

Map Unit Description (MN)

Clearwater 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]

20B--Chapett fine sandy loam, 2 to 6 percent slopes

Chapett

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 6 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential 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	fine sandy loam	moderate	1.2 to 1.7 in	6.1 to 7.3
B/E,Bt -- 9 to 21 in	sandy clay loam	moderate	1.8 to 2.2 in	6.1 to 7.3
Bck -- 21 to 60 in	fine sandy loam	moderate	3.9 to 6.2 in	7.4 to 8.4

20C2--Chapett fine sandy loam, 6 to 12 percent slopes, eroded

Chapett, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential 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 7 in	fine sandy loam	moderate	0.9 to 1.3 in	6.1 to 7.3
B/E,Bt -- 7 to 18 in	sandy clay loam	moderate	1.7 to 2.1 in	6.1 to 7.3
Bck -- 18 to 60 in	fine sandy loam	moderate	4.2 to 6.7 in	7.4 to 8.4

38B--Waukon loam, 2 to 6 percent slopes

This report shows only the major soils in each map unit

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38B--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:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

Ap,E --	0 to 8 in	loam
Bt1,Bt2 --	8 to 22 in	clay loam
BCK --	22 to 60 in	loam

Permeability

moderate
moderate
moderate

Available water

capacity

1.6 to 1.9 in	6.1 to 7.3
2.1 to 2.7 in	6.1 to 8.4
5.7 to 7.2 in	7.4 to 8.4

pH

38C2--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:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

Ap,E --	0 to 8 in	loam
Bt1,Bt2 --	8 to 21 in	clay loam
BCK --	21 to 60 in	loam

Permeability

moderate
moderate
moderate

Available water

capacity

1.6 to 1.9 in	6.1 to 7.3
1.9 to 2.5 in	6.1 to 8.4
5.8 to 7.4 in	7.4 to 8.4

pH

38D2--Waukon loam, 12 to 20 percent slopes, eroded

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38D2--Waukon loam, 12 to 20 percent slopes, eroded

Waukon, eroded

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 12 to 20 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

A1,E --	0 to 7 in	loam
Bt1,Bt2 --	7 to 22 in	clay loam
BCK --	22 to 60 in	loam

Permeability

moderate
moderate
moderate

Available water

capacity pH

1.4 to 1.7 in	6.1 to 7.3
2.2 to 2.8 in	6.1 to 8.4
5.7 to 7.2 in	7.4 to 8.4

40B--Nebish loam, 2 to 8 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 8 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

till *Kw (surface layer):* .32

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 3 in	loam
E --	3 to 9 in	fine sandy loam
Bt1,Bt2 --	9 to 26 in	clay loam
BCK --	26 to 60 in	loam

Permeability

moderate
moderately rapid
moderate
moderate

Available water

capacity pH

0.6 to 0.7 in	5.6 to 7.3
0.6 to 1.1 in	5.6 to 7.3
2.5 to 3.2 in	5.6 to 7.8
3.7 to 6.4 in	7.4 to 8.4

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40C--Nebish loam, 8 to 15 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 8 to 15 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

till *Kw (surface layer):* .32

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 3 in	loam
E --	3 to 8 in	fine sandy loam
Bt1,Bt2 --	8 to 24 in	clay loam
BCK --	24 to 60 in	loam

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
moderate	0.6 to 0.7 in	5.6 to 7.3
moderately rapid	0.5 to 0.9 in	5.6 to 7.3
moderate	2.4 to 3.1 in	5.6 to 7.8
moderate	3.9 to 6.8 in	7.4 to 8.4

40E--Nebish loam, 15 to 30 percent slopes

Nebish

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 15 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

till *Kw (surface layer):* .32

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 3 in	loam
E --	3 to 8 in	fine sandy loam
Bt1,Bt2 --	8 to 23 in	clay loam
BCK --	23 to 60 in	loam

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
moderate	0.6 to 0.7 in	5.6 to 7.3
moderately rapid	0.5 to 0.9 in	5.6 to 7.3
moderate	2.2 to 2.8 in	5.6 to 7.8
moderate	4.1 to 7.0 in	7.4 to 8.4

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40E--Nebish loam, 15 to 30 percent slopes

45E--Maddock loamy fine sand, 12 to 30 percent slopes

Maddock

Extent: 90 percent of the unit

Landform(s): hillslopes on lake plains

Slope gradient: 12 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

glaciolacustrine Kw (surface layer): .17

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

A --	0 to 10 in	loamy fine sand
Bw,C1,C2 --	10 to 60 in	fine sand

Permeability

Available water capacity

pH

rapid	0.8 to 1.2 in	6.6 to 7.8
rapid	2.5 to 6.5 in	6.6 to 8.4

63--Rockwell loam

Rockwell

Extent: 90 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

.24

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

glaciolacustrine and till Kw (surface layer):

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Representative soil profile:

Texture

Ap --	0 to 9 in	loam
Bkg1 --	9 to 17 in	loam
2Bkg2 --	17 to 32 in	sand
3BCkg --	32 to 60 in	loam

Permeability

Available water capacity

pH

moderate	1.6 to 2.0 in	7.4 to 8.4
moderately rapid	1.2 to 1.3 in	7.9 to 8.4
rapid	0.7 to 1.0 in	7.4 to 7.8
moderate	5.0 to 6.1 in	7.4 to 7.8

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63--Rockwell loam

111--Hangaard sandy loam

Hangaard

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

beach deposits Kw (surface layer): .20

Land capability class, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: moderate

Representative soil profile:

Texture

Ap --	0 to 10 in	sandy loam
Cg1 --	10 to 16 in	gravelly coarse sand
Cg2,Cg3 --	16 to 60 in	coarse sand

Available water

<i>Permeability</i>	<i>capacity</i>	<i>pH</i>
moderately rapid	1.0 to 1.4 in	6.6 to 7.8
rapid	0.4 to 0.7 in	6.6 to 7.8
very rapid	0.9 to 1.7 in	7.4 to 8.4

121--Wykeham fine sandy loam

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121--Wykeham fine sandy loam

Wykeham

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .17

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderately rapid	0.4 to 0.6 in	5.1 to 6.5
E -- 3 to 12 in	fine sandy loam	moderate	0.9 to 1.5 in	5.1 to 6.5
B/E,Bt1,Bt2 -- 12 to 34 in	loam	moderate	2.6 to 4.0 in	5.6 to 7.3
BCK -- 34 to 60 in	fine sandy loam	moderate	2.9 to 4.2 in	7.4 to 8.4

125--Beltrami loam

Beltrami

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .32

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 3 in	loam	moderate	0.6 to 0.7 in	6.1 to 7.3
E -- 3 to 9 in	fine sandy loam	moderately rapid	0.6 to 1.1 in	5.6 to 7.3
Bt1,Bt2 -- 9 to 25 in	clay loam	moderate	2.4 to 3.1 in	5.6 to 7.8
BCK -- 25 to 60 in	loam	moderate	5.2 to 6.6 in	7.4 to 8.4

