

Map Unit Description (MN)

Douglas 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]

AaA--Aastad clay loam, 1 to 3 percent slopes

Aastad

<i>Extent:</i> 90 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on moraines, rises on moraines	<i>Wind erodibility group (WEG):</i> 6
<i>Slope gradient:</i> 1 to 3 percent	<i>Wind erodibility index (WEI):</i> 48
<i>Parent material:</i> loamy glacial till	<i>Kw factor (surface layer)</i> .17
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 1
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> C
<i>Drainage class:</i> moderately well drained	<i>Potential for frost action:</i> high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 -- 0 to 16 in	clay loam	moderately slow	2.74 to 3.07 in	6.1 to 7.8
Bw -- 16 to 24 in	clay loam	moderately slow	1.18 to 1.50 in	6.6 to 7.8
Bk,C -- 24 to 60 in	loam	moderately slow	5.02 to 5.73 in	7.4 to 8.4

Ad--Alluvial land

Alluvial land, frequently flooded

<i>Extent:</i> 90 percent of the unit	<i>Soil loss tolerance (T factor):</i>
<i>Landform(s):</i> flats on flood plains on outwash plains	<i>Wind erodibility group (WEG):</i>
<i>Slope gradient:</i> 0 to 2 percent	<i>Wind erodibility index (WEI):</i>
<i>Parent material:</i> alluvial flood plain sediments	<i>Kw factor (surface layer)</i>
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 5w
<i>Flooding:</i> frequent	<i>Hydric soil:</i> yes
<i>Ponding:</i> none	<i>Hydrologic group:</i>
<i>Drainage class:</i> very poorly drained	<i>Potential for frost action:</i>

<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)

Douglas County, Minnesota

Ao--Arveson sandy clay loam

Arveson

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 3w

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>
Ap -- 0 to 9 in	fine sandy loam	moderately rapid	1.18 to 1.36 in	7.4 to 8.4
Ak -- 9 to 23 in	fine sandy loam	moderately rapid	2.07 to 2.34 in	7.4 to 8.4
2Cg1,2Cg2 -- 23 to 60 in	fine sand	rapid	1.85 to 5.55 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

AsA--Arvilla sandy loam, 0 to 2 percent slopes

Arvilla

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 7 in	sandy loam	moderately rapid	0.92 to 1.06 in	6.1 to 8.4
Bw --	7 to 14 in	loam	moderately rapid	0.78 to 0.99 in	6.6 to 8.4
2C --	14 to 60 in	gravelly coarse sand	very rapid	0.91 to 2.28 in	7.4 to 8.4

AsB--Arvilla sandy loam, 2 to 6 percent slopes

Arvilla

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 2 to 6 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 7 in	sandy loam	moderately rapid	0.92 to 1.06 in	6.1 to 8.4
Bw --	7 to 14 in	loam	moderately rapid	0.78 to 0.99 in	6.6 to 8.4
2C --	14 to 60 in	gravelly coarse sand	very rapid	0.91 to 2.28 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

AsC--Arvilla sandy loam, 6 to 12 percent slopes

Arvilla

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 6 to 12 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 7 in	sandy loam	moderately rapid	0.92 to 1.06 in	6.1 to 8.4
Bw --	7 to 14 in	loam	moderately rapid	0.78 to 0.99 in	6.6 to 8.4
2C --	14 to 60 in	gravelly coarse sand	very rapid	0.91 to 2.28 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

AtA--Arvilla sandy loam, thick solum, 0 to 3 percent slopes

Arvilla, thick solum

<p><i>Extent:</i> 90 percent of the unit</p> <p><i>Landform(s):</i> flats on outwash plains, swales on outwash plains</p> <p><i>Slope gradient:</i> 0 to 3 percent</p> <p><i>Parent material:</i> loamy mantle over sandy and gravelly outwash</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> somewhat excessively drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 3</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer)</i> .10</p> <p><i>Land capability, nonirrigated</i> 2e</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential for frost action:</i> low</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 12 in	sandy loam	moderately rapid	1.54 to 1.77 in	6.1 to 8.4
Bw -- 12 to 24 in	sandy loam	moderately rapid	1.34 to 1.71 in	6.6 to 8.4
2C -- 24 to 60 in	gravelly coarse sand	very rapid	0.72 to 1.79 in	7.4 to 8.4

BaB2--Barnes loam, 2 to 6 percent slopes, eroded

Barnes, eroded

<p><i>Extent:</i> 90 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on moraines</p> <p><i>Slope gradient:</i> 2 to 6 percent</p> <p><i>Parent material:</i> loamy glacial till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 6</p> <p><i>Wind erodibility index (WEI):</i> 48</p> <p><i>Kw factor (surface layer)</i> .28</p> <p><i>Land capability, nonirrigated</i> 2e</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> B</p> <p><i>Potential for frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.8
Bw -- 8 to 18 in	loam	moderate	1.54 to 1.94 in	6.1 to 7.8
Bk,C -- 18 to 60 in	loam	moderate	5.84 to 7.93 in	7.4 to 8.4

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BaC2--Barnes loam, 6 to 12 percent slopes, eroded

Barnes, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.8
Bw -- 8 to 14 in	loam	moderate	0.94 to 1.20 in	6.1 to 7.8
Bk,C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

Map Unit Description (MN)

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BIB2--Barnes-Langhei loams, 2 to 6 percent slopes, eroded

Barnes, eroded

Extent: 55 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.8
Bw -- 8 to 14 in	loam	moderate	0.94 to 1.20 in	6.1 to 7.8
Bk,C -- 14 to 60 in	loam	moderate	6.39 to 8.68 in	7.4 to 8.4

Langhei, eroded

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 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>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

BIC2--Barnes-Langhei loams, 6 to 12 percent slopes, eroded

Barnes, eroded

Extent: 50 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.42 to 1.89 in	6.1 to 7.8
Bw -- 8 to 16 in	loam	moderate	1.24 to 1.57 in	6.1 to 7.8
Bk,C -- 16 to 60 in	loam	moderate	6.12 to 8.30 in	7.4 to 8.4

Langhei, eroded

Extent: 35 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

BmA--Beltrami loam, 1 to 3 percent slopes

Beltrami

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material: loamy glacial 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 1

