description (MN)

Isanti County, Minnesota

Ms--Milaca fine sandy loam, 12 to 25 percent slopes, severely eroded

Milaca, severely eroded

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 25 percent

Parent material: loamy till

Restrictive feature(s): dense material at 40 to 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 6e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 3 in	fine sandy loam	moderate	0.31 to 0.57 in	5.6 to 6.5
E --	3 to 13 in	fine sandy loam	moderate	0.98 to 1.48 in	5.6 to 6.5
Bt --	13 to 34 in	fine sandy loam	moderately slow	2.50 to 3.34 in	5.1 to 7.3
C --	34 to 60 in	sandy loam	moderately slow	2.60 to 3.64 in	5.6 to 7.8

Map Unit Description (MN)

Isanti County, Minnesota

Mx--Milaca silt loam, 12 to 18 percent slopes, moderately eroded

Milaca, moderately eroded

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 18 percent

Parent material: 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): 56

Kw factor (surface layer) .37

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	silt loam	moderately rapid	0.26 to 0.35 in	5.1 to 6.5
E,B/E -- 2 to 15 in	silt loam	moderately rapid	1.69 to 2.34 in	5.1 to 6.5
Bt -- 15 to 42 in	fine sandy loam	moderately rapid	2.72 to 4.07 in	5.1 to 6.5
BCd -- 42 to 60 in	fine sandy loam	very slow	0.89 to 1.42 in	5.6 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

N--Blomford loamy fine sand

Blomford

Extent: 95 percent of the unit

Landform(s): swales 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): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	loamy fine sand	rapid	0.25 to 0.38 in	5.1 to 7.3
Eg -- 3 to 30 in	loamy fine sand	rapid	1.34 to 2.14 in	5.1 to 7.3
2Btg -- 30 to 42 in	sandy clay loam	moderate	1.59 to 2.07 in	5.1 to 7.3
2Cg -- 42 to 60 in	loam	moderate	1.77 to 2.66 in	6.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Nd--Braham loamy fine sand, 7 to 12 percent slopes, moderately eroded

Braham, moderately eroded

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 7 to 12 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 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 4 in	loamy fine sand	rapid	0.39 to 0.47 in	5.6 to 7.3
E --	4 to 35 in	loamy fine sand	rapid	2.49 to 3.11 in	5.6 to 7.3
2Bt --	35 to 45 in	sandy clay loam	moderate	1.48 to 1.77 in	5.1 to 7.3
2Bk --	45 to 60 in	sandy clay loam	moderate	2.24 to 2.69 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Np--Braham loamy fine sand, 7 to 12 percent slopes

Braham

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 7 to 12 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 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	loamy fine sand	rapid	0.39 to 0.47 in	5.6 to 7.3
E -- 4 to 35 in	loamy fine sand	rapid	2.49 to 3.11 in	5.6 to 7.3
2Bt -- 35 to 45 in	sandy clay loam	moderate	1.48 to 1.77 in	5.1 to 7.3
2Bk -- 45 to 60 in	sandy clay loam	moderate	2.24 to 2.69 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Nu--Braham loamy fine sand, 2 to 7 percent slopes

Braham

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 2 to 7 percent

Parent material: sandy outwash over 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): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	loamy fine sand	rapid	0.39 to 0.47 in	5.6 to 7.3
E -- 4 to 35 in	loamy fine sand	rapid	2.49 to 3.11 in	5.6 to 7.3
2Bt -- 35 to 45 in	sandy clay loam	moderate	1.48 to 1.77 in	5.1 to 7.3
2Bk -- 45 to 60 in	sandy clay loam	moderate	2.24 to 2.69 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Nx--Braham loamy fine sand, 12 to 18 percent slopes, moderately eroded

Braham, moderately eroded

Extent: 95 percent of the unit

Landform(s): moraines

Slope gradient: 12 to 18 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 6e

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 4 in	loamy fine sand	rapid	0.39 to 0.47 in	5.6 to 7.3
E --	4 to 35 in	loamy fine sand	rapid	2.49 to 3.11 in	5.6 to 7.3
2Bt --	35 to 45 in	sandy clay loam	moderate	1.48 to 1.77 in	5.1 to 7.3
2Bk --	45 to 60 in	sandy clay loam	moderate	2.24 to 2.69 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

T--Hayden fine sandy loam, 2 to 7 percent slopes

Hayden

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 2 to 7 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.69 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Td--Hayden fine sandy loam, 7 to 12 percent slopes, moderately eroded

Hayden, moderately eroded

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 7 to 12 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 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.69 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Tp--Hayden fine sandy loam, 7 to 12 percent slopes

Hayden

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 7 to 12 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 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.69 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Tr--Hayden fine sandy loam, 12 to 18 percent slopes

Hayden

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 12 to 18 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.69 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Tu--Hayden fine sandy loam, 2 to 7 percent slopes, moderately eroded

Hayden, moderately eroded

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 2 to 7 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.69 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Tx--Hayden fine sandy loam, 12 to 18 percent slopes, moderately eroded