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125--Beltrami loam

133B--Dalbo silt loam, 2 to 8 percent slopes

Dalbo

Extent: 90 percent of the unit

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

Slope gradient: 2 to 8 percent

Parent material:

.43

Restrictive feature(s):

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

glaciolacustrine and till *Kw (surface layer):*

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A,E --	0 to 6 in	silt loam
Bt --	6 to 35 in	silty clay
Bck1,Bck2 --	35 to 60 in	silt loam

Permeability

moderate
moderately slow
moderate

Available water

capacity

1.3 to 1.4 in
2.9 to 5.2 in
5.0 to 5.5 in

pH

5.6 to 7.3
5.1 to 7.3
7.4 to 8.4

133C--Dalbo silt loam, 8 to 15 percent slopes

Dalbo

Extent: 90 percent of the unit

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

Slope gradient: 8 to 15 percent

Parent material:

.43

Restrictive feature(s):

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

glaciolacustrine and till *Kw (surface layer):*

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A,E --	0 to 7 in	silt loam
Bt --	7 to 25 in	silty clay
Bck1,Bck2 --	25 to 60 in	silt loam

Permeability

moderate
moderately slow
moderate

Available water

capacity

1.6 to 1.7 in
1.8 to 3.3 in
6.9 to 7.6 in

pH

5.6 to 7.3
5.1 to 7.3
7.4 to 8.4

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133C--Dalbo silt loam, 8 to 15 percent slopes

133E--Dalbo silt loam, 15 to 30 percent slopes

Dalbo

Extent: 90 percent of the unit

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

Slope gradient: 15 to 30 percent

Parent material:

.43

Restrictive feature(s):

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

glaciolacustrine and till *Kw (surface layer):*

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A,E --	0 to 7 in	silt loam
Bt --	7 to 29 in	silty clay
Bck1,Bck2 --	29 to 60 in	silt loam

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
moderate	1.6 to 1.7 in	5.6 to 7.3
moderately slow	2.2 to 4.0 in	5.1 to 7.3
moderate	6.1 to 6.8 in	7.4 to 8.4

167A--Baudette silt loam

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167A--Baudette silt loam

Baudette

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material:

layer): .37

Restrictive feature(s):

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

glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 3 in	silt loam
E --	3 to 9 in	very fine sandy loam
Bt1,Bt2 --	9 to 30 in	silty clay loam
Bck --	30 to 60 in	silt loam

Permeability

moderate
moderate
moderate
moderate

Available water

capacity

0.6 to 0.7 in	5.6 to 7.3
0.8 to 1.2 in	5.6 to 7.3
3.5 to 5.0 in	5.6 to 7.8
5.1 to 6.6 in	7.4 to 8.4

pH

169B--Braham loamy fine sand, 2 to 8 percent slopes

Braham

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 8 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

outwash and till *Kw (surface layer):* .17

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

Representative soil profile:

Texture

Ap --	0 to 10 in	loamy fine sand
E --	10 to 25 in	loamy fine sand
2Bt --	25 to 35 in	sandy clay loam
2Bck --	35 to 60 in	loam

Permeability

rapid
rapid
moderate
moderate

Available water

capacity

1.0 to 1.2 in	5.6 to 7.3
1.2 to 1.5 in	5.6 to 7.3
1.5 to 1.8 in	5.1 to 7.3
3.7 to 4.5 in	7.4 to 8.4

pH

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169B--Braham loamy fine sand, 2 to 8 percent slopes

169C--Braham loamy fine sand, 8 to 15 percent slopes

Braham

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 8 to 15 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

outwash and till Kw (surface layer): .17

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: B

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water capacity

pH

Ap --	0 to 3 in	loamy fine sand	rapid	0.3 to 0.4 in	5.6 to 7.3
E --	3 to 30 in	loamy fine sand	rapid	2.1 to 2.7 in	5.6 to 7.3
2Bt --	30 to 38 in	sandy clay loam	moderate	1.2 to 1.5 in	5.1 to 7.3
2Bck --	38 to 60 in	loam	moderate	3.2 to 3.9 in	7.4 to 8.4

169E--Braham loamy fine sand, 15 to 30 percent slopes

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169E--Braham loamy fine sand, 15 to 30 percent slopes

Braham

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 15 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

outwash and till *Kw (surface layer):* .17

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Potential frost action: low

Representative soil profile:

Texture

A --	0 to 3 in	loamy fine sand
E --	3 to 32 in	loamy fine sand
2Bt --	32 to 48 in	sandy clay loam
2BCK --	48 to 60 in	loam

Permeability

rapid
rapid
moderate
moderate

Available water

capacity

0.3 to 0.4 in	5.6 to 7.3
2.3 to 2.9 in	5.6 to 7.3
2.4 to 2.9 in	5.1 to 7.3
1.8 to 2.1 in	7.4 to 8.4

pH

180--Gonvick loam

Gonvick

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

Ap --	0 to 8 in	loam
Bt1,Bt2 --	8 to 23 in	clay loam
BCK --	23 to 60 in	loam

Permeability

moderate
moderate
moderate

Available water

capacity

1.6 to 1.7 in	6.1 to 7.3
2.2 to 2.8 in	6.6 to 7.3
5.6 to 7.0 in	7.4 to 8.4

pH

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Map Unit Description (MN)

Clearwater 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]

205--Karlstad sandy loam

Karlstad

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

beach deposits Kw (surface layer): .24

Land capability class, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A,E -- 0 to 12 in	sandy loam	moderately rapid	1.5 to 2.1 in	4.5 to 7.3
Bt1 -- 12 to 18 in	sandy loam	moderately rapid	0.8 to 1.1 in	6.1 to 7.3
2Bt2 -- 18 to 24 in	gravelly coarse sandy loam	moderately rapid	0.7 to 0.9 in	6.1 to 7.8
2BCK -- 24 to 60 in	stratified gravelly coarse sand to loamy fine sand	very rapid	0.7 to 1.4 in	7.4 to 8.4

258B--Sandberg loamy sand, 1 to 6 percent slopes

Sandberg

Extent: 90 percent of the unit

Landform(s): hillslopes on beach ridges

Slope gradient: 1 to 6 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: excessively drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

beach deposits Kw (surface layer): .15

Land capability class, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
Ap -- 0 to 10 in	loamy sand	rapid	1.0 to 1.2 in	5.6 to 7.8
Bw1 -- 10 to 15 in	loamy sand	rapid	0.2 to 0.5 in	6.1 to 7.8
BCK2 -- 15 to 30 in	gravelly sand	very rapid	0.3 to 0.9 in	7.4 to 8.4
C1,C2 -- 30 to 60 in	sand	very rapid	0.6 to 1.8 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

258B--Sandberg loamy sand, 1 to 6 percent slopes

267B--Snellman sandy loam, 2 to 8 percent slopes

Snellman

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 8 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 2 in	sandy loam
E --	2 to 12 in	loamy fine sand
B/E, Bt1, Bt2 --	12 to 30 in	sandy clay loam
B/Ck --	30 to 60 in	fine sandy loam

