

Map Unit Description (MN)

Grant 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]

26--Aazdahl clay loam, 1 to 3 percent slopes

Aazdahl

<i>Extent:</i> 85 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on till plains, rises on till plains	<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,A -- 0 to 14 in	clay loam	moderate	2.41 to 2.69 in	6.6 to 7.3
Bw -- 14 to 20 in	clay loam	moderately slow	1.00 to 1.12 in	6.6 to 7.8
Bk -- 20 to 36 in	clay loam	moderately slow	2.20 to 2.68 in	7.4 to 8.4
C -- 36 to 60 in	clay loam	moderately slow	3.36 to 4.08 in	7.4 to 8.4

33B--Barnes loam, 2 to 5 percent slopes

Barnes

<i>Extent:</i> 85 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> 6
<i>Slope gradient:</i> 2 to 5 percent	<i>Wind erodibility index (WEI):</i> 48
<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> 2e
<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 -- 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

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34--Parnell silty clay loam

Parnell

Extent: 85 percent of the unit

Landform(s): depressions on moraines

Slope gradient: 0 to 1 percent

Parent material: local colluvium and 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) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silty clay loam	moderately slow	3.40 to 4.16 in	6.1 to 7.8
Btg -- 19 to 41 in	silty clay	slow	2.87 to 4.19 in	6.1 to 7.8
Cg -- 41 to 60 in	silty clay loam	slow	2.08 to 3.59 in	6.6 to 8.4

36--Flom silty clay loam

Flom

Extent: 85 percent of the unit

Landform(s): swales on till plains

Slope gradient: 0 to 2 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) .32

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 17 in	silty clay loam	moderately slow	3.05 to 3.72 in	6.1 to 7.8
Bg -- 17 to 21 in	clay loam	moderately slow	0.59 to 0.75 in	6.6 to 8.4
C -- 21 to 60 in	clay loam	moderately slow	5.46 to 7.41 in	7.4 to 8.4

Map Unit Description (MN)

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38C--Waukon loam, 4 to 12 percent slopes

Waukon

Extent: 85 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 4 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) .28

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 6 in	loam	moderate	1.18 to 1.42 in	6.1 to 7.3
E,Bt -- 6 to 27 in	clay loam	moderate	3.13 to 3.96 in	6.1 to 8.4
C -- 27 to 60 in	loam	moderate	4.96 to 6.28 in	7.4 to 8.4

38D--Waukon loam, 12 to 24 percent slopes

Waukon

Extent: 85 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 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) .28

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 6 in	loam	moderate	1.18 to 1.42 in	6.1 to 7.3
E,Bt -- 6 to 27 in	clay loam	moderate	3.13 to 3.96 in	6.1 to 8.4
C -- 27 to 60 in	loam	moderate	4.96 to 6.28 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

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

Maddock

Extent: 90 percent of the unit

Landform(s): hillslopes on outwash plains

Slope gradient: 1 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): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .17

Land capability, nonirrigated 4s

Hydric soil: no

Hydrologic group: A

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 12 in	loamy sand	rapid	1.18 to 1.42 in	6.6 to 7.8
Bw,C -- 12 to 60 in	fine sand	rapid	2.40 to 4.80 in	6.6 to 8.4

45C--Maddock loamy sand, 6 to 18 percent slopes

Maddock

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: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .17

Land capability, nonirrigated 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 12 in	loamy sand	rapid	1.18 to 1.42 in	6.6 to 7.8
Bw,C -- 12 to 60 in	fine sand	rapid	2.40 to 4.80 in	6.6 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

57--Fargo silty clay

Fargo

<i>Extent:</i> 85 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on lake plains	<i>Wind erodibility group (WEG):</i> 4
<i>Slope gradient:</i> 0 to 1 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> clayey lacustrine sediments	<i>Kw factor (surface layer)</i> .15
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 2w
<i>Flooding:</i> none	<i>Hydric soil:</i> yes
<i>Ponding:</i> none	<i>Hydrologic group:</i> C/D
<i>Drainage class:</i> poorly 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,A -- 0 to 13 in	silty clay	slow	1.95 to 2.34 in	6.6 to 7.8
Bw -- 13 to 18 in	silty clay	slow	0.72 to 0.87 in	6.6 to 8.4
Cg -- 18 to 60 in	silty clay	slow	5.84 to 7.09 in	7.9 to 8.4

58--Kittson very fine sandy loam, 0 to 2 percent slopes

Kittson

<i>Extent:</i> 85 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on till-floored lake plains, rises on till-floored lake plains	<i>Wind erodibility group (WEG):</i> 3
<i>Slope gradient:</i> 0 to 2 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> glaciolacustrine deposits over loamy glacial till	<i>Kw factor (surface layer)</i> .28
<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,A -- 0 to 10 in	very fine sandy loam	moderately rapid	1.97 to 2.17 in	6.6 to 7.8
Bw -- 10 to 17 in	very fine sandy loam	moderate	1.20 to 1.35 in	6.6 to 7.8
2C -- 17 to 60 in	clay loam	moderate	6.44 to 7.72 in	7.4 to 8.4

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60--Glyndon silt loam, 0 to 2 percent slopes

Glyndon

Extent: 85 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: silty glaciolacustrine sediments