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 6 in	loam	moderate	1.18 to 1.30 in	6.1 to 7.3
E -- 6 to 11 in	fine sandy loam	moderately rapid	0.56 to 0.97 in	5.6 to 7.3
Bt -- 11 to 34 in	clay loam	moderate	3.43 to 4.34 in	5.6 to 7.8
Bk,C -- 34 to 60 in	loam	moderate	3.90 to 4.94 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Bp--Brophy peat

Brophy

Extent: 90 percent of the unit

Landform(s): depressions on moraines, glacial lakes on moraines

Slope gradient: 0 to 2 percent

Parent material: herbaceous organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

Representative soil profile:

<i>Representative soil profile:</i>			<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Oe1	--	0 to 6 in	mucky peat	moderately rapid	2.83 to 4.13 in	
Oi	--	6 to 38 in	peat	moderately rapid	15.31 to 22.32 in	
Oe2,Oe3	--	38 to 60 in	mucky peat	moderately rapid	10.58 to 12.79 in	

Map Unit Description (MN)

Douglas County, Minnesota

Ca--Carlos muck

Carlos

Extent: 90 percent of the unit

Landform(s): depressions on moraines, glacial lakes on moraines

Slope gradient: 0 to 2 percent

Parent material: herbaceous organic material and marl deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated 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>
Oa -- 0 to 6 in	muck	moderate	2.07 to 2.83 in	
Lca -- 6 to 12 in	marl	moderate	0.83 to 1.30 in	
Oe -- 12 to 60 in	mucky peat	moderately rapid	23.06 to 27.86 in	

Map Unit Description (MN)

Douglas County, Minnesota

Cc--Cathro muck

Cathro

Extent: 90 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 2 percent

Parent material: highly decomposed herbaceous organic material over loamy glacial deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

Land capability, nonirrigated 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 9 in	muck	moderately rapid	4.07 to 4.98 in	
Oa2,Oa3 -- 9 to 41 in	muck	moderately rapid	11.16 to 14.35 in	
2Ab,2Cg -- 41 to 60 in	loam	moderate	2.08 to 3.59 in	

Ch--Cathro muck, sandy subsoil variant

Cathro, sandy subsoil variant

Extent: 90 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 2 percent

Parent material: herbaceous organic material 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): 1

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

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>
Oa1,Oa2 -- 0 to 20 in	muck	moderately slow	7.03 to 11.04 in	
2Ab,2Cg1 -- 20 to 46 in	silty clay loam	moderately slow	4.68 to 5.72 in	
3Cg2 -- 46 to 60 in	gravelly coarse sand	rapid	0.28 to 0.83 in	

Map Unit Description (MN)

Douglas County, Minnesota

CIB2--Clarion loam, 2 to 6 percent slopes, eroded

Clarion, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .20

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.34 to 1.73 in	6.1 to 7.8
Bw1,Bw2 -- 8 to 22 in	loam	moderate	2.13 to 2.69 in	6.6 to 7.8
Bk,C -- 22 to 60 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

CIC2--Clarion loam, 6 to 12 percent slopes, eroded

Clarion, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .20

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.34 to 1.73 in	6.1 to 7.8
Bw1,Bw2 -- 8 to 20 in	loam	moderate	1.83 to 2.32 in	6.6 to 7.8
Bk,C -- 20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

CmA--Clontarf sandy loam, 0 to 2 percent slopes

Clontarf

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: loamy mantle over sandy outwash deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 11 in	sandy loam	moderately rapid	1.43 to 1.98 in	6.1 to 7.3
Bw1 -- 11 to 17 in	sandy loam	moderately rapid	0.71 to 1.12 in	6.1 to 7.8
Bw2,2C -- 17 to 60 in	sand	rapid	2.15 to 3.86 in	6.6 to 7.8

Co--Colvin silt loam

Colvin

Extent: 90 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material: silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 12 in	silt loam	moderate	2.36 to 2.60 in	6.6 to 8.4
Ak,Bkg,Cg1 -- 12 to 30 in	silt loam	moderately slow	2.90 to 3.62 in	7.4 to 9.0
Cg2,Cg3 -- 30 to 60 in	silt loam	moderate	4.49 to 5.98 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Cp--Colvin silt loam, depressional

Colvin, depressional

Extent: 90 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 12 in	silt loam	moderate	2.36 to 2.60 in	6.6 to 8.4
Ak,Bkg,C1g -- 12 to 30 in	silt loam	moderate	2.90 to 3.62 in	7.4 to 8.4
C2g,C3g -- 30 to 60 in	silt loam	moderate	4.49 to 5.98 in	7.4 to 8.4

DaA--Darnen loam, 1 to 4 percent slopes

Darnen

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 1 to 4 percent

Parent material: alluvial downslope sediments over loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .17

Land capability, nonirrigated 1

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,A2,A3 -- 0 to 30 in	loam	moderate	5.39 to 5.98 in	6.6 to 7.8
Bw -- 30 to 42 in	loam	moderate	1.83 to 2.32 in	6.1 to 7.8
Bk,C -- 42 to 60 in	loam	moderate	2.48 to 3.37 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Dd--Dassel sandy loam

Dassel

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: stratified loamy and sandy outwash deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .05

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 8 in	sandy loam	moderately rapid	1.18 to 1.34 in	6.1 to 7.3
Bg1,2Bg2 --	8 to 25 in	fine sandy loam	moderately rapid	2.60 to 2.94 in	6.6 to 7.8
3Cg --	25 to 60 in	stratified fine sand to fine sandy loam	moderately rapid	2.77 to 3.46 in	6.6 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

De--Dassel sandy loam, depressional

Dassel, depressional

Extent: 90 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: stratified loamy and sandy outwash deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 3w

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>
A -- 0 to 8 in	sandy loam	moderately rapid	1.26 to 1.57 in	5.6 to 7.3
Bg1,2Bg2 -- 8 to 25 in	stratified loamy fine sand to fine sandy loam	moderately rapid	2.08 to 2.94 in	5.6 to 7.3
3Cg -- 25 to 60 in	stratified coarse sand to loamy sand	rapid	2.77 to 3.46 in	6.1 to 7.8

Map Unit Description (MN)

Douglas County, Minnesota

DoA--Dorset sandy loam, 0 to 2 percent slopes

Dorset

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	5.6 to 7.3
Bt --	8 to 16 in	sandy loam	moderately rapid	0.99 to 1.57 in	5.6 to 7.3
2BtC --	16 to 19 in	gravelly loamy coarse sand	rapid	0.17 to 0.28 in	7.4 to 8.4
2BC,2C --	19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