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
moderately rapid	0.3 to 0.4 in	5.1 to 6.5
moderate	0.9 to 1.4 in	5.1 to 6.5
moderate	2.2 to 3.3 in	5.6 to 7.3
moderate	3.3 to 4.8 in	7.4 to 8.4

267C--Snellman sandy loam, 8 to 15 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

267C--Snellman sandy loam, 8 to 15 percent slopes

Snellman

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 8 to 15 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	sandy loam	moderately rapid	0.4 to 0.6 in	5.1 to 6.5
E -- 3 to 11 in	loamy fine sand	moderate	0.7 to 1.1 in	5.1 to 6.5
B/E,Bt1,Bt2 -- 11 to 33 in	sandy clay loam	moderate	2.6 to 4.0 in	5.6 to 7.3
BcK -- 33 to 60 in	fine sandy loam	moderate	2.9 to 4.3 in	7.4 to 8.4

267E--Snellman sandy loam, 15 to 30 percent slopes

Snellman

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 15 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	sandy loam	moderately rapid	0.4 to 0.6 in	5.1 to 6.5
E -- 3 to 16 in	loamy fine sand	moderate	1.2 to 1.8 in	5.1 to 6.5
B/E,Bt1,Bt2 -- 16 to 38 in	sandy clay loam	moderate	2.6 to 4.0 in	5.6 to 7.3
BcK -- 38 to 60 in	fine sandy loam	moderate	2.4 to 3.5 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

267E--Snellman sandy loam, 15 to 30 percent slopes

272--Bemidji loamy sand

Bemidji

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

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

outwash and till Kw (surface layer): .10

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

Ap --	0 to 6 in	loamy sand
E1,E2 --	6 to 24 in	sand
2B/E,2Bt --	24 to 42 in	sandy clay loam
2Bck --	42 to 60 in	fine sandy loam

<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
rapid	0.5 to 0.7 in	5.6 to 6.5
rapid	0.7 to 1.4 in	5.6 to 6.5
moderately slow	1.8 to 2.2 in	6.1 to 7.3
moderate	2.5 to 2.8 in	7.4 to 8.4

346--Talmoon loam

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

346--Talmoon loam

Talmoon

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

till *Kw (surface layer):* .28

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	loam	moderate	0.8 to 0.9 in	5.1 to 7.3
Eg -- 4 to 9 in	fine sandy loam	moderate	0.7 to 1.1 in	5.1 to 7.3
Btg1,Btg2 -- 9 to 26 in	clay loam	moderately slow	2.7 to 3.2 in	5.6 to 7.3
BCkg -- 26 to 60 in	loam	moderately slow	5.1 to 6.4 in	7.4 to 8.4

426--Foldahl loamy fine sand

Foldahl

Extent: 90 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material:

.20

Restrictive feature(s):

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

glaciolacustrine and till *Kw (surface layer):*

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential 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 10 in	loamy fine sand	rapid	1.0 to 1.4 in	6.1 to 7.8
Bw1,Bw2 -- 10 to 34 in	fine sand	rapid	1.7 to 2.9 in	6.6 to 7.8
2Bck -- 34 to 60 in	loam	moderate	3.6 to 4.9 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

426--Foldahl loamy fine sand

435--Syrene sandy loam

Syrene

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

beach deposits Kw (surface layer): .20

Land capability class, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 9 in	sandy loam
Bkg --	9 to 17 in	sandy loam
2Cg1,2Cg2 --	17 to 60 in	stratified gravelly coarse sand to loamy fine sand

Available water

<i>Permeability</i>	<i>capacity</i>	<i>pH</i>
moderately rapid	1.2 to 1.6 in	7.4 to 8.4
moderately rapid	1.2 to 1.5 in	7.9 to 8.4
rapid	0.9 to 1.7 in	7.4 to 8.4

439--Strathcona fine sandy loam

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

439--Strathcona fine sandy loam

Strathcona

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

.20

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

glaciolacustrine and till *Kw (surface layer):*

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Representative soil profile:

Texture

Ap --	0 to 10 in	fine sandy loam
Bkg1 --	10 to 18 in	fine sandy loam
2Bkg2 --	18 to 36 in	fine sand
3BCkg --	36 to 60 in	loam

Permeability

moderately rapid
moderately rapid
rapid
moderate

Available water

capacity

1.4 to 1.7 in
1.2 to 1.3 in
0.9 to 1.6 in
3.4 to 4.3 in

pH

7.4 to 8.4

481--Kratka fine sandy loam

Kratka

Extent: 90 percent of the unit

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

group (WEG): 3

moraines, swales on moraines

Slope gradient: 0 to 2 percent

Parent material:

.20

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility

Wind erodibility index (WEI): 86

glaciolacustrine and till *Kw (surface layer):*

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: moderate

Representative soil profile:

Texture

Ap --	0 to 10 in	fine sandy loam
Bg1,Bg2,Bg3 -	10 to 32 in	fine sand
2BCkg --	32 to 60 in	loam

Permeability

moderately rapid
rapid
moderate

Available water

capacity

1.3 to 1.8 in
1.3 to 2.4 in
3.1 to 5.3 in

pH

5.6 to 7.8
5.6 to 7.8
6.1 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

481--Kratka fine sandy loam

496B--Andrusia loamy sand, 1 to 6 percent slopes

Andrusia

Extent: 90 percent of the unit

Landform(s): hillslopes on beach ridges, hillslopes on outwash plains

Slope gradient: 1 to 6 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

A --	0 to 3 in	loamy sand
E1,E2 --	3 to 32 in	sand
Bt --	32 to 40 in	coarse sandy loam
BCK --	40 to 60 in	gravelly coarse sand

Permeability

rapid
rapid
moderately rapid
rapid

Available water

capacity

0.3 to 0.4 in
2.0 to 2.9 in
0.9 to 1.3 in
0.8 to 1.8 in

pH

5.6 to 7.3
5.6 to 7.3
5.6 to 7.3
7.4 to 8.4

496C--Andrusia loamy sand, 6 to 12 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

496C--Andrusia loamy sand, 6 to 12 percent slopes

Andrusia

Extent: 90 percent of the unit

Landform(s): hillslopes on beach ridges, hillslopes on outwash plains

Slope gradient: 6 to 12 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: A

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	5.6 to 7.3
E1,E2 -- 3 to 35 in	sand	rapid	2.2 to 3.2 in	5.6 to 7.3
Bt -- 35 to 43 in	coarse sandy loam	moderately rapid	0.9 to 1.3 in	5.6 to 7.3
BCK -- 43 to 60 in	gravelly coarse sand	rapid	0.7 to 1.5 in	7.4 to 8.4

505B--Debs silt loam, 2 to 8 percent slopes

Debs

Extent: 90 percent of the unit

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

Slope gradient: 2 to 8 percent

Parent material:

layer): .32

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential 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 2 in	silt loam	moderate	0.4 to 0.5 in	6.1 to 7.3
E -- 2 to 12 in	very fine sandy loam	moderately rapid	1.5 to 2.0 in	6.1 to 7.3
Bt1,Bt2 -- 12 to 32 in	silty clay loam	moderate	3.2 to 4.4 in	6.1 to 7.3
BCK -- 32 to 60 in	silt loam	moderate	3.9 to 6.1 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