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 10 in	silt loam	moderate	1.97 to 2.26 in	7.4 to 8.4
Bk -- 10 to 23 in	silt loam	moderately rapid	2.21 to 2.60 in	7.4 to 8.4
2C -- 23 to 60 in	loamy very fine sand	moderately rapid	5.55 to 7.03 in	7.4 to 8.4

61--Arveson fine sandy loam

Arveson

Extent: 85 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: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 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 14 in	fine sandy loam	moderately rapid	1.84 to 2.13 in	7.4 to 8.4
Ak -- 14 to 34 in	fine sandy loam	moderately rapid	2.95 to 3.35 in	7.4 to 8.4
2C -- 34 to 60 in	fine sand	rapid	1.30 to 3.90 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

63--Rockwell loam

Rockwell

Extent: 85 percent of the unit
Landform(s): flats on till-floored lake plains, swales on till-floored lake plains
Slope gradient: 0 to 1 percent
Parent material: glaciolacustrine sediments over 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): .20
Land capability, nonirrigated: 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 13 in	loam	moderate	2.34 to 2.86 in	7.4 to 8.4
A2 -- 13 to 24 in	sandy loam	moderately rapid	1.65 to 1.87 in	7.9 to 8.4
Bkg -- 24 to 35 in	fine sand	rapid	0.55 to 0.77 in	7.4 to 7.8
2Cg -- 35 to 60 in	clay loam	moderate	4.46 to 5.46 in	7.4 to 7.8

Map Unit Description (MN)

Grant County, Minnesota

64--Ulen loamy fine sand, 0 to 2 percent slopes

Ulen

Extent: 85 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: sandy glaciolacustine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

Kw factor (surface layer) .10

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: A/D

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,Ak -- 0 to 16 in	loamy fine sand	rapid	1.61 to 1.94 in	7.4 to 8.4
Bk -- 16 to 22 in	fine sand	rapid	0.30 to 0.47 in	7.9 to 8.4
C -- 22 to 60 in	fine sand	rapid	1.89 to 3.02 in	7.4 to 8.4

67--Bearden silt loam, 0 to 2 percent slopes

Bearden

Extent: 85 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .32

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	silt loam	moderate	1.57 to 1.89 in	7.4 to 8.4
ABk,Bk -- 8 to 22 in	silt loam	moderately slow	2.27 to 3.12 in	7.4 to 8.4
C -- 22 to 60 in	silt loam	slow	6.05 to 8.31 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

70--Svea loam, 1 to 3 percent slopes

Svea

Extent: 85 percent of the unit
Landform(s): hillslopes on moraines, flats on till plains, rises on till plains
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): 6
Wind erodibility index (WEI): 48
Kw factor (surface layer) .28
Land capability, nonirrigated 1
Hydric soil: no
Hydrologic group: C
Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	loam	moderate	2.69 to 2.99 in	6.1 to 7.8
Bw -- 15 to 24 in	loam	moderate	1.54 to 1.99 in	6.6 to 7.8
Bk,C -- 24 to 60 in	loam	moderate	5.02 to 6.81 in	7.4 to 8.4

108--McIntosh silt loam, 0 to 2 percent slopes

McIntosh

Extent: 85 percent of the unit
Landform(s): rises on till plains, rises on till-floored lake plains
Slope gradient: 0 to 2 percent
Parent material: silty glaciolacustrine deposits over 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): 4L
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2s
Hydric soil: no
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,Ak -- 0 to 12 in	silt loam	moderate	2.36 to 2.83 in	7.4 to 8.4
Bk -- 12 to 27 in	silt loam	moderate	2.46 to 3.38 in	7.4 to 8.4
2C -- 27 to 60 in	clay loam	moderate	4.57 to 6.21 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

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

Sverdrup

Extent: 85 percent of the unit

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

Slope gradient: 2 to 6 percent

Parent material: loamy mantle over sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: somewhat excessively drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .10

Land capability, nonirrigated 3e

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 10 in	sandy loam	moderately rapid	1.28 to 1.48 in	6.1 to 7.3
Bw --	10 to 24 in	loamy sand	moderately rapid	1.13 to 1.98 in	6.1 to 7.8
2C --	24 to 60 in	sand	rapid	0.72 to 2.15 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

171B--Formdale clay loam, 2 to 5 percent slopes

Formdale

Extent: 85 percent of the unit

Landform(s): hillslopes on till plains

Slope gradient: 2 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) .15

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	moderate	1.54 to 1.72 in	6.1 to 7.3
Bw -- 9 to 16 in	clay loam	moderately slow	1.20 to 1.35 in	6.6 to 7.8
Bk -- 16 to 34 in	clay loam	moderately slow	2.48 to 3.37 in	7.4 to 8.4
C -- 34 to 60 in	clay loam	moderately slow	3.64 to 4.94 in	7.4 to 8.4

184--Hamerly clay loam, 1 to 3 percent slopes

Hamerly

Extent: 85 percent of the unit

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

Slope gradient: 1 to 3 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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 12 in	clay loam	moderate	2.01 to 2.60 in	6.6 to 8.4
Bk -- 12 to 26 in	clay loam	moderate	2.13 to 2.69 in	7.4 to 8.4
C -- 26 to 60 in	clay loam	moderate	4.74 to 6.43 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