Hayden, moderately eroded

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 12 to 18 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.31 to 0.69 in	5.1 to 7.8
E -- 3 to 8 in	loam	moderate	0.47 to 1.04 in	5.1 to 7.8
Bt -- 8 to 42 in	loam	moderate	3.43 to 6.51 in	5.1 to 7.8
C -- 42 to 60 in	loam	moderately slow	1.59 to 3.37 in	5.1 to 8.4

U--Beach sand

Beach, sandy

Extent: 90 percent of the unit

Landform(s): beaches

Slope gradient: 0 to 7 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) .05

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
AC -- 0 to 60 in	gravelly sand	very rapid	1.20 to 2.39 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

V--Burnsville-Rodman complex, 2 to 7 percent slopes

Burnsville

Extent: 55 percent of the unit

Landform(s): outwash plains, moraines

Slope gradient: 2 to 7 percent

Parent material: loamy drift over outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	sandy loam	moderate	0.59 to 1.30 in	5.1 to 7.8
E -- 6 to 16 in	sandy loam	moderate	1.02 to 2.25 in	5.1 to 7.8
Bt -- 16 to 36 in	sandy loam	moderate	1.97 to 3.74 in	5.1 to 7.8
2BC -- 36 to 40 in	gravelly coarse sand	rapid	0.26 to 0.43 in	6.6 to 8.4
2C -- 40 to 60 in	gravelly coarse sand	rapid	0.39 to 0.79 in	7.4 to 8.4

Rodman

Extent: 40 percent of the unit

Landform(s): outwash plains, moraines

Slope gradient: 2 to 7 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loamy sand	rapid	0.91 to 1.09 in	5.6 to 7.3
Bt -- 9 to 19 in	gravelly loamy sand	rapid	0.89 to 1.08 in	6.1 to 7.3
C -- 19 to 80 in	gravelly sand	very rapid	1.22 to 2.44 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Vd--Burnsville-Rodman complex, 7 to 12 percent slopes, moderately eroded

Burnsville, moderately eroded

Extent: 55 percent of the unit

Landform(s): outwash plains, moraines

Slope gradient: 7 to 12 percent

Parent material: loamy drift

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 4 in	sandy loam	moderate	0.39 to 0.87 in	5.1 to 7.8
E -- 4 to 16 in	sandy loam	moderate	1.22 to 2.69 in	5.1 to 7.8
Bt -- 16 to 36 in	sandy loam	moderate	1.97 to 3.74 in	5.1 to 7.8
2BC -- 36 to 40 in	gravelly coarse sand	rapid	0.26 to 0.43 in	6.6 to 8.4
2C -- 40 to 60 in	gravelly coarse sand	rapid	0.39 to 0.79 in	7.4 to 8.4

Rodman, moderately eroded

Extent: 40 percent of the unit

Landform(s): outwash plains, moraines

Slope gradient: 7 to 12 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	loamy sand	rapid	0.59 to 0.71 in	5.6 to 7.3
Bt -- 6 to 19 in	gravelly loamy sand	rapid	1.17 to 1.43 in	6.1 to 7.3
C -- 19 to 80 in	gravelly sand	very rapid	1.22 to 2.44 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Vx--Burnsville-Rodman complex, 12 to 18 percent slopes, moderately eroded

Burnsville, moderately eroded

Extent: 75 percent of the unit

Landform(s): outwash plains, moraines

Slope gradient: 12 to 18 percent

Parent material: loamy drift

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 4 in	sandy loam	moderate	0.39 to 0.87 in	5.1 to 7.8
E -- 4 to 16 in	sandy loam	moderate	1.22 to 2.69 in	5.1 to 7.8
Bt -- 16 to 36 in	sandy loam	moderate	1.97 to 3.74 in	5.1 to 7.8
2BC -- 36 to 40 in	gravelly coarse sand	rapid	0.26 to 0.43 in	6.6 to 8.4
2C -- 40 to 60 in	gravelly coarse sand	rapid	0.39 to 0.79 in	7.4 to 8.4

Rodman, moderately eroded

Extent: 20 percent of the unit

Landform(s): outwash plains, moraines

Slope gradient: 12 to 18 percent

Parent material: sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	loamy sand	rapid	0.59 to 0.71 in	5.6 to 7.3
Bt -- 6 to 19 in	gravelly loamy sand	rapid	1.17 to 1.43 in	6.1 to 7.3
C -- 19 to 80 in	gravelly sand	very rapid	1.22 to 2.44 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

W--Water

Water

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Wa--Warman sandy loam and loam

Warman

Extent: 95 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: loamy drift over 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) .20

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 9 in	mucky loam	moderately rapid	1.72 to 2.26 in	4.5 to 6.0
Bg -- 9 to 25 in	loam	moderate	2.42 to 3.23 in	5.1 to 7.3
2C -- 25 to 60 in	gravelly sand	rapid	0.35 to 2.77 in	6.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