505B--Debs silt loam, 2 to 8 percent slopes

505C--Debs silt loam, 8 to 15 percent slopes

Debs

Extent: 90 percent of the unit

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

Slope gradient: 8 to 15 percent

Parent material:

layer): .32

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 3 in	silt loam
E --	3 to 10 in	very fine sandy loam
Bt1,Bt2 --	10 to 26 in	silty clay loam
BCK --	26 to 60 in	silt loam

Permeability

Available water

capacity

pH

moderate	0.6 to 0.8 in	6.1 to 7.3
moderately rapid	1.0 to 1.3 in	6.1 to 7.3
moderate	2.6 to 3.6 in	6.1 to 7.3
moderate	4.7 to 7.4 in	7.4 to 8.4

505E--Debs silt loam, 15 to 30 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

505E--Debs silt loam, 15 to 30 percent slopes

Debs

Extent: 90 percent of the unit

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

Slope gradient: 15 to 30 percent

Parent material:

layer): .32

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 2 in	silt loam
E --	2 to 9 in	very fine sandy loam
Bt1,Bt2 --	9 to 25 in	silty clay loam
BCK --	25 to 60 in	silt loam

Permeability

moderate
moderately rapid
moderate
moderate

Available water

capacity

0.4 to 0.5 in	6.1 to 7.3
1.1 to 1.4 in	6.1 to 7.3
2.6 to 3.6 in	6.1 to 7.3
4.9 to 7.6 in	7.4 to 8.4

pH

540--Seelyeville muck

Seelyeville

Extent: 90 percent of the unit

Landform(s): bogs on lake plains, depressions on lake plains,
bogs on moraines, depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

organic materials *Kw (surface layer):* .02

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Representative soil profile:

Texture

Oa1 --	0 to 16 in	muck
Oa2,Oa3 --	16 to 60 in	muck

Permeability

moderately rapid
moderately rapid

Available water

capacity

5.6 to 7.3 in
15.3 to 19.7 in

pH

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

540--Seelyeville muck

543--Markey muck

Markey

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 2

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

Wind erodibility group (WEG): 2

Slope gradient: 0 to 1 percent

Wind erodibility index (WEI): 134

Parent material:

organic over glaciolacustrine *Kw (surface*

layer): .02

Restrictive feature(s):

Land capability class, nonirrigated: 6w

Flooding: none

Hydric soil: yes

Ponding: frequent

Hydrologic group: A/D

Drainage class: very poorly drained

Potential frost action: high

Representative soil profile:

Texture

Permeability

*Available water
capacity*

pH

Oa1,Oa2 -- 0 to 23 in muck
A,Cg1,Cg2 -- 23 to 60 in fine sand

moderately rapid 8.0 to 10.3 in
rapid 1.1 to 3.0 in

544--Cathro muck

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

544--Cathro muck

Cathro

Extent: 90 percent of the unit

Landform(s): bogs on lake plains, depressions on lake plains,
bogs on moraines, depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

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

organic over till *Kw (surface layer):* .02

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Representative soil profile:

Texture

Oa1 --	0 to 20 in	muck
Oa2 --	20 to 34 in	muck
A,Cg --	34 to 60 in	loam

Permeability

moderately rapid
moderately rapid
moderate

Available water capacity

9.0 to 11.0 in
4.8 to 6.2 in
2.9 to 5.7 in

pH

547--Deerwood muck

Deerwood

Extent: 90 percent of the unit

Landform(s): depressions on lake plains

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

organic and glaciolacustrine *Kw (surface*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: moderate

Representative soil profile:

Texture

Oa --	0 to 14 in	muck
A --	14 to 20 in	loamy sand
Cg1,Cg2 --	20 to 60 in	sand

Permeability

moderately rapid
rapid
rapid

Available water capacity

5.0 to 6.4 in
0.5 to 1.0 in
0.8 to 2.8 in

pH

5.6 to 7.8
6.1 to 8.4
7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

547--Deerwood muck

561--Bullwinkle muck

Bullwinkle

Extent: 90 percent of the unit

Landform(s): bogs on lake plains, depressions on lake plains,
bogs on moraines, depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 2

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

organic over glaciolacustrine *Kw (surface*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

Oa1 --	0 to 10 in	muck
Oa2 --	10 to 38 in	muck
A --	38 to 43 in	loam
Cg --	43 to 60 in	loam

Permeability

moderately rapid
moderately rapid
moderate
moderate

Available water capacity

3.4 to 4.7 in
9.9 to 13.6 in
0.7 to 0.9 in
1.9 to 3.0 in

pH

563--Northwood muck

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

563--Northwood muck

Northwood

Extent: 90 percent of the unit
Landform(s): depressions on lake plains
Slope gradient: 0 to 1 percent
Parent material:
layer): .02
Restrictive feature(s):
Flooding: none
Ponding: frequent
Drainage class: very poorly drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
 organic and glaciolacustrine *Kw (surface*

Land capability class, nonirrigated: 6w
Hydric soil: yes
Hydrologic group: B/D
Potential 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 12 in	muck	moderately rapid	4.1 to 5.3 in	5.1 to 7.8
A -- 12 to 16 in	fine sandy loam	rapid	0.4 to 0.7 in	5.6 to 7.8
Bg -- 16 to 24 in	fine sand	rapid	0.5 to 0.9 in	5.6 to 8.4
2BCkg1,2Cg2 24 to 60 in	loam	moderate	5.0 to 6.8 in	7.4 to 8.4
--				

564--Friendship loamy sand

Friendship

Extent: 90 percent of the unit
Landform(s): flats on outwash plains, rises on outwash plains
Slope gradient: 0 to 3 percent
Parent material:
Restrictive feature(s):
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
 outwash *Kw (surface layer):* .17
Land capability class, nonirrigated: 4s
Hydric soil: no
Hydrologic group: A
Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	loamy sand	rapid	0.3 to 0.5 in	4.5 to 7.3
Bw1 -- 4 to 22 in	sand	rapid	0.9 to 2.0 in	4.5 to 6.5
Bw2 -- 22 to 36 in	sand	rapid	0.7 to 1.1 in	4.5 to 7.3
C -- 36 to 60 in	sand	rapid	1.0 to 1.7 in	5.1 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

564--Friendship loamy sand

565--Eckvoll loamy fine sand

Eckvoll

Extent: 90 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material:

.17

Restrictive feature(s):

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

glaciolacustrine over till *Kw (surface layer):*

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

Ap --	0 to 8 in	loamy fine sand
E1,E2 --	8 to 30 in	fine sand
2Bt --	30 to 38 in	sandy clay loam
2Bck --	38 to 60 in	loam