212B--Sinai silty clay, 1 to 6 percent slopes

Sinai

Extent: 85 percent of the unit

Landform(s): glacial lakes on hillslopes on moraines

Slope gradient: 1 to 6 percent

Parent material: clayey glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: C

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silty clay	slow	2.46 to 3.02 in	6.1 to 7.3
Bw -- 19 to 25 in	silty clay	slow	1.07 to 1.20 in	6.6 to 7.8
C1 -- 25 to 34 in	silty clay	slow	0.95 to 1.47 in	7.4 to 8.4
C2 -- 34 to 60 in	silty clay	slow	2.86 to 4.42 in	7.4 to 8.4

Map Unit Description (MN)

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212C--Sinai silty clay, 6 to 12 percent slopes

Sinai

Extent: 85 percent of the unit

Landform(s): glacial lakes on hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material: clayey glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 3e

Hydric soil: no

Hydrologic group: C

Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silty clay	slow	2.46 to 3.02 in	6.1 to 7.3
Bw -- 19 to 25 in	silty clay	slow	1.07 to 1.20 in	6.6 to 7.8
C1 -- 25 to 34 in	silty clay	slow	0.95 to 1.47 in	7.4 to 8.4
C2 -- 34 to 60 in	silty clay	slow	2.86 to 4.42 in	7.4 to 8.4

220E--Langhei loam, 18 to 35 percent slopes

Langhei

Extent: 85 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 18 to 35 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) .24

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 5 in	loam	moderate	0.87 to 1.13 in	6.6 to 8.4
Bk,C -- 5 to 60 in	loam	moderate	8.21 to 10.40 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

236--Vallers clay loam

Vallers

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> rims on depressions on moraines, flats on moraines</p> <p><i>Slope gradient:</i> 0 to 2 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> poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 4L</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer):</i> .24</p> <p><i>Land capability, nonirrigated:</i> 2w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> C/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	clay loam	moderately slow	2.55 to 3.12 in	7.4 to 8.4
Bkg -- 14 to 25 in	clay loam	moderately slow	1.65 to 2.09 in	7.4 to 8.4
Cg -- 25 to 60 in	loam	moderately slow	5.89 to 6.58 in	7.4 to 8.4

276--Oldham silty clay loam

Oldham

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> depressions on moraines, glacial lakes on moraines</p> <p><i>Slope gradient:</i> 0 to 1 percent</p> <p><i>Parent material:</i> silty and clayey glaciolacustrine deposits</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> frequent</p> <p><i>Drainage class:</i> very poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 4</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer):</i> .20</p> <p><i>Land capability, nonirrigated:</i> 3w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> C/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	silty clay loam	moderately slow	1.18 to 1.72 in	6.6 to 7.8
A -- 9 to 39 in	silty clay loam	moderately slow	4.19 to 5.98 in	7.4 to 8.4
C -- 39 to 60 in	silty clay loam	moderately slow	2.92 to 4.17 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

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

Rothsay

Extent: 85 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material: silty glaciolacustrine deposits

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

Kw factor (surface layer) .32

Land capability, nonirrigated 2e

Hydric soil: no

Hydrologic group: B

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 15 in	silt loam	moderate	3.29 to 3.59 in	6.6 to 7.3
Bw -- 15 to 26 in	silt loam	moderate	1.87 to 2.43 in	6.6 to 7.8
C -- 26 to 60 in	silt loam	moderately rapid	6.77 to 7.45 in	7.4 to 8.4

330--Towner fine sandy loam, 0 to 2 percent slopes

Towner

Extent: 85 percent of the unit

Landform(s): rises on lake plains, rises on till plains

Slope gradient: 0 to 2 percent

Parent material: loamy and sandy glaciolacustrine deposits over 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): 3

Wind erodibility index (WEI): 86

Kw factor (surface layer) .20

Land capability, nonirrigated 3s

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<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 1.63 in	6.6 to 7.8
Bw -- 9 to 26 in	loamy fine sand	rapid	1.02 to 2.20 in	6.6 to 7.8
2C -- 26 to 60 in	clay loam	moderate	4.74 to 7.45 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

335--Urness mucky silt loam

Urness

Extent: 85 percent of the unit

Landform(s): depressions on moraines, lakebeds (relict) on moraines, depressions on till plains, lakebeds (relict) on till plains

Slope gradient: 0 to 1 percent

Parent material: coprogenous earth

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .28

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>			<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 8 in	mucky silt loam		moderate	1.42 to 1.89 in	7.4 to 8.4
C --	8 to 47 in	mucky silt loam		moderate	6.24 to 8.57 in	7.4 to 8.4
2C --	47 to 60 in	silty clay loam		moderate	1.82 to 2.60 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

339--Fordville loam, 0 to 2 percent slopes

Fordville

Extent: 85 percent of the unit

Landform(s): hillslopes 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: well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B

Potential for frost action: low

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 12 in	loam	moderate	2.13 to 2.36 in	6.1 to 7.3
Bw --	12 to 20 in	loam	moderate	1.49 to 1.74 in	6.1 to 7.8
2Bk --	20 to 30 in	gravelly loam	moderately rapid	1.18 to 1.77 in	6.1 to 8.4
C --	30 to 60 in	gravelly coarse sand	very rapid	0.90 to 1.80 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

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

Arvilla

Extent: 85 percent of the unit

Landform(s): hillslopes on beach plains, hillslopes 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