X--Greenbush silt loam, 0 to 2 percent slopes

Greenbush

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: silty drift over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 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: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.94 in	4.5 to 7.3
E -- 4 to 14 in	silt loam	moderate	1.64 to 2.25 in	4.5 to 6.5
B/E,Bt -- 14 to 25 in	silt loam	moderate	1.76 to 2.43 in	4.5 to 6.5
2C -- 25 to 60 in	gravelly sand	rapid	0.35 to 2.43 in	4.5 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

Xu--Greenbush silt loam, 2 to 7 percent slopes

Greenbush

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 7 percent

Parent material: silty drift 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): 3

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.79 to 0.94 in	4.5 to 7.3
E -- 4 to 14 in	silt loam	moderate	1.64 to 2.25 in	4.5 to 6.5
B/E,Bt -- 14 to 25 in	silt loam	moderate	1.76 to 2.43 in	4.5 to 6.5
2C -- 25 to 60 in	gravelly sand	rapid	0.35 to 2.43 in	4.5 to 6.5

Map Unit Description (MN)

Isanti County, Minnesota

Y--Ames silt loam

Ames

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 0 to 2 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): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	silt loam	moderate	0.63 to 0.94 in	4.5 to 7.8
E,E/B -- 4 to 16 in	silt loam	moderate	1.10 to 2.69 in	4.5 to 7.8
B/E,Bt -- 16 to 36 in	loam	moderate	1.77 to 3.54 in	4.5 to 7.8
C -- 36 to 60 in	fine sandy loam	moderate	2.16 to 4.32 in	7.4 to 8.4

Map Unit Description (MN)

Isanti County, Minnesota

Ys--Ames fine sandy loam

Ames

Extent: 95 percent of the unit

Landform(s): ground moraines

Slope gradient: 0 to 2 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) .20

Land capability, nonirrigated 2w

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	fine sandy loam	moderate	0.47 to 0.71 in	4.5 to 7.8
E,E/B -- 4 to 16 in	fine sandy loam	moderate	1.10 to 2.69 in	4.5 to 7.8
B/E,Bt -- 16 to 36 in	loam	moderate	1.77 to 3.54 in	4.5 to 7.8
C -- 36 to 60 in	fine sandy loam	moderate	2.16 to 4.32 in	7.4 to 8.4

Z--Zimmerman loamy fine sand and fine sand, 0 to 2 percent slopes

Zimmerman

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .17

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy fine sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Zd--Zimmerman fine sand, 7 to 12 percent slopes, moderately eroded

Zimmerman, moderately eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 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 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sand	rapid	0.36 to 0.46 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Zf--Zimmerman fine sand, 0 to 2 percent slopes

Zimmerman

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 0 to 2 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sand	rapid	0.36 to 0.46 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Zg--Zimmerman fine sand, 2 to 7 percent slopes

Zimmerman

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 7 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sand	rapid	0.36 to 0.46 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Zh--Zimmerman fine sand, 12 to 18 percent slopes

Zimmerman

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 12 to 18 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 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sand	rapid	0.36 to 0.46 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

ZL--Rough broken land, zimmerman material

Rough broken land

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 25 to 60 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 7s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	fine sand	rapid	0.14 to 0.18 in	5.1 to 6.5
C -- 2 to 60 in	fine sand	rapid	3.47 to 5.79 in	5.1 to 7.3

Zn--Zimmerman fine sand, 7 to 12 percent slopes

Zimmerman

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 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 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sand	rapid	0.36 to 0.46 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Zp--Zimmerman loamy fine sand and fine sand, 7 to 12 percent slopes

Zimmerman

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 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) .17

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 5 in loamy fine sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E,Bw,E'&Bt --	5 to 60 in fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Zr--Zimmerman loamy fine sand and fine sand, 12 to 18 percent slopes

Zimmerman

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 12 to 18 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .17

Land capability, nonirrigated 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 5 in loamy fine sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E,Bw,E'&Bt --	5 to 60 in fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Zs--Zimmerman fine sand, 7 to 12 percent slopes, severely eroded

Zimmerman, severely eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 7 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 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sand	rapid	0.36 to 0.46 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Zu--Zimmerman loamy fine sand and fine sand, 2 to 7 percent slopes

Zimmerman

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 7 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .17

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	loamy fine sand	rapid	0.51 to 0.61 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Map Unit Description (MN)

Isanti County, Minnesota

Zv--Zimmerman fine sand, 2 to 7 percent slopes, moderately eroded

Zimmerman, moderately eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 2 to 7 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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sand	rapid	0.36 to 0.46 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

Zx--Zimmerman fine sand, 12 to 18 percent slopes, moderately eroded

Zimmerman, moderately eroded

Extent: 95 percent of the unit

Landform(s): outwash plains

Slope gradient: 12 to 18 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 6s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 5 in	fine sand	rapid	0.36 to 0.46 in	5.1 to 6.5
E,Bw,E'&Bt -- 5 to 60 in	fine sand	rapid	3.28 to 5.47 in	5.1 to 7.3

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.