Permeability

Available water

capacity

pH

rapid	0.8 to 0.9 in	6.1 to 7.3
rapid	1.3 to 1.8 in	6.1 to 7.3
moderate	1.3 to 1.5 in	6.6 to 7.8
moderate	3.7 to 4.1 in	7.4 to 8.4

582--Roliss loam

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

582--Roliss loam

Roliss

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 5

Landform(s): flats on lake plains, swales on lake plains, flats on
group (WEG): 4L
 moraines, swales on moraines

Wind erodibility

Slope gradient: 0 to 1 percent

Wind erodibility index (WEI): 86

Parent material:

till *Kw (surface layer):* .28

Restrictive feature(s):

Land capability class, nonirrigated: 2w

Flooding: none

Hydric soil: yes

Ponding: none

Hydrologic group: B/D

Drainage class: poorly drained

Potential frost action: high

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

Ap,A --	0 to 12 in	loam
Bg --	12 to 19 in	loam
BCkg1 --	19 to 31 in	loam
BCkg2 --	31 to 60 in	loam

moderate	2.0 to 2.8 in	6.6 to 7.8
moderate	1.1 to 1.3 in	7.4 to 8.4
moderate	1.8 to 2.3 in	7.4 to 8.4
moderate	4.3 to 5.5 in	7.4 to 8.4

607--Pengilly very fine sandy loam, frequently flooded

Pengilly, frequently flooded

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility group (WEG): 3

Slope gradient: 0 to 1 percent

Wind erodibility index (WEI): 86

Parent material:

alluvium *Kw (surface layer):* .24

Restrictive feature(s):

Land capability class, nonirrigated: 7w

Flooding: frequent

Hydric soil: yes

Ponding: none

Hydrologic group: B/D

Drainage class: poorly drained

Potential frost action: high

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	very fine sandy loam
Cg1..Cg5 --	3 to 60 in	stratified loamy very fine sand to silt loam

moderately rapid	0.4 to 0.7 in	5.6 to 7.8
moderate	6.8 to 11.3 in	6.1 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

627--Tawas muck

Tawas

Extent: 90 percent of the unit

Landform(s): bogs on lake plains, depressions on lake plains, bogs on outwash plains, depressions on outwash plains

Slope gradient: 0 to 1 percent

Parent material:
.02

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

organic over outwash *Kw (surface layer):*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Representative soil profile:

Texture

Oa1 --	0 to 10 in	muck
Oa2 --	10 to 30 in	muck
A,Cg --	30 to 60 in	sand

Permeability

moderately rapid
moderately rapid
rapid

Available water capacity

3.4 to 4.4 in
7.0 to 9.0 in
0.9 to 3.0 in

pH

650--Reiner fine sandy loam

Reiner

Extent: 90 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 1

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 7 in	fine sandy loam
B/E,Bt --	7 to 17 in	clay loam
BCK1,BCK2 --	17 to 60 in	loam

Permeability

moderately rapid
moderate
moderate

Available water capacity

1.1 to 1.3 in
1.5 to 1.9 in
6.0 to 8.2 in

pH

6.6 to 7.3
6.6 to 7.3
7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

650--Reiner fine sandy loam

672--Willosippi loam

Willosippi

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 5
moraines, swales on moraines

Slope gradient: 0 to 2 percent

Wind erodibility index (WEI): 56

Parent material:

glaciolacustrine deposits *Kw (surface*

layer): .32

Restrictive feature(s):

Land capability class, nonirrigated: 2w

Flooding: none

Hydric soil: yes

Ponding: none

Hydrologic group: B

Drainage class: poorly drained

Potential frost action: high

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 4 in	loam	moderate	0.8 to 0.9 in	5.1 to 7.3
Eg --	4 to 13 in	fine sandy loam	moderately rapid	1.4 to 2.0 in	5.1 to 7.3
Btg1,Btg2 --	13 to 28 in	stratified loamy sand to silty clay loam	moderately slow	2.2 to 2.8 in	5.6 to 7.8
BCkg1,BCkg2 --	28 to 60 in	stratified loamy sand to silty clay loam	moderately slow	3.8 to 6.1 in	6.6 to 8.4

709B--Lengby fine sandy loam, 2 to 8 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

709B--Lengby fine sandy loam, 2 to 8 percent slopes

Lengby

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 3

Slope gradient: 2 to 8 percent

Wind erodibility index (WEI): 86

Parent material:

glaciolacustrine deposits

Kw (surface

layer): .24

Restrictive feature(s):

Land capability class, nonirrigated: 2e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: moderate

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	fine sandy loam	moderately rapid	0.4 to 0.6 in	6.1 to 7.3
E --	3 to 11 in	loamy fine sand	rapid	0.6 to 0.9 in	5.6 to 7.3
B/E,Bt1,Bt2 --	11 to 26 in	sandy clay loam	moderate	2.2 to 2.8 in	6.1 to 7.3
BCK1..BCK3 --	26 to 48 in	stratified coarse sand to silt loam	moderately rapid	1.8 to 3.5 in	7.4 to 8.4
C --	48 to 60 in	stratified sand to loamy very fine sand	rapid	0.7 to 1.4 in	7.4 to 8.4

709C--Lengby fine sandy loam, 8 to 15 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

709C--Lengby fine sandy loam, 8 to 15 percent slopes

Lengby

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 3

Slope gradient: 8 to 15 percent

Wind erodibility index (WEI): 86

Parent material:

glaciolacustrine deposits

Kw (surface

layer): .24

Restrictive feature(s):

Land capability class, nonirrigated: 3e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: moderate

Representative soil profile:

Texture

Permeability

Available water capacity

pH

A --	0 to 3 in	fine sandy loam	moderately rapid	0.4 to 0.6 in	6.1 to 7.3
E --	3 to 15 in	loamy fine sand	rapid	0.9 to 1.4 in	5.6 to 7.3
B/E,Bt1,Bt2 --	15 to 29 in	sandy clay loam	moderate	2.1 to 2.7 in	6.1 to 7.3
BCK1..BCK3 --	29 to 42 in	stratified coarse sand to silt loam	moderately rapid	1.0 to 2.1 in	7.4 to 8.4
C --	42 to 60 in	stratified sand to loamy very fine sand	rapid	1.1 to 2.1 in	7.4 to 8.4

709E--Lengby fine sandy loam, 15 to 30 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

709E--Lengby fine sandy loam, 15 to 30 percent slopes

Lengby

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 3

Slope gradient: 15 to 30 percent

Wind erodibility index (WEI): 86

Parent material:

glaciolacustrine deposits

Kw (surface

layer): .24

Restrictive feature(s):

Land capability class, nonirrigated: 6e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: moderate

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	fine sandy loam	moderately rapid	0.4 to 0.6 in	6.1 to 7.3
E --	3 to 12 in	loamy fine sand	rapid	0.7 to 1.0 in	5.6 to 7.3
B/E,Bt1,Bt2 --	12 to 32 in	sandy clay loam	moderate	3.0 to 3.8 in	6.1 to 7.3
BCK1..BCK3 --	32 to 40 in	stratified coarse sand to silt loam	moderately rapid	0.7 to 1.3 in	7.4 to 8.4
C --	40 to 60 in	stratified sand to loamy very fine sand	rapid	1.2 to 2.4 in	7.4 to 8.4