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	6.1 to 8.4
Bw --	8 to 12 in	coarse sandy loam	moderately rapid	0.43 to 0.55 in	6.6 to 8.4
2Bk,2C --	12 to 60 in	gravelly coarse sand	very rapid	0.96 to 2.40 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

341B--Arvilla sandy loam, 2 to 6 percent slopes

Arvilla

Extent: 85 percent of the unit
Landform(s): hillslopes on beach plains, 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 4s
Hydric soil: no
Hydrologic group: A
Potential for frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	sandy loam	moderately rapid	1.02 to 1.18 in	6.1 to 8.4
Bw -- 8 to 12 in	coarse sandy loam	moderately rapid	0.43 to 0.55 in	6.6 to 8.4
2Bk,2C -- 12 to 60 in	gravelly coarse sand	very rapid	0.96 to 2.40 in	7.4 to 8.4

343--Wheatville very fine sandy loam, 0 to 2 percent slopes

Wheatville

Extent: 85 percent of the unit
Landform(s): flats on lake plains, rises on lake plains
Slope gradient: 0 to 2 percent
Parent material: glaciolacustrine deposits over clayey material
Restrictive feature(s): greater than 60 inches
Flooding: none
Ponding: none
Drainage class: moderately well drained

Soil loss tolerance (T factor): 4
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
Kw factor (surface layer) .28
Land capability, nonirrigated 2s
Hydric soil: no
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 13 in	very fine sandy loam	moderately rapid	2.34 to 2.86 in	7.4 to 8.4
Bk,C -- 13 to 29 in	loamy very fine sand	moderately rapid	2.74 to 3.55 in	7.4 to 8.4
2C -- 29 to 60 in	silty clay	slow	3.07 to 5.83 in	7.4 to 7.8

Map Unit Description (MN)

Grant County, Minnesota

344--Quam silty clay loam

Quam

Extent: 85 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material: local alluvium and 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

Representative soil profile:

		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap --	0 to 7 in	silty clay loam	moderately slow	1.28 to 1.56 in	6.6 to 7.8
A --	7 to 39 in	silty clay loam	moderately slow	5.10 to 7.02 in	6.6 to 7.8
C --	39 to 60 in	silty clay loam	moderately slow	2.92 to 3.96 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

359--Lamoure silt loam, frequently flooded

Lamoure, frequently flooded

Extent: 85 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material: silty alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer) .28

Land capability, nonirrigated 6w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A1 -- 0 to 19 in	silt loam	moderate	3.59 to 4.16 in	7.4 to 8.4
A2 -- 19 to 32 in	silty clay loam	moderate	2.21 to 2.60 in	7.4 to 8.4
Bg -- 32 to 43 in	silty clay loam	moderate	1.87 to 2.20 in	7.4 to 8.4
2Cg -- 43 to 60 in	stratified sandy loam to silty clay loam	moderate	1.52 to 3.05 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

366--Hecla loamy fine sand, 0 to 2 percent slopes

Hecla

Extent: 85 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: sandy outwash

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 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: 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	loamy fine sand	rapid	0.91 to 1.09 in	6.1 to 7.3
A -- 9 to 15 in	loamy fine sand	rapid	0.47 to 0.59 in	6.1 to 7.8
Bw -- 15 to 26 in	fine sand	rapid	0.66 to 1.10 in	6.6 to 8.4
C -- 26 to 60 in	fine sand	moderately rapid	2.03 to 3.39 in	6.6 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

375--Forada sandy loam

Forada

Extent: 85 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) .17

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>		<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 15 in	sandy loam	moderate	2.99 to 3.29 in	6.1 to 7.8
Bg --	15 to 23 in	sandy clay loam	moderately rapid	0.94 to 1.50 in	6.1 to 7.8
2C --	23 to 60 in	gravelly coarse sand	rapid	0.74 to 3.70 in	6.6 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

402B--Sioux loamy coarse sand, 0 to 6 percent slopes

Sioux

Extent: 90 percent of the unit
Landform(s): hillslopes on beach plains, hillslopes on outwash plains
Slope gradient: 0 to 6 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) .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>
Ap --	0 to 11 in	loamy coarse sand	moderately rapid	0.88 to 1.32 in	6.6 to 8.4
C --	11 to 60 in	stratified gravelly coarse sand to sand	very rapid	1.46 to 2.93 in	7.4 to 8.4

402C--Sioux loamy coarse sand, 6 to 12 percent slopes

Sioux

Extent: 90 percent of the unit
Landform(s): hillslopes on beach plains, hillslopes on outwash plains
Slope gradient: 6 to 12 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) .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>
Ap --	0 to 9 in	loamy coarse sand	moderately rapid	0.72 to 1.09 in	6.6 to 8.4
C --	9 to 60 in	stratified gravelly coarse sand to sand	very rapid	1.52 to 3.05 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

402D--Sioux gravelly loamy coarse sand, 12 to 35 percent slopes

Sioux

<p><i>Extent:</i> 90 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on beach plains, hillslopes on outwash plains</p> <p><i>Slope gradient:</i> 12 to 35 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> 7s</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 9 in	gravelly loamy coarse sand	moderately rapid	0.72 to 1.09 in	6.6 to 8.4
C -- 9 to 60 in	stratified gravelly coarse sand to sand	very rapid	1.52 to 3.05 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