DoB--Dorset sandy loam, 2 to 6 percent slopes

Dorset

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 2 to 6 percent

Parent material: loamy mantle over sandy and gravelly outwash deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	5.6 to 7.3
Bt --	8 to 16 in	sandy loam	moderately rapid	0.99 to 1.57 in	5.6 to 7.3
2BtC --	16 to 19 in	gravelly loamy coarse sand	rapid	0.17 to 0.28 in	7.4 to 8.4
2BC,2C --	19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

DoC--Dorset sandy loam, 6 to 12 percent slopes

Dorset

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 6 to 12 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	5.6 to 7.3
Bt --	8 to 14 in	sandy loam	moderately rapid	0.76 to 1.20 in	5.6 to 7.3
2BtC --	14 to 17 in	gravelly loamy coarse sand	rapid	0.17 to 0.28 in	7.4 to 8.4
2BC,2C --	17 to 60 in	gravelly coarse sand	rapid	0.86 to 1.72 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

DpA--Dorset sandy loam, thick solum, 0 to 2 percent slopes

Dorset, thick solum

<p><i>Extent:</i> 90 percent of the unit</p> <p><i>Landform(s):</i> flats on outwash plains</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i> loamy mantle over sandy and gravelly outwash</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> somewhat excessively drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 3</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer)</i> .15</p> <p><i>Land capability, nonirrigated</i> 3s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential for frost action:</i> low</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	5.6 to 7.3
Bt -- 8 to 24 in	sandy loam	moderately rapid	1.94 to 3.07 in	5.6 to 7.3
2BtC -- 24 to 28 in	gravelly loamy coarse sand	rapid	0.24 to 0.39 in	7.4 to 8.4
2BC,2C -- 28 to 60 in	gravelly coarse sand	rapid	0.64 to 1.28 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

DpB--Dorset sandy loam, thick solum, 2 to 6 percent slopes

Dorset, thick solum

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 2 to 6 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	5.6 to 7.3
Bt --	8 to 24 in	sandy loam	moderately rapid	1.94 to 3.07 in	5.6 to 7.3
2BtC --	24 to 28 in	gravelly loamy sand	rapid	0.24 to 0.39 in	7.4 to 8.4
2BC,2C --	28 to 60 in	gravelly coarse sand	rapid	0.64 to 1.28 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

DpC--Dorset sandy loam, thick solum, 6 to 12 percent slopes

Dorset, thick solum

<p><i>Extent:</i> 90 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on outwash plains</p> <p><i>Slope gradient:</i> 6 to 12 percent</p> <p><i>Parent material:</i> loamy mantle over sandy and gravelly outwash</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> somewhat excessively drained</p>	<p><i>Soil loss tolerance (T factor):</i> 3</p> <p><i>Wind erodibility group (WEG):</i> 3</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer)</i> .15</p> <p><i>Land capability, nonirrigated</i> 4e</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential for frost action:</i> low</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	5.6 to 7.3
Bt -- 8 to 24 in	sandy loam	moderately rapid	1.94 to 3.07 in	5.6 to 7.3
2BtC -- 24 to 28 in	gravelly loamy coarse sand	rapid	0.24 to 0.39 in	7.4 to 8.4
2BC,2C -- 28 to 60 in	gravelly coarse sand	rapid	0.64 to 1.28 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Dv--Dovray mucky silty clay

Dovray

Extent: 90 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 2 percent

Parent material: clayey lacustrine deposits over clayey glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: moderate

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 7 in	mucky silty clay	moderately slow	1.13 to 1.77 in	6.1 to 7.8
A1,A2 --	7 to 23 in	silty clay	moderately slow	2.05 to 2.52 in	6.1 to 7.8
Bg --	23 to 44 in	silty clay	moderately slow	2.76 to 3.40 in	6.6 to 7.8
Cg1,Cg2 --	44 to 60 in	silty clay	slow	2.05 to 2.99 in	6.6 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Fa--Flom silty clay loam

Flom

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

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 13 in	silty clay loam	moderately slow	2.34 to 2.86 in	6.1 to 7.8
A3,Bg -- 13 to 24 in	clay loam	moderately slow	1.65 to 2.09 in	6.6 to 8.4
Bkg,Cg -- 24 to 60 in	loam	moderately slow	5.02 to 6.81 in	7.4 to 8.4

Fd--Forada sandy loam

Forada

Extent: 90 percent of the unit
Landform(s): drainageways on outwash plains, flats on outwash plains
Slope gradient: 0 to 2 percent
Parent material: loamy mantle over sandy and gravelly outwash
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: poorly drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 16 in	sandy loam	moderately rapid	2.10 to 2.42 in	6.1 to 7.8
Bg -- 16 to 28 in	sandy loam	moderately rapid	1.42 to 2.24 in	6.1 to 7.8
2Bkg,2Cg -- 28 to 60 in	gravelly coarse sand	rapid	0.64 to 3.19 in	6.6 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Fe--Forada loam, depressional

Forada, depressional

Extent: 90 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: loamy mantle 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): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>			<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A --	0 to 16 in	loam		moderate	3.23 to 3.55 in	6.6 to 7.8
Bg --	16 to 28 in	sandy loam		moderately rapid	1.42 to 2.24 in	6.6 to 7.8
2Bkg,2Cg --	28 to 60 in	gravelly coarse sand		rapid	0.64 to 1.28 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Ff--Forada sandy loam, sandy subsoil

Forada, sandy subsoil

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 16 in	sandy loam	moderately rapid	2.10 to 2.42 in	6.1 to 7.8
Bg -- 16 to 22 in	sandy loam	moderately rapid	0.71 to 1.12 in	6.1 to 7.8
2Bkg,2Cg -- 22 to 60 in	sand	rapid	0.76 to 3.78 in	6.6 to 8.4

FmC2--Forman clay loam, 6 to 12 percent slopes, eroded

Forman, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 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>
Ap -- 0 to 11 in	clay loam	moderate	1.87 to 2.09 in	6.6 to 7.8
Bt -- 11 to 19 in	clay loam	moderate	1.18 to 1.50 in	6.6 to 7.8
Bk,C -- 19 to 60 in	clay loam	moderately slow	5.73 to 7.78 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