712--Rosewood fine sandy loam

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

712--Rosewood fine sandy loam

Rosewood

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

layer): .24

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

glaciolacustrine deposits *Kw (surface*

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: moderate

Representative soil profile:

Texture

Ap --	0 to 8 in	fine sandy loam
Bkg --	8 to 17 in	fine sandy loam
Cg1,Cg2 --	17 to 60 in	sand

Available water

<i>Permeability</i>	<i>capacity</i>	<i>pH</i>
moderately rapid	1.0 to 1.4 in	7.4 to 8.4
moderately rapid	1.0 to 1.4 in	7.4 to 8.4
rapid	2.1 to 3.4 in	7.4 to 8.4

713--Linveldt fine sandy loam

Linveldt

Extent: 90 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material:

.28

Restrictive feature(s):

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

glaciolacustrine and till *Kw (surface layer):*

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: high

Representative soil profile:

Texture

Ap --	0 to 9 in	fine sandy loam
Bt1 --	9 to 16 in	sandy loam
Bw2 --	16 to 28 in	loamy sand
2Bck --	28 to 60 in	loam

Available water

<i>Permeability</i>	<i>capacity</i>	<i>pH</i>
moderately rapid	1.2 to 1.6 in	6.6 to 7.8
moderately rapid	0.9 to 1.3 in	6.6 to 7.8
rapid	0.7 to 1.3 in	7.4 to 8.4
moderate	4.5 to 6.1 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

718B--Naytahwaush loam, 2 to 8 percent slopes

Naytahwaush

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 8 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .28

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 3 in	loam
E --	3 to 9 in	fine sandy loam
Bt1,Bt2 --	9 to 25 in	clay
BCK1,BCK2 --	25 to 60 in	clay loam

Permeability

moderate
moderate
slow
moderately slow

Available water

capacity

0.6 to 0.8 in
0.9 to 1.4 in
1.6 to 3.1 in
4.9 to 6.6 in

pH

5.6 to 7.3
5.6 to 7.3
6.1 to 7.8
7.4 to 8.4

718C--Naytahwaush loam, 8 to 15 percent slopes

Naytahwaush

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 8 to 15 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .28

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 3 in	loam
E --	3 to 9 in	fine sandy loam
Bt1,Bt2 --	9 to 26 in	clay
BCK1,BCK2 --	26 to 60 in	clay loam

Permeability

moderate
moderate
slow
moderately slow

Available water

capacity

0.6 to 0.8 in
0.9 to 1.4 in
1.7 to 3.2 in
4.7 to 6.4 in

pH

5.6 to 7.3
5.6 to 7.3
6.1 to 7.8
7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

718C--Naytahwaush loam, 8 to 15 percent slopes

718E--Naytahwaush loam, 15 to 30 percent slopes

Naytahwaush

Extent: 90 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 15 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 6

Wind erodibility index (WEI): 48

till *Kw (surface layer):* .28

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 3 in	loam
E --	3 to 8 in	fine sandy loam
Bt1,Bt2 --	8 to 24 in	clay
BCK1,BCK2 --	24 to 60 in	clay loam

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
moderate	0.6 to 0.8 in	5.6 to 7.3
moderate	0.8 to 1.1 in	5.6 to 7.3
slow	1.6 to 3.1 in	6.1 to 7.8
moderately slow	5.0 to 6.8 in	7.4 to 8.4

733--Berner muck

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

733--Berner muck

Berner

Extent: 90 percent of the unit

Landform(s): bogs on lake plains, depressions on lake plains

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s):

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

organic over glaciolacustrine *Kw (surface*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Representative soil profile:

Texture

Oa1,Oa2 --	0 to 28 in	muck
A --	28 to 31 in	sandy loam
Bg --	31 to 44 in	sand
2BCkg --	44 to 60 in	loam

Permeability

moderately rapid
moderately rapid
rapid
moderate

Available water capacity

9.8 to 13.4 in
0.3 to 0.5 in
0.6 to 1.3 in
2.2 to 3.5 in

pH

737--Mahkonce loam

Mahkonce

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .32

Land capability class, nonirrigated: 2s

Hydric soil: no

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 4 in	loam
E --	4 to 9 in	fine sandy loam
Bt1,Bt2 --	9 to 26 in	clay
BCK1,BCK2 --	26 to 60 in	clay loam

Permeability

moderately slow
moderately slow
slow
moderately slow

Available water capacity

0.7 to 0.9 in
0.8 to 1.1 in
2.2 to 3.2 in
4.4 to 6.4 in

pH

5.6 to 7.3
5.6 to 7.3
6.1 to 7.3
7.4 to 8.4

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Clearwater 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]

737--Mahkonce loam

746--Haslie muck

Haslie

Extent: 90 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s):

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

organic over coprogenous earth *Kw (surface*

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

Representative soil profile:

Texture

Oa1 --	0 to 15 in	muck
Oa2 --	15 to 34 in	muck
Cg --	34 to 60 in	coprogenous earth

Permeability

moderately rapid
moderately rapid
slow

Available water

capacity

5.2 to 7.2 in
6.6 to 9.1 in
4.7 to 6.2 in

pH

765--Smiley loam

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

765--Smiley loam

Smiley

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 5

moraines, swales on moraines

Slope gradient: 0 to 2 percent

Wind erodibility index (WEI): 56

Parent material:

till *Kw (surface layer):* .24

Restrictive feature(s):

Land capability class, nonirrigated: 2w

Flooding: none

Hydric soil: yes

Ponding: none

Hydrologic group: B/D

Drainage class: poorly drained

Potential frost action: high

Representative soil profile:

Texture

Ap --	0 to 7 in	loam
Btg --	7 to 15 in	clay loam
BCKg1,BCKg2	15 to 60 in	loam
--		

Permeability

Available water

capacity

pH

moderate	1.4 to 1.7 in	6.6 to 7.8
moderate	1.2 to 1.5 in	6.6 to 8.4
moderate	6.3 to 8.5 in	7.4 to 8.4

767--Auganaush loam

Auganaush

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility group (WEG): 6

Slope gradient: 0 to 2 percent

Wind erodibility index (WEI): 48

Parent material:

till *Kw (surface layer):* .32

Restrictive feature(s):

Land capability class, nonirrigated: 4w

Flooding: none

Hydric soil: yes

Ponding: none

Hydrologic group: B/D

Drainage class: poorly drained

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 4 in	loam
E --	4 to 9 in	fine sandy loam
Btg1,Btg2 --	9 to 25 in	clay
Bkg1,Bkg2 --	25 to 60 in	clay loam

Permeability

Available water

capacity

pH

moderate	0.8 to 0.9 in	5.6 to 7.3
moderate	0.8 to 1.2 in	5.6 to 7.3
slow	1.6 to 3.1 in	5.6 to 7.3
moderately slow	4.9 to 6.6 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