418--Lamoure silt loam

Lamoure, occasionally flooded

Extent: 85 percent of the unit

Landform(s): swales on flood plains on moraines

Slope gradient: 0 to 1 percent

Parent material: silty alluvium

Restrictive feature(s): greater than 60 inches

Flooding: occasional

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .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>
A1 -- 0 to 19 in	silt loam	moderate	3.59 to 4.16 in	7.4 to 8.4
A2 -- 19 to 32 in	silty clay loam	moderate	2.21 to 2.60 in	7.4 to 8.4
Bg -- 32 to 43 in	silty clay loam	moderate	1.87 to 2.20 in	7.4 to 8.4
2Cg -- 43 to 60 in	stratified sandy loam to silty clay loam	moderate	1.52 to 3.05 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

419--Vallers clay loam, firm subsoil

Vallers, firm subsoil

<i>Extent:</i> 85 percent of the unit	<i>Soil loss tolerance (T factor):</i> 5
<i>Landform(s):</i> flats on till-floored lake plains, swales on till-floored lake plains	<i>Wind erodibility group (WEG):</i> 4L
<i>Slope gradient:</i> 0 to 2 percent	<i>Wind erodibility index (WEI):</i> 86
<i>Parent material:</i> loamy glacial till	<i>Kw factor (surface layer)</i> .24
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 2w
<i>Flooding:</i> none	<i>Hydric soil:</i> yes
<i>Ponding:</i> none	<i>Hydrologic group:</i> C/D
<i>Drainage class:</i> poorly 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,A -- 0 to 14 in	clay loam	moderately slow	2.55 to 3.12 in	7.4 to 8.4
Bkg -- 14 to 25 in	clay loam	moderately slow	1.65 to 2.09 in	7.4 to 8.4
Cg -- 25 to 60 in	clay loam	moderately slow	5.89 to 6.58 in	7.4 to 8.4

494B--Darnen loam, 1 to 4 percent slopes

Darnen

<i>Extent:</i> 85 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> 6
<i>Slope gradient:</i> 1 to 4 percent	<i>Wind erodibility index (WEI):</i> 48
<i>Parent material:</i> local colluvium and loamy glacial till	<i>Kw factor (surface layer)</i> .28
<i>Restrictive feature(s):</i> greater than 60 inches	<i>Land capability, nonirrigated</i> 2e
<i>Flooding:</i> none	<i>Hydric soil:</i> no
<i>Ponding:</i> none	<i>Hydrologic group:</i> B
<i>Drainage class:</i> moderately 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,A -- 0 to 28 in	loam	moderate	5.59 to 6.71 in	6.6 to 7.8
Bw -- 28 to 45 in	clay loam	moderate	2.54 to 3.22 in	6.1 to 7.8
C -- 45 to 60 in	clay loam	moderate	2.09 to 2.84 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

582--Roliss loam

Roliss

Extent: 85 percent of the unit

Landform(s): flats on till-floored lake plains, swales on till-floored lake plains

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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

Representative soil profile:

			<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A --	0 to 11 in	loam		moderate	1.87 to 2.65 in	6.6 to 8.4
Bg1 --	11 to 16 in	loam		moderate	0.77 to 0.97 in	7.4 to 8.4
Bg2 --	16 to 24 in	clay loam		moderate	1.18 to 1.50 in	7.4 to 8.4
Cg --	24 to 60 in	clay loam		moderate	5.37 to 6.81 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

900--Aazdahl-Hamerly-Parnell complex, 0 to 2 percent slopes

Aazdahl

Extent: 30 percent of the unit

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

Slope gradient: 0 to 2 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 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	6.6 to 7.3
Bw -- 14 to 20 in	clay loam	moderately slow	1.00 to 1.12 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 6.76 in	7.4 to 8.4

Hamerly

Extent: 30 percent of the unit

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

Slope gradient: 1 to 2 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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 8 in	clay loam	moderate	1.34 to 1.73 in	6.6 to 8.4
Bk -- 8 to 19 in	clay loam	moderate	1.65 to 2.09 in	7.4 to 8.4
C -- 19 to 60 in	clay loam	moderate	5.73 to 7.78 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

900--Aazdahl-Hamerly-Parnell complex, 0 to 2 percent slopes

Parnell

Extent: 20 percent of the unit

Landform(s): depressions on till plains

Slope gradient: 0 to 1 percent

Parent material: local colluvium and 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) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silty clay loam	moderately slow	3.40 to 4.16 in	6.1 to 7.8
Btg -- 19 to 41 in	silty clay	slow	2.87 to 4.19 in	6.1 to 7.8
Cg -- 41 to 60 in	silty clay loam	slow	2.08 to 3.59 in	6.6 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

903B--Barnes-Langhei loams, 3 to 6 percent slopes

Barnes

<p><i>Extent:</i> 50 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on moraines</p> <p><i>Slope gradient:</i> 3 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>
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

<p><i>Extent:</i> 30 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on moraines</p> <p><i>Slope gradient:</i> 3 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> .24</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>
Ap -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	6.6 to 8.4
Bk,C -- 5 to 60 in	loam	moderate	8.21 to 10.40 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