FoB--Forman-Aastad clay loams, 1 to 5 percent slopes

Forman

Extent: 55 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 1 to 5 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .20

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 12 in	clay loam	moderate	2.01 to 2.24 in	6.6 to 7.8
Bt -- 12 to 20 in	clay loam	moderate	1.24 to 1.57 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 7.56 in	7.4 to 8.4

Aastad

Extent: 35 percent of the unit

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

Slope gradient: 1 to 5 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .17

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 18 in	clay loam	moderately slow	3.08 to 3.44 in	6.1 to 7.8
Bw -- 18 to 24 in	clay loam	moderately slow	0.89 to 1.12 in	6.6 to 7.8
Bk,C -- 24 to 60 in	clay loam	moderately slow	5.02 to 5.73 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Fu--Fulda silty clay

Fulda

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: clayey lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1,A2 -- 0 to 22 in	silty clay	slow	3.09 to 4.41 in	6.6 to 7.3
Bg -- 22 to 36 in	silty clay	slow	1.79 to 2.20 in	7.4 to 8.4
Bkg,Cg -- 36 to 60 in	silty clay loam	slow	3.84 to 4.56 in	7.4 to 8.4

GoA--Gonvick loam, 1 to 3 percent slopes

Gonvick

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material: loamy glacial 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) .20

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	loam	moderate	1.97 to 2.17 in	6.1 to 7.3
Bt1,Bt2,Bt3 -- 10 to 29 in	clay loam	moderate	2.89 to 3.67 in	6.6 to 7.3
Bk,C -- 29 to 60 in	loam	moderate	4.61 to 5.83 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

GP--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 deposits

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 45 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class: excessively drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

<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)

Douglas County, Minnesota

Ha--Hangaard sandy loam

Hangaard

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 4w

Hydric soil: yes

Hydrologic group: A/D

Potential for frost action: moderate

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 11 in	sandy loam	moderately rapid	1.10 to 1.54 in	6.6 to 7.8
Bg1,2Bg2 --	11 to 17 in	loamy coarse sand	rapid	0.41 to 0.65 in	6.6 to 7.8
2Bkg,2Cg --	17 to 60 in	gravelly coarse sand	very rapid	0.86 to 1.72 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

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

Hantho

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines, hillslopes on outwash plains

Slope gradient: 1 to 3 percent

Parent material: silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silt loam	moderate	1.73 to 1.89 in	6.6 to 7.8
A1,A2 -- 8 to 16 in	silt loam	moderate	1.41 to 1.82 in	6.6 to 7.8
Bw -- 16 to 37 in	silt loam	moderate	3.55 to 4.59 in	7.4 to 8.4
C -- 37 to 60 in	silt loam	moderate	3.88 to 5.02 in	7.4 to 8.4

La--Lake beaches, sandy

Beaches, lake, sandy

Extent: 90 percent of the unit

Landform(s): hillslopes on beaches

Slope gradient: 0 to 6 percent

Parent material: sandy lake beach sediments

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

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)

Douglas County, Minnesota

Lb--Lake beaches, loamy

Beaches, lake, loamy

Extent: 90 percent of the unit

Landform(s): hillslopes on beaches

Slope gradient: 0 to 5 percent

Parent material: loamy lake beach sediments

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: no

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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LeF--Langhei loam, 18 to 40 percent slopes

Langhei

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 18 to 40 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 7e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

LgD2--Langhei-Barnes loams, 12 to 18 percent slopes, eroded

Langhei, eroded

Extent: 55 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 18 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Barnes, eroded

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 18 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.28 to 1.70 in	6.1 to 7.8
Bw -- 7 to 12 in	loam	moderate	0.71 to 0.90 in	6.1 to 7.8
Bk,C -- 12 to 60 in	loam	moderate	6.72 to 9.13 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

LkD2--Langhei-Waukon loams, 12 to 18 percent slopes, eroded

Langhei, eroded

Extent: 55 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 18 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Waukon, eroded

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 18 percent

Parent material: loamy glacial 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) .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,E -- 0 to 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 22 in	loam	moderate	1.95 to 2.47 in	6.1 to 8.4
Bk,C -- 22 to 60 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

LkE--Langhei-Waukon loams, 18 to 24 percent slopes

Langhei

Extent: 60 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 18 to 24 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 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>
Ak -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Waukon

Extent: 25 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 18 to 24 percent

Parent material: loamy glacial 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) .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,E -- 0 to 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 22 in	loam	moderate	1.95 to 2.47 in	6.1 to 8.4
Bk,C -- 22 to 60 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

LwD--Langhei-Waukon-Sioux complex, 12 to 25 percent slopes

Langhei

<i>Extent:</i> 40 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> hillslopes on moraines	<i>Wind erodibility group (WEG):</i> 4L
<i>Slope gradient:</i> 12 to 25 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> loamy glacial till	<i>Kw factor (surface layer)</i> .28
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 6e
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> B
<i>Drainage class:</i> well drained	<i>Potential for frost action:</i> moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Waukon

<i>Extent:</i> 25 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> hillslopes on moraines	<i>Wind erodibility group (WEG):</i> 5
<i>Slope gradient:</i> 12 to 25 percent	<i>Wind erodibility index (WEI):</i> 56
<i>Parent material:</i> loamy glacial till	<i>Kw factor (surface layer)</i> .20
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 6e
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> B
<i>Drainage class:</i> well drained	<i>Potential for frost action:</i> moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,E -- 0 to 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 22 in	loam	moderate	1.95 to 2.47 in	6.1 to 8.4
Bk,C -- 22 to 60 in	loam	moderate	5.67 to 7.18 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

LwD--Langhei-Waukon-Sioux complex, 12 to 25 percent slopes

Sioux

Extent: 20 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 25 percent

Parent material: sandy and gravelly outwash deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

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>
Ap -- 0 to 7 in	gravelly loamy coarse sand	rapid	0.50 to 0.71 in	6.6 to 8.4
C -- 7 to 60 in	gravelly coarse sand	rapid	1.06 to 3.17 in	6.6 to 8.4

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: none

Ponding: none

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

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)

Douglas County, Minnesota

MaA--Maddock fine sand, 0 to 2 percent slopes

Maddock

Extent: 90 percent of the unit

Landform(s): flats on outwash plains

Slope gradient: 0 to 2 percent

Parent material: sandy outwash 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): 1