767--Auganaush loam

775B--Sugarbush-Two Inlets complex, 1 to 8 percent slopes

Sugarbush

Extent: 55 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 3

Slope gradient: 1 to 8 percent

Wind erodibility index (WEI): 86

Parent material:

outwash *Kw (surface layer):* .20

Restrictive feature(s):

Land capability class, nonirrigated: 3s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: low

Representative soil profile:

Texture

A --	0 to 2 in	sandy loam
E --	2 to 14 in	loamy coarse sand
Bt --	14 to 26 in	coarse sandy loam
2BCK --	26 to 60 in	gravelly coarse sand

Permeability

Available water

capacity

pH

moderately rapid	0.3 to 0.3 in	5.6 to 7.3
rapid	1.1 to 1.3 in	5.6 to 7.3
moderately rapid	1.4 to 1.8 in	5.6 to 7.3
very rapid	0.7 to 2.0 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

775B--Sugarbush-Two Inlets complex, 1 to 8 percent slopes

Two Inlets

Extent: 35 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 1 to 8 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .10

Restrictive feature(s):

Land capability class, nonirrigated: 4s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: somewhat excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	5.6 to 7.3
E --	3 to 15 in	loamy coarse sand	rapid	1.1 to 1.3 in	5.6 to 7.3
E&Bt,Bt --	15 to 30 in	gravelly loamy coarse sand	rapid	1.3 to 1.6 in	6.1 to 7.3
Bck --	30 to 60 in	gravelly coarse sand	very rapid	0.6 to 1.2 in	7.4 to 8.4

775C--Sugarbush-Two Inlets complex, 8 to 15 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

775C--Sugarbush-Two Inlets complex, 8 to 15 percent slopes

Sugarbush

Extent: 50 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 3

Slope gradient: 8 to 15 percent

Wind erodibility index (WEI): 86

Parent material:

outwash *Kw (surface layer):* .20

Restrictive feature(s):

Land capability class, nonirrigated: 4e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 2 in	sandy loam	moderately rapid	0.3 to 0.3 in	5.6 to 7.3
E --	2 to 14 in	loamy coarse sand	rapid	1.1 to 1.3 in	5.6 to 7.3
Bt --	14 to 27 in	coarse sandy loam	moderately rapid	1.6 to 1.9 in	5.6 to 7.3
2Bck --	27 to 60 in	gravelly coarse sand	very rapid	0.7 to 2.0 in	7.4 to 8.4

Two Inlets

Extent: 40 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 8 to 15 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .10

Restrictive feature(s):

Land capability class, nonirrigated: 4s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: somewhat excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	5.6 to 7.3
E --	3 to 12 in	loamy coarse sand	rapid	0.8 to 1.0 in	5.6 to 7.3
E&Bt, Bt --	12 to 32 in	gravelly loamy coarse sand	rapid	1.8 to 2.2 in	6.1 to 7.3
Bck --	32 to 60 in	gravelly coarse sand	very rapid	0.6 to 1.1 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

776B--Snellman-Sugarbush complex, 2 to 8 percent slopes

Snellman

Extent: 60 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 8 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 2e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 4 in	sandy loam	moderately rapid	0.5 to 0.7 in	5.1 to 6.5
E -- 4 to 17 in	loamy sand	moderate	1.2 to 1.8 in	5.1 to 6.5
B/E,Bt1,Bt2 -- 17 to 38 in	sandy clay loam	moderate	2.6 to 3.8 in	5.6 to 7.3
BCK -- 38 to 60 in	fine sandy loam	moderate	2.4 to 3.5 in	7.4 to 8.4

Sugarbush

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 8 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 3s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 3 in	sandy loam	moderately rapid	0.4 to 0.5 in	5.6 to 7.3
E -- 3 to 12 in	loamy coarse sand	rapid	0.8 to 1.0 in	5.6 to 7.3
Bt -- 12 to 25 in	coarse sandy loam	moderately rapid	1.6 to 2.0 in	5.6 to 7.3
2BCK -- 25 to 60 in	gravelly coarse sand	very rapid	0.7 to 2.1 in	7.4 to 8.4

776C--Snellman-Sugarbush complex, 8 to 15 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

776C--Snellman-Sugarbush complex, 8 to 15 percent slopes

Snellman

Extent: 60 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 8 to 15 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 3e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	sandy loam	moderately rapid	0.5 to 0.7 in	5.1 to 6.5
E -- 4 to 12 in	loamy sand	moderate	0.7 to 1.1 in	5.1 to 6.5
B/E,Bt1,Bt2 -- 12 to 32 in	sandy clay loam	moderate	2.4 to 3.6 in	5.6 to 7.3
BCK -- 32 to 60 in	fine sandy loam	moderate	3.1 to 4.5 in	7.4 to 8.4

Sugarbush

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 8 to 15 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 4e

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 4 in	sandy loam	moderately rapid	0.5 to 0.6 in	5.6 to 7.3
E -- 4 to 17 in	loamy coarse sand	rapid	1.2 to 1.4 in	5.6 to 7.3
Bt -- 17 to 30 in	coarse sandy loam	moderately rapid	1.6 to 1.9 in	5.6 to 7.3
2BCK -- 30 to 60 in	gravelly coarse sand	very rapid	0.6 to 1.8 in	7.4 to 8.4

776E--Snellman-Sugarbush complex, 15 to 30 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

776E--Snellman-Sugarbush complex, 15 to 30 percent slopes

Snellman

Extent: 55 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 15 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	sandy loam	moderately rapid	0.4 to 0.6 in	5.1 to 6.5
E -- 3 to 16 in	loamy sand	moderate	1.2 to 1.8 in	5.1 to 6.5
B/E,Bt1,Bt2 -- 16 to 34 in	sandy clay loam	moderate	2.1 to 3.2 in	5.6 to 7.3
BCK -- 34 to 60 in	fine sandy loam	moderate	2.9 to 4.2 in	7.4 to 8.4

Sugarbush

Extent: 35 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 15 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderately rapid	0.3 to 0.3 in	5.6 to 7.3
E -- 2 to 16 in	loamy coarse sand	rapid	1.3 to 1.6 in	5.6 to 7.3
Bt -- 16 to 29 in	coarse sandy loam	moderately rapid	1.6 to 1.9 in	5.6 to 7.3
2BCK -- 29 to 60 in	gravelly coarse sand	very rapid	0.6 to 1.8 in	7.4 to 8.4

776F--Snellman-Sugarbush complex, 30 to 45 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

776F--Snellman-Sugarbush complex, 30 to 45 percent slopes

Snellman

Extent: 50 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 30 to 45 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 7e

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderately rapid	0.3 to 0.4 in	5.1 to 6.5
E -- 2 to 12 in	loamy sand	moderate	0.9 to 1.4 in	5.1 to 6.5
B/E,Bt1,Bt2 -- 12 to 28 in	sandy clay loam	moderate	1.9 to 2.9 in	5.6 to 7.3
BCK -- 28 to 60 in	fine sandy loam	moderate	3.5 to 5.1 in	7.4 to 8.4