907B--Barnes-Svea loams, 1 to 3 percent slopes

Barnes

Extent: 50 percent of the unit

Landform(s): hillslopes 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: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: 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

Svea

Extent: 30 percent of the unit

Landform(s): flats on moraines, swales 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): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 15 in	loam	moderate	2.69 to 2.99 in	6.1 to 7.8
Bw -- 15 to 24 in	loam	moderate	1.54 to 1.99 in	6.6 to 7.8
Bk,C -- 24 to 60 in	loam	moderate	5.02 to 6.81 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

912B--Formdale-Aazdahl-Flom complex, 1 to 4 percent slopes

Formdale

<p><i>Extent:</i> 30 percent of the unit</p> <p><i>Landform(s):</i> hillslopes on till plains</p> <p><i>Slope gradient:</i> 2 to 4 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> .15</p> <p><i>Land capability, nonirrigated</i> 2e</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> C</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	clay loam	moderate	1.54 to 1.72 in	6.1 to 7.3
Bw -- 9 to 16 in	clay loam	moderately slow	1.20 to 1.35 in	6.6 to 7.8
Bk,C -- 16 to 60 in	clay loam	moderately slow	6.12 to 8.30 in	7.4 to 8.4

Aazdahl

<p><i>Extent:</i> 30 percent of the unit</p> <p><i>Landform(s):</i> flats on till plains, rises on till plains</p> <p><i>Slope gradient:</i> 1 to 3 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> moderately 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> .17</p> <p><i>Land capability, nonirrigated</i> 1</p> <p><i>Hydric soil:</i> no</p> <p><i>Hydrologic group:</i> C</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 14 in	clay loam	moderate	2.41 to 2.69 in	6.6 to 7.3
Bw -- 14 to 20 in	clay loam	moderately slow	1.00 to 1.12 in	6.6 to 7.8
Bk,C -- 20 to 60 in	clay loam	moderately slow	5.57 to 6.76 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

912B--Formdale-Aazdahl-Flom complex, 1 to 4 percent slopes

Flom

<p><i>Extent:</i> 20 percent of the unit</p> <p><i>Landform(s):</i> swales on till plains</p> <p><i>Slope gradient:</i> 1 to 3 percent</p> <p><i>Parent material:</i> till</p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i> none</p> <p><i>Ponding:</i> none</p> <p><i>Drainage class:</i> poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</p> <p><i>Wind erodibility group (WEG):</i> 4L</p> <p><i>Wind erodibility index (WEI):</i> 86</p> <p><i>Kw factor (surface layer)</i> .32</p> <p><i>Land capability, nonirrigated</i> 2w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> C/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 17 in	silty clay loam	moderately slow	3.05 to 3.72 in	6.1 to 7.8
Bg -- 17 to 21 in	clay loam	moderately slow	0.59 to 0.75 in	6.6 to 8.4
C -- 21 to 60 in	clay loam	moderately slow	5.46 to 7.41 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

914--Grimstad-Towner complex, 0 to 2 percent slopes

Grimstad

<p><i>Extent:</i> 50 percent of the unit</p> <p><i>Landform(s):</i> flats on till-floored lake plains, rises on till-floored lake plains</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i> sandy glaciolacustrine deposits over 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> somewhat poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</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> .24</p> <p><i>Land capability, nonirrigated</i> 2s</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,A -- 0 to 15 in	very fine sandy loam	moderately rapid	2.99 to 3.29 in	7.4 to 8.4
Bk -- 15 to 26 in	loamy fine sand	rapid	0.55 to 1.87 in	7.4 to 9.0
2C -- 26 to 60 in	loam	moderate	5.08 to 6.43 in	7.4 to 9.0

Towner

<p><i>Extent:</i> 30 percent of the unit</p> <p><i>Landform(s):</i> flats on lake plains, rises on lake plains</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i> loamy and sandy glaciolacustrine deposits over 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> moderately well drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</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> .20</p> <p><i>Land capability, nonirrigated</i> 3s</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	fine sandy loam	moderately rapid	1.18 to 1.63 in	6.6 to 7.8
Bw -- 9 to 26 in	loamy fine sand	rapid	1.02 to 2.20 in	6.6 to 7.8
2C -- 26 to 60 in	clay loam	moderate	4.74 to 7.45 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

922--Hamerly-Parnell complex, 0 to 3 percent slopes

Hamerly

Extent: 50 percent of the unit

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

Slope gradient: 0 to 3 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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 2s

Hydric soil: no

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	clay loam	moderate	1.34 to 1.73 in	6.6 to 8.4
Bk -- 8 to 19 in	clay loam	moderate	1.65 to 2.09 in	7.4 to 8.4
C -- 19 to 60 in	clay loam	moderate	5.73 to 7.78 in	7.4 to 8.4

Parnell

Extent: 30 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material: local colluvium and 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) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silty clay loam	moderately slow	3.40 to 4.16 in	6.1 to 7.8
Btg -- 19 to 41 in	silty clay	slow	2.87 to 4.19 in	6.1 to 7.8
Cg -- 41 to 60 in	silty clay loam	slow	2.08 to 3.59 in	6.6 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