Wind erodibility index (WEI): 250

Kw factor (surface layer) .02

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,AB -- 0 to 14 in	fine sand	rapid	0.85 to 1.70 in	6.6 to 7.8
Bw,C -- 14 to 60 in	fine sand	rapid	2.28 to 5.48 in	6.6 to 8.4

MaB--Maddock fine sand, 2 to 6 percent slopes

Maddock

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: sandy outwash 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): 1

Wind erodibility index (WEI): 250

Kw factor (surface layer) .02

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,AB -- 0 to 14 in	fine sand	rapid	0.85 to 1.70 in	6.6 to 7.8
Bw,C -- 14 to 60 in	fine sand	rapid	2.28 to 5.48 in	6.6 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

MaC--Maddock fine sand, 6 to 12 percent slopes

Maddock

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: sandy outwash 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): 1

Wind erodibility index (WEI): 250

Kw factor (surface layer) .02

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,AB -- 0 to 14 in	fine sand	rapid	0.85 to 1.70 in	6.6 to 7.8
Bw,C -- 14 to 60 in	fine sand	rapid	2.28 to 5.48 in	6.6 to 8.4

Mh--Marsh

Marsh

Extent: 90 percent of the unit

Landform(s): depressions on moraines, depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: loamy till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil: yes

Hydrologic group:

Potential for frost action:

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

Douglas County, Minnesota

Mm--Marysland loam

Marysland

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,Ak -- 0 to 15 in	loam	moderate	2.54 to 3.29 in	7.4 to 8.4
Bkg -- 15 to 32 in	loam	moderate	2.54 to 3.22 in	7.4 to 8.4
2Cg -- 32 to 60 in	stratified gravelly coarse sand to fine sand	rapid	0.56 to 1.96 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Mo--Marysland loam, depressional

Marysland, depressional

Extent: 90 percent of the unit

Landform(s): depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: loamy mantle 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): 3

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,Ak	-- 0 to 15 in	loam	moderate	2.54 to 3.29 in	7.9 to 8.4
Bkg	-- 15 to 32 in	loam	moderate	2.54 to 3.22 in	7.9 to 8.4
2Cg	-- 32 to 60 in	stratified gravelly coarse sand to fine sand	rapid	0.56 to 1.96 in	7.9 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Mp--Millerville mucky peat

Millerville

Extent: 90 percent of the unit

Landform(s): depressions on moraines, depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: herbaceous organic material over coprogenous earth

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 1

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .02

Land capability, nonirrigated 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>
Oe -- 0 to 24 in	mucky peat	moderately rapid	10.81 to 13.21 in	
Lco1,Lco2 -- 24 to 60 in	coprogenous earth	slow	7.17 to 12.54 in	

NbB--Nebish sandy loam, 2 to 6 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial 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) .17

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,E -- 0 to 9 in	sandy loam	moderately rapid	1.18 to 1.63 in	5.6 to 7.3
Bt -- 9 to 33 in	sandy clay loam	moderate	3.60 to 4.56 in	5.6 to 7.8
Bk,C -- 33 to 60 in	loam	moderate	2.94 to 5.09 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

NbC--Nebish sandy loam, 6 to 12 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial 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) .17

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,E -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.42 in	5.6 to 7.3
Bt -- 8 to 32 in	sandy clay loam	moderate	3.60 to 4.56 in	5.6 to 7.8
Bk,C -- 32 to 60 in	loam	moderate	3.07 to 5.31 in	7.4 to 8.4

NbD--Nebish sandy loam, 12 to 18 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 18 percent

Parent material: loamy glacial 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) .17

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,E -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.42 in	5.6 to 7.3
Bt -- 8 to 30 in	sandy clay loam	moderate	3.31 to 4.19 in	5.6 to 7.8
Bk,C -- 30 to 60 in	loam	moderate	3.29 to 5.69 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

NeB--Nebish loam, 2 to 6 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial 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) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,E -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	5.6 to 7.3
Bt -- 9 to 33 in	clay loam	moderate	3.60 to 4.56 in	5.6 to 7.8
Bk,C -- 33 to 60 in	loam	moderate	2.94 to 5.09 in	7.4 to 8.4

NeB2--Nebish loam, 2 to 6 percent slopes, eroded

Nebish, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial 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) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,E -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	5.6 to 7.3
Bt -- 8 to 33 in	clay loam	moderate	3.78 to 4.79 in	5.6 to 7.8
Bk,C -- 33 to 60 in	loam	moderate	2.94 to 5.09 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

NeC--Nebish loam, 6 to 12 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial 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) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,E -- 0 to 8 in	loam	moderate	1.57 to 1.73 in	5.6 to 7.3
Bt -- 8 to 30 in	clay loam	moderate	3.31 to 4.19 in	5.6 to 7.8
Bk,C -- 30 to 60 in	loam	moderate	3.29 to 5.69 in	7.4 to 8.4

NeC2--Nebish loam, 6 to 12 percent slopes, eroded

Nebish, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial 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) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.6 to 7.3
Bt -- 7 to 30 in	clay loam	moderate	3.43 to 4.34 in	5.6 to 7.8
Bk,C -- 30 to 60 in	loam	moderate	3.29 to 5.69 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

NeD--Nebish loam, 12 to 18 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 18 percent

Parent material: loamy glacial 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) .32

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,E -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.6 to 7.3
Bt -- 7 to 28 in	clay loam	moderate	3.13 to 3.96 in	5.6 to 7.8
Bk,C -- 28 to 60 in	loam	moderate	3.51 to 6.06 in	7.4 to 8.4

NeE--Nebish loam, 18 to 24 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 18 to 24 percent

Parent material: loamy glacial 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) .32

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,E -- 0 to 7 in	loam	moderate	1.42 to 1.56 in	5.6 to 7.3
Bt -- 7 to 26 in	clay loam	moderate	2.83 to 3.59 in	5.6 to 7.8
Bk,C -- 26 to 60 in	loam	moderate	3.72 to 6.43 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

NhB--Nebish-Dorset complex, 2 to 6 percent slopes

Nebish

Extent: 60 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial 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) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,E -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	5.6 to 7.3
Bt -- 9 to 33 in	clay loam	moderate	3.60 to 4.56 in	5.6 to 7.8
Bk,C -- 33 to 60 in	loam	moderate	2.94 to 5.09 in	7.4 to 8.4

Dorset

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	5.6 to 7.3
Bt -- 8 to 16 in	sandy loam	moderately rapid	0.99 to 1.57 in	5.6 to 7.3
2BtC -- 16 to 19 in	gravelly loamy sand	rapid	0.17 to 0.28 in	7.4 to 8.4
2BC,2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

NhC--Nebish-Dorset complex, 6 to 12 percent slopes

Nebish

Extent: 60 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial 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) .32

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,E -- 0 to 9 in	loam	moderate	1.81 to 1.99 in	5.6 to 7.3
Bt -- 9 to 33 in	clay loam	moderate	3.60 to 4.56 in	5.6 to 7.8
Bk,C -- 33 to 60 in	loam	moderate	2.94 to 5.09 in	7.4 to 8.4

Dorset

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy mantle over sandy and gravelly outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .15

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	5.6 to 7.3
Bt -- 8 to 16 in	sandy loam	moderately rapid	0.99 to 1.57 in	5.6 to 7.3
2BtC -- 16 to 19 in	gravelly loamy sand	rapid	0.17 to 0.28 in	7.4 to 8.4
2BC,2C -- 19 to 60 in	gravelly coarse sand	rapid	0.82 to 1.64 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

NIA--Nicollet clay loam, 1 to 4 percent slopes

Nicollet

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 1 to 4 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .20

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	clay loam	moderate	2.41 to 2.69 in	6.1 to 7.3
Bw -- 14 to 28 in	clay loam	moderate	2.07 to 2.62 in	6.6 to 7.8
Bk,C -- 28 to 60 in	loam	moderate	4.78 to 6.06 in	7.4 to 8.4

NyB--Nymore loamy sand, 2 to 6 percent slopes

Nymore

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 2 to 6 percent

Parent material: sandy outwash deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .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	5.1 to 6.5
Bw,BC -- 6 to 26 in	sand	rapid	0.40 to 1.61 in	5.1 to 7.3
C -- 26 to 60 in	sand	rapid	0.68 to 2.71 in	5.1 to 7.8

Map Unit Description (MN)

Douglas County, Minnesota

NyC--Nymore loamy sand, 6 to 18 percent slopes

Nymore

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 6 to 18 percent

Parent material: sandy outwash deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .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	5.1 to 6.5
Bw,BC -- 6 to 23 in	sand	rapid	0.34 to 1.35 in	5.1 to 7.3
C -- 23 to 60 in	sand	rapid	0.74 to 2.96 in	5.1 to 7.8

Map Unit Description (MN)

Douglas County, Minnesota

OsA--Osakis loam, 0 to 3 percent slopes

Osakis

Extent: 90 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material: loamy mantle 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): 2

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 7 in	loam	moderate	1.28 to 1.56 in	6.1 to 7.3
Bw --	7 to 14 in	loam	moderately rapid	0.99 to 1.35 in	6.1 to 7.3
2Bw --	14 to 18 in	gravelly loamy sand	rapid	0.16 to 0.24 in	6.1 to 7.3
2C --	18 to 60 in	gravelly coarse sand	rapid	0.83 to 1.67 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Qu--Quam mucky silty clay loam

Quam

Extent: 90 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: silty slope alluvium over loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 8 in	mucky silty clay loam	moderately slow	1.73 to 2.52 in	6.6 to 7.8
A2,A3,A4,Cg1 -- 8 to 38 in	silty clay loam	moderately slow	4.79 to 6.58 in	6.6 to 7.8
2Cg2 -- 38 to 60 in	clay loam	moderately slow	3.09 to 4.19 in	7.4 to 8.4

Rm--Rifle mucky peat

Rifle

Extent: 90 percent of the unit

Landform(s): depressions on moraines, depressions on outwash plains

Slope gradient: 0 to 2 percent

Parent material: moderately decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .02

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: 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>
Oe1 -- 0 to 3 in	mucky peat	moderately rapid	1.51 to 1.83 in	
Oe2 -- 3 to 60 in	mucky peat	moderately rapid	27.21 to 32.88 in	

Map Unit Description (MN)

Douglas County, Minnesota

RoB--Rothsay silt loam, 2 to 6 percent slopes

Rothsay

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: silty lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .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>
Ap -- 0 to 7 in	silt loam	moderate	1.56 to 1.70 in	6.6 to 7.3
Bw -- 7 to 22 in	silt loam	moderate	2.54 to 3.29 in	6.6 to 7.8
Bk,C -- 22 to 60 in	silt loam	moderately rapid	7.56 to 8.31 in	7.4 to 8.4

Se--Seelyeville muck

Seelyeville

Extent: 90 percent of the unit

Landform(s): depressions on moraines, depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material: highly decomposed organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 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 7 in	muck	moderately rapid	2.48 to 3.19 in	
Oa2 -- 7 to 60 in	muck	moderately rapid	18.46 to 23.74 in	

Map Unit Description (MN)

Douglas County, Minnesota

Sh--Shooker loam

Shooker

Extent: 90 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .28

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,E1,E2 -- 0 to 12 in	loam	moderate	2.36 to 2.83 in	5.6 to 7.3
Btg -- 12 to 36 in	loam	moderate	3.60 to 4.56 in	5.6 to 7.8
Bkg,Cg -- 36 to 60 in	fine sandy loam	moderate	2.64 to 4.56 in	7.4 to 8.4

SIA--Sinai clay, 0 to 2 percent slopes

Sinai

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: clayey lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: D

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 14 in	clay	slow	1.84 to 2.27 in	6.1 to 7.3
A2 -- 14 to 22 in	clay	slow	1.34 to 1.50 in	6.6 to 7.8
Bg -- 22 to 26 in	clay	slow	0.43 to 0.67 in	7.4 to 8.4
Bkg,Cg -- 26 to 60 in	clay	slow	3.72 to 5.76 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