931B--Formdale-Langhei clay loams, 3 to 6 percent slopes

Formdale

Extent: 50 percent of the unit

Landform(s): hillslopes on till plains

Slope gradient: 3 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) .15

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	moderate	1.54 to 1.72 in	6.1 to 7.3
Bw -- 9 to 16 in	clay loam	moderately slow	1.20 to 1.35 in	6.6 to 7.8
Bk,C -- 16 to 60 in	clay loam	moderately slow	6.12 to 8.30 in	7.4 to 8.4

Langhei

Extent: 30 percent of the unit

Landform(s): hillslopes on till plains

Slope gradient: 3 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) .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 5 in	clay loam	moderate	0.87 to 1.13 in	6.6 to 8.4
Bk,C -- 5 to 60 in	loam	moderate	8.21 to 10.40 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

942C2--Langhei-Barnes loams, 6 to 12 percent slopes, eroded

Langhei, 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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .24

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: B

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 5 in	loam	moderate	0.87 to 1.13 in	6.6 to 8.4
Bk,C -- 5 to 60 in	loam	moderate	8.21 to 10.40 in	7.4 to 8.4

Barnes, 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): 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

Map Unit Description (MN)

Grant County, Minnesota

942D2--Langhei-Barnes loams, 12 to 18 percent slopes, eroded

Langhei, eroded

Extent: 50 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) .24

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 5 in	loam	moderate	0.87 to 1.13 in	6.6 to 8.4
Bk,C -- 5 to 60 in	loam	moderate	8.21 to 10.40 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 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

Map Unit Description (MN)

Grant County, Minnesota

943C2--Langhei-Formdale clay loams, 6 to 12 percent slopes, eroded

Langhei, eroded

Extent: 50 percent of the unit

Landform(s): hillslopes on till plains

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) .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 5 in	clay loam	moderate	0.87 to 1.13 in	6.6 to 8.4
Bk,C -- 5 to 60 in	loam	moderate	8.21 to 10.40 in	7.4 to 8.4

Formdale, eroded

Extent: 30 percent of the unit

Landform(s): hillslopes on till plains

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) .15

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	moderate	1.54 to 1.72 in	6.1 to 7.3
Bw -- 9 to 16 in	clay loam	moderately slow	1.20 to 1.35 in	6.6 to 7.8
Bk,C -- 16 to 60 in	clay loam	moderately slow	6.12 to 8.30 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

943D2--Langhei-Formdale clay loams, 12 to 18 percent slopes, eroded

Langhei, eroded

Extent: 50 percent of the unit

Landform(s): hillslopes on till plains

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) .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 5 in	clay loam	moderate	0.87 to 1.13 in	6.6 to 8.4
Bk,C -- 5 to 60 in	loam	moderate	8.21 to 10.40 in	7.4 to 8.4

Formdale, eroded

Extent: 30 percent of the unit

Landform(s): hillslopes on till plains

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) .15

Land capability, nonirrigated 4e

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 9 in	clay loam	moderate	1.54 to 1.72 in	6.1 to 7.3
Bw -- 9 to 16 in	clay loam	moderately slow	1.20 to 1.35 in	6.6 to 7.8
Bk,C -- 16 to 60 in	clay loam	moderately slow	6.12 to 8.30 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

962--Svea-Hamerly loams, 1 to 3 percent slopes

Svea

Extent: 50 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): 6

Wind erodibility index (WEI): 48

Kw factor (surface layer) .28

Land capability, nonirrigated 1

Hydric soil: no

Hydrologic group: C

Potential for frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 15 in	loam	moderate	2.69 to 2.99 in	6.1 to 7.8
Bw -- 15 to 24 in	loam	moderate	1.54 to 1.99 in	6.6 to 7.8
Bk,C -- 24 to 60 in	loam	moderate	5.02 to 6.81 in	7.4 to 8.4

Hamerly

Extent: 40 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: somewhat 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 2s

Hydric soil: no

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 8 in	loam	moderate	1.42 to 1.89 in	6.6 to 8.4
Bk -- 8 to 19 in	clay loam	moderate	1.65 to 2.09 in	7.4 to 8.4
C -- 19 to 60 in	clay loam	moderately slow	5.73 to 7.78 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

970--Rockwell-Vallers complex

Rockwell

Extent: 50 percent of the unit
Landform(s): flats on till-floored lake plains, swales on till-floored lake plains
Slope gradient: 0 to 1 percent
Parent material: glaciolacustrine sediments over 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) .20
Land capability, nonirrigated 2w
Hydric soil: yes
Hydrologic group: B/D
Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A1 -- 0 to 13 in	loam	moderate	2.34 to 2.86 in	7.4 to 8.4
A2 -- 13 to 24 in	sandy loam	moderately rapid	1.65 to 1.87 in	7.9 to 8.4
Bkg -- 24 to 35 in	fine sand	rapid	0.55 to 0.77 in	7.4 to 7.8
2Cg -- 35 to 60 in	clay loam	moderate	4.46 to 5.46 in	7.4 to 7.8

Vallers

Extent: 40 percent of the unit
Landform(s): flats on lake plains, swales on lake plains
Slope gradient: 0 to 2 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,A -- 0 to 14 in	clay loam	moderately slow	2.55 to 3.12 in	7.4 to 8.4
Bkg -- 14 to 25 in	clay loam	moderately slow	1.65 to 2.09 in	7.4 to 8.4
Cg -- 25 to 60 in	loam	moderately slow	5.89 to 6.58 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