SIB--Sinai clay, 2 to 6 percent slopes

Sinai

<i>Extent:</i> 90 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> hillslopes on moraines	<i>Wind erodibility group (WEG):</i> 4
<i>Slope gradient:</i> 2 to 6 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> clayey lacustrine deposits	<i>Kw factor (surface layer)</i> .10
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 3e
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> D
<i>Drainage class:</i> well drained	<i>Potential for frost action:</i> low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 14 in	clay	slow	1.84 to 2.27 in	6.1 to 7.3
A2 -- 14 to 22 in	clay	slow	1.34 to 1.50 in	6.6 to 7.8
Bg -- 22 to 26 in	clay	slow	0.43 to 0.67 in	7.4 to 8.4
Bkg,Cg -- 26 to 60 in	clay	slow	3.72 to 5.76 in	7.4 to 8.4

SmB--Sioux loamy coarse sand, 0 to 6 percent slopes

Sioux

<i>Extent:</i> 90 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> hillslopes on outwash plains	<i>Wind erodibility group (WEG):</i> 2
<i>Slope gradient:</i> 0 to 6 percent	<i>Wind erodibility index (WEI):</i> 134
<i>Parent material:</i> sandy and gravelly outwash deposits	<i>Kw factor (surface layer)</i> .05
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 4s
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> A
<i>Drainage class:</i> excessively drained	<i>Potential for frost action:</i> low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AC -- 0 to 11 in	loamy coarse sand	rapid	1.10 to 1.32 in	5.6 to 7.8
C -- 11 to 60 in	gravelly coarse sand	very rapid	0.98 to 2.93 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

SmC--Sioux loamy coarse sand, 6 to 12 percent slopes

Sioux

<p><i>Extent:</i> 90 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on outwash plains</p> <p><i>Slope gradient:</i> 6 to 12 percent</p> <p><i>Parent material:</i> sandy and gravelly outwash deposits</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> excessively drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .05</p> <p><i>Land capability, nonirrigated</i> 6s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential for frost action:</i> low</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,AC -- 0 to 11 in	loamy coarse sand	rapid	1.10 to 1.32 in	5.6 to 7.8
C -- 11 to 60 in	gravelly coarse sand	very rapid	0.98 to 2.93 in	7.4 to 8.4

SoC--Sioux gravelly loamy coarse sand, 2 to 12 percent slopes

Sioux

<p><i>Extent:</i> 90 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on outwash plains</p> <p><i>Slope gradient:</i> 2 to 12 percent</p> <p><i>Parent material:</i> sandy and gravelly outwash deposits</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> excessively drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 2</p> <p><i>Wind erodibility index (WEI):</i> 134</p> <p><i>Kw factor (surface layer)</i> .02</p> <p><i>Land capability, nonirrigated</i> 6s</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> A</p> <p><i>Potential for frost action:</i> low</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A,AC -- 0 to 7 in	gravelly loamy coarse sand	rapid	0.50 to 0.71 in	6.6 to 8.4
C -- 7 to 60 in	gravelly coarse sand	rapid	1.06 to 3.17 in	6.6 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

SoE--Sioux gravelly loamy coarse sand, 12 to 35 percent slopes

Sioux

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 12 to 35 percent

Parent material: sandy and gravelly outwash deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .02

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,AC -- 0 to 7 in	gravelly loamy coarse sand	rapid	0.50 to 0.71 in	6.6 to 8.4
C -- 7 to 60 in	gravelly coarse sand	rapid	1.06 to 3.17 in	6.6 to 8.4

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

Sverdrup

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: loamy mantle over sandy outwash deposits

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) .10

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 7.3
Bw1 -- 8 to 20 in	sandy loam	moderately rapid	0.98 to 1.71 in	6.1 to 7.8
2Bw2,2C -- 20 to 60 in	sand	rapid	0.80 to 2.39 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

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

Sverdrup

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 2 to 6 percent

Parent material: loamy mantle over sandy outwash deposits

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) .10

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 7.3
Bw1 -- 8 to 20 in	sandy loam	moderately rapid	0.98 to 1.71 in	6.1 to 7.8
2Bw2,2C -- 20 to 60 in	sand	rapid	0.80 to 2.39 in	7.4 to 8.4

SpC--Sverdrup sandy loam, 6 to 12 percent slopes

Sverdrup

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 6 to 12 percent

Parent material: loamy mantle over sandy outwash deposits

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) .10

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 7.3
Bw1 -- 8 to 20 in	sandy loam	moderately rapid	0.98 to 1.71 in	6.1 to 7.8
2Bw2,2C -- 20 to 60 in	sand	rapid	0.80 to 2.39 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

SvA--Sverdrup loam, thick solum, 0 to 3 percent slopes

Sverdrup, thick solum

Extent: 90 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material: loamy mantle over sandy outwash deposits

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 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>
Ap -- 0 to 8 in	loam	moderate	1.26 to 1.42 in	6.1 to 7.3
Bw1 -- 8 to 30 in	sandy loam	moderately rapid	1.76 to 3.09 in	6.1 to 7.8
2Bw2,2C -- 30 to 60 in	sand	rapid	0.60 to 1.80 in	7.4 to 8.4

To--Tonka loam

Tonka

Extent: 90 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: silty and clayey slope alluvium over loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .24

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A,E -- 0 to 16 in	loam	moderate	3.23 to 3.87 in	5.6 to 7.8
Btg -- 16 to 37 in	clay loam	slow	2.92 to 4.17 in	5.6 to 7.8
Bkg,Cg -- 37 to 60 in	loam	moderate	3.20 to 4.34 in	6.6 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Ud--Udipsamments (cut and fill land)

Udipsamments, (cut and fill land)

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: variable sandy material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated

Hydric soil:

Hydrologic group:

Potential for frost action:

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
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Up--Urness mucky silty clay loam

Urness

Extent: 90 percent of the unit

Landform(s): depressions on moraines, glacial lakes on moraines

Slope gradient: 0 to 1 percent

Parent material: post glacial lake coprogenous sediments

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .02

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	mucky silty clay loam	moderate	1.63 to 2.17 in	7.4 to 8.4
C1,C2,C3 -- 9 to 32 in	mucky silty clay loam	moderate	3.65 to 5.02 in	7.4 to 8.4
2C4 -- 32 to 60 in	silty clay loam	moderate	3.91 to 5.59 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

Us--Urness mucky silt loam, peaty subsoil variant

Urness, peaty subsoil variant

Extent: 90 percent of the unit

Landform(s): glacial lakes on moraines, glacial lakes on outwash plains

Slope gradient: 0 to 1 percent

Parent material: post glacial lake coprogenous sediments over herbaceous organic material

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

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,C -- 0 to 42 in	mucky silt loam	moderate	8.43 to 9.27 in	7.9 to 8.4
Oe1,Oe2 -- 42 to 60 in	mucky peat	moderately rapid	7.97 to 10.63 in	6.6 to 7.8

VaA--Vallers clay loam, 0 to 3 percent slopes

Vallers

Extent: 90 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,Ak -- 0 to 11 in	clay loam	moderately slow	1.98 to 2.43 in	7.4 to 8.4
Bkg -- 11 to 20 in	clay loam	moderately slow	1.36 to 1.72 in	7.4 to 8.4
Cg1,Cg2 -- 20 to 60 in	loam	moderately slow	6.76 to 7.56 in	7.4 to 8.4

Map Unit Description (MN)

Douglas 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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WaB--Waukon loam, 2 to 6 percent slopes

Waukon

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial 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) .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,E -- 0 to 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WaB2--Waukon loam, 2 to 6 percent slopes, eroded

Waukon, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial 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) .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 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

WaC--Waukon loam, 6 to 12 percent slopes

Waukon

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial 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) .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 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WaC2--Waukon loam, 6 to 12 percent slopes, eroded

Waukon, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial 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) .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 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

WaD--Waukon loam, 12 to 18 percent slopes

Waukon

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 18 percent

Parent material: loamy glacial 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) .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 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WaD2--Waukon loam, 12 to 18 percent slopes, eroded

Waukon, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 18 percent

Parent material: loamy glacial 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) .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 8 in	loam	moderate	1.57 to 1.89 in	6.1 to 7.3
Bt -- 8 to 24 in	loam	moderate	2.42 to 3.07 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

WaE--Waukon loam, 18 to 24 percent slopes

Waukon

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 18 to 24 percent

Parent material: loamy glacial 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) .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,E -- 0 to 8 in	loam	moderate	1.57 to 1.89 in	6.1 to 7.3
Bt -- 8 to 20 in	loam	moderate	1.83 to 2.32 in	6.1 to 8.4
Bk,C -- 20 to 60 in	loam	moderate	5.96 to 7.56 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WcB--Waukon clay loam, 2 to 6 percent slopes

Waukon

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .17

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	clay loam	moderately slow	1.54 to 1.90 in	6.1 to 7.3
Bt -- 9 to 24 in	clay loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

WcC2--Waukon clay loam, 6 to 12 percent slopes, eroded

Waukon, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .17

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>
Ap -- 0 to 9 in	clay loam	moderately slow	1.54 to 1.90 in	6.1 to 7.3
Bt -- 9 to 24 in	clay loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WIB2--Waukon-Langhei loams, 2 to 6 percent slopes, eroded

Waukon, eroded

Extent: 65 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial 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) .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 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Langhei, eroded

Extent: 25 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 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>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WIC2--Waukon-Langhei loams, 6 to 12 percent slopes, eroded

Waukon, eroded

Extent: 60 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial 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) .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 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Langhei, eroded

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WsB2--Waukon-Langhei-Sioux complex, 2 to 6 percent slopes, eroded

Waukon, eroded

<p><i>Extent:</i> 40 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on moraines</p> <p><i>Slope gradient:</i> 2 to 6 percent</p> <p><i>Parent material:</i> loamy glacial till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 5</p> <p><i>Wind erodibility index (WEI):</i> 56</p> <p><i>Kw factor (surface layer)</i> .20</p> <p><i>Land capability, nonirrigated</i> 2e</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> B</p> <p><i>Potential for frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Langhei, eroded

<p><i>Extent:</i> 25 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on moraines</p> <p><i>Slope gradient:</i> 2 to 6 percent</p> <p><i>Parent material:</i> loamy glacial till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 4L</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer)</i> .28</p> <p><i>Land capability, nonirrigated</i> 3e</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> B</p> <p><i>Potential for frost action:</i> moderate</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WsB2--Waukon-Langhei-Sioux complex, 2 to 6 percent slopes, eroded

Sioux

Extent: 20 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

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>
Ap -- 0 to 7 in	loamy coarse sand	rapid	0.71 to 0.85 in	6.6 to 7.8
AC,C -- 7 to 60 in	gravelly coarse sand	rapid	1.06 to 3.17 in	6.6 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WsC2--Waukon-Langhei-Sioux complex, 6 to 12 percent slopes, eroded

Waukon, eroded

Extent: 35 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial 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) .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 9 in	loam	moderate	1.81 to 2.17 in	6.1 to 7.3
Bt -- 9 to 24 in	loam	moderate	2.24 to 2.84 in	6.1 to 8.4
Bk,C -- 24 to 60 in	loam	moderate	5.37 to 6.81 in	7.4 to 8.4

Langhei, eroded

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: loamy glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Apk -- 0 to 7 in	loam	moderate	1.20 to 1.56 in	6.6 to 8.4
Bk,C -- 7 to 60 in	loam	moderate	7.91 to 10.02 in	7.4 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

WsC2--Waukon-Langhei-Sioux complex, 6 to 12 percent slopes, eroded

Sioux

Extent: 20 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .05

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 7 in	loamy coarse sand	rapid	0.71 to 0.85 in	6.6 to 7.8
AC,C -- 7 to 60 in	gravelly coarse sand	rapid	1.06 to 3.17 in	6.6 to 8.4

Map Unit Description (MN)

Douglas County, Minnesota

ZoC2--Zell-Rothsay silt loams, 6 to 12 percent slopes, eroded

Zell, eroded

Extent: 55 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: silty eolian or lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .37

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 7 in	silt loam	moderate	1.35 to 1.56 in	6.6 to 8.4
Bk -- 7 to 18 in	silt loam	moderate	1.65 to 2.20 in	7.4 to 8.4
C -- 18 to 60 in	silt loam	moderate	6.26 to 8.35 in	7.4 to 9.0

Rothsay, eroded

Extent: 35 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: silty eolian or lacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .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>
Ap -- 0 to 7 in	silt loam	moderate	1.56 to 1.70 in	6.6 to 7.3
Bw -- 7 to 22 in	silt loam	moderate	2.54 to 3.29 in	6.6 to 7.8
Bk,C -- 22 to 60 in	silt loam	moderately rapid	7.56 to 8.31 in	7.4 to 8.4

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.