971--Roliss complex

Roliss

Extent: 70 percent of the unit

Landform(s): flats on till-floored lake plains, swales on till-floored lake plains

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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 11 in	loam	moderate	1.87 to 2.65 in	6.6 to 8.4
Bg -- 11 to 16 in	loam	moderate	0.77 to 0.97 in	7.4 to 8.4
Cg -- 16 to 60 in	clay loam	moderate	6.56 to 8.30 in	7.4 to 8.4

Parnell

Extent: 20 percent of the unit

Landform(s): depressions on till plains

Slope gradient: 0 to 1 percent

Parent material: local colluvium and 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) .32

Land capability, nonirrigated 3w

Hydric soil: yes

Hydrologic group: C/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 19 in	silty clay loam	moderately slow	3.40 to 4.16 in	6.1 to 7.8
Btg -- 19 to 41 in	silty clay	slow	2.87 to 4.19 in	6.1 to 7.8
Cg -- 41 to 60 in	silty clay loam	slow	2.08 to 3.59 in	6.6 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

972--Roliss-Vallers complex

Roliss

Extent: 50 percent of the unit

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

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): 4L

Wind erodibility index (WEI): 86

Kw factor (surface layer) .17

Land capability, nonirrigated 2w

Hydric soil: yes

Hydrologic group: B/D

Potential for frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap,A -- 0 to 11 in	loam	moderate	1.87 to 2.65 in	6.6 to 8.4
Bg -- 11 to 16 in	loam	moderate	0.77 to 0.97 in	7.4 to 8.4
Cg -- 16 to 60 in	clay loam	moderate	6.56 to 8.30 in	7.4 to 8.4

Vallers

Extent: 40 percent of the unit

Landform(s): rims on depressions on till-floored lake plains, flats on till-floored lake plains

Slope gradient: 0 to 2 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,A -- 0 to 14 in	clay loam	moderately slow	2.55 to 3.12 in	7.4 to 8.4
Bkg -- 14 to 25 in	clay loam	moderately slow	1.65 to 2.09 in	7.4 to 8.4
Cg -- 25 to 60 in	loam	moderately slow	5.89 to 6.58 in	7.4 to 8.4

Map Unit Description (MN)

Grant County, Minnesota

1002--Alluvial land, frequently flooded

Alluvial land, frequently flooded

Extent: 85 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material: alluvium

Restrictive feature(s): greater than 60 inches

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw factor (surface layer)

Land capability, nonirrigated 6w

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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1032--Lake beaches

Beaches, lake

Extent: 85 percent of the unit

Landform(s): hillslopes on beaches

Slope gradient: 0 to 2 percent

Parent material: sandy and loamy lake beach deposits

Restrictive feature(s): greater than 60 inches

Flooding:

Ponding:

Drainage class: poorly drained

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

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)

Grant County, Minnesota

1053--Marsh

Marsh

Extent: 85 percent of the unit

Landform(s): depressions

Slope gradient: 0 to 1 percent

Parent material: lacustrine deposits or glacial till

Restrictive feature(s): greater than 60 inches

Flooding: none

Ponding: frequent

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

Kw factor (surface layer)

Land capability, nonirrigated 8w

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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GP--Gravel pit

Pits, gravel

Extent: 100 percent of the unit

Landform(s): beach plains, moraines, outwash plains

Slope gradient:

Parent material: gravelly and sandy 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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Map Unit Description (MN)

Grant County, Minnesota

V58--Kittson fine sandy loam, gray subsoil variant

Kittson, gray subsoil variant

<p><i>Extent:</i> 85 percent of the unit</p> <p><i>Landform(s):</i> flats on till-floored lake plains, swales on till-floored lake plains</p> <p><i>Slope gradient:</i> 0 to 2 percent</p> <p><i>Parent material:</i> glaciolacustrine deposits over 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> poorly drained</p>	<p><i>Soil loss tolerance (T factor):</i> 5</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> 2w</p> <p><i>Hydric soil:</i> yes</p> <p><i>Hydrologic group:</i> C/D</p> <p><i>Potential for frost action:</i> high</p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	fine sandy loam	moderately rapid	1.48 to 1.77 in	6.6 to 7.8
Bg -- 10 to 21 in	fine sandy loam	moderately rapid	1.65 to 1.98 in	6.6 to 7.8
2Cg -- 21 to 60 in	clay loam	moderately slow	5.46 to 6.24 in	7.4 to 8.4

W--Water

Water

<p><i>Extent:</i> 100 percent of the unit</p> <p><i>Landform(s):</i></p> <p><i>Slope gradient:</i></p> <p><i>Parent material:</i></p> <p><i>Restrictive feature(s):</i> greater than 60 inches</p> <p><i>Flooding:</i></p> <p><i>Ponding:</i></p> <p><i>Drainage class:</i></p>	<p><i>Soil loss tolerance (T factor):</i></p> <p><i>Wind erodibility group (WEG):</i></p> <p><i>Wind erodibility index (WEI):</i></p> <p><i>Kw factor (surface layer):</i></p> <p><i>Land capability, nonirrigated:</i></p> <p><i>Hydric soil:</i></p> <p><i>Hydrologic group:</i></p> <p><i>Potential for frost action:</i></p>
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<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>

Map Unit Description (MN)

Grant County, Minnesota

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.