Sugarbush

Extent: 40 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 30 to 45 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 6e

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderately rapid	0.3 to 0.3 in	5.6 to 7.3
E -- 2 to 14 in	loamy coarse sand	rapid	1.1 to 1.3 in	5.6 to 7.3
Bt -- 14 to 26 in	coarse sandy loam	moderately rapid	1.4 to 1.8 in	5.6 to 7.3
2BCK -- 26 to 60 in	gravelly coarse sand	very rapid	0.7 to 2.0 in	7.4 to 8.4

797--Mooselake and Lupton soils

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

797--Mooselake and Lupton soils

Mooselake

Extent: 45 percent of the unit

Landform(s): bogs on lake plains, depressions on lake plains,
bogs on moraines, depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

organic *Kw (surface layer):* .02

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Representative soil profile:

Texture

	Oa --	0 to 15 in	muck
	Oe1,Oe2 --	15 to 60 in	mucky peat

Permeability

	moderately rapid
	moderately rapid

Available water capacity

	5.2 to 8.2 in
	18.0 to 22.4 in

pH

Lupton

Extent: 45 percent of the unit

Landform(s): bogs on lake plains, depressions on lake plains,
bogs on moraines, depressions on moraines

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

organic *Kw (surface layer):* .02

Land capability class, nonirrigated: 7w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Representative soil profile:

Texture

	Oa1 --	0 to 14 in	muck
	Oa2,Oa3 --	14 to 60 in	muck

Permeability

	moderately rapid
	moderately rapid

Available water capacity

	5.0 to 6.4 in
	16.0 to 20.6 in

pH

799--Seelyeville and Bowstring soils, frequently flooded

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

799--Seelyeville and Bowstring soils, frequently flooded

Seelyeville, frequently flooded

Extent: 45 percent of the unit

Landform(s): depressions on flood plains

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

organic *Kw (surface layer):* .02

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Representative soil profile:

Texture

Oa1 -- 0 to 10 in muck
Oa2,Oa3 -- 10 to 60 in muck

Permeability

moderately rapid
moderately rapid

Available water capacity

3.4 to 4.4 in
17.5 to 22.5 in

pH

Bowstring, frequently flooded

Extent: 45 percent of the unit

Landform(s): depressions on flood plains

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

organic and alluvium *Kw (surface layer):* .02

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: high

Representative soil profile:

Texture

Oa -- 0 to 32 in muck
C -- 32 to 36 in stratified sand to fine sandy loam
O'a -- 36 to 60 in muck

Permeability

moderately rapid
rapid
moderately rapid

Available water capacity

11.2 to 14.4 in
0.3 to 0.6 in
8.4 to 10.8 in

pH

867B--Graycalm-Menahga complex, 1 to 8 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

867B--Graycalm-Menahga complex, 1 to 8 percent slopes

Graycalm

Extent: 60 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 1 to 8 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .15

Restrictive feature(s):

Land capability class, nonirrigated: 4s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: somewhat excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand
Bw --	3 to 32 in	sand
E,E&Bt --	32 to 42 in	sand
C --	42 to 60 in	sand

rapid	0.2 to 0.4 in	4.5 to 6.5
rapid	1.4 to 2.9 in	4.5 to 7.3
rapid	0.4 to 0.9 in	4.5 to 7.3
rapid	0.7 to 1.1 in	5.6 to 8.4

Menahga

Extent: 30 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 1 to 8 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .15

Restrictive feature(s):

Land capability class, nonirrigated: 4s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand
Bw --	3 to 24 in	sand
C1,C2 --	24 to 60 in	sand

rapid	0.3 to 0.4 in	4.5 to 6.5
rapid	1.0 to 1.5 in	4.5 to 6.5
rapid	1.8 to 2.5 in	5.6 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

867C--Graycalm-Menahga complex, 8 to 15 percent slopes

Graycalm

Extent: 60 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 8 to 15 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .15

Restrictive feature(s):

Land capability class, nonirrigated: 6s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: somewhat excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.2 to 0.4 in	4.5 to 6.5
Bw --	3 to 28 in	sand	rapid	1.2 to 2.5 in	4.5 to 7.3
E,E&Bt --	28 to 55 in	sand	rapid	1.1 to 2.4 in	4.5 to 7.3
C --	55 to 60 in	sand	rapid	0.2 to 0.3 in	5.6 to 8.4

Menahga

Extent: 30 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 8 to 15 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .15

Restrictive feature(s):

Land capability class, nonirrigated: 4s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	4.5 to 6.5
Bw --	3 to 28 in	sand	rapid	1.2 to 1.7 in	4.5 to 6.5
C1,C2 --	28 to 60 in	sand	rapid	1.6 to 2.2 in	5.6 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

867E--Graycalm-Menahga complex, 15 to 30 percent slopes

Graycalm

Extent: 60 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 15 to 30 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .15

Restrictive feature(s):

Land capability class, nonirrigated: 7s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: somewhat excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.2 to 0.4 in	4.5 to 6.5
Bw --	3 to 26 in	sand	rapid	1.1 to 2.3 in	4.5 to 7.3
E,E&Bt --	26 to 42 in	sand	rapid	0.6 to 1.5 in	4.5 to 7.3
C --	42 to 60 in	sand	rapid	0.7 to 1.1 in	5.6 to 8.4

Menahga

Extent: 30 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 15 to 30 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .15

Restrictive feature(s):

Land capability class, nonirrigated: 7s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	4.5 to 6.5
Bw --	3 to 30 in	sand	rapid	1.3 to 1.9 in	4.5 to 6.5
C1,C2 --	30 to 60 in	sand	rapid	1.5 to 2.1 in	5.6 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1030--Pits, gravel-Udipsamments complex

Pits, gravel

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

Soil loss tolerance (T factor):
Wind erodibility group (WEG):
Wind erodibility index (WEI):
 outwash *Kw (surface layer):*
Land capability class, nonirrigated:
Hydric soil: unranked
Hydrologic group:
Potential 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: 30 percent of the unit
Landform(s): outwash plains
Slope gradient: 1 to 50 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: excessively drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 2
Wind erodibility index (WEI): 134
 outwash *Kw (surface layer):* .15
Land capability class, nonirrigated: 8s
Hydric soil: unranked
Hydrologic group: A
Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
C1 -- 0 to 14 in	sand	rapid	0.7 to 1.4 in	6.6 to 7.3
C2 -- 14 to 60 in	sand	rapid	2.3 to 3.7 in	6.6 to 7.3
C3 -- 60 to 80 in	coarse sand	very rapid	0.6 to 1.0 in	7.4 to 8.4

1113--Haslie, Seelyeville, and Cathro soils, ponded

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1113--Haslie, Seelyeville, and Cathro soils, ponded

Haslie, ponded

Extent: 30 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

layer): .02

Restrictive feature(s):

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

organic over coprogenous earth *Kw (surface*

Land capability class, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

Oa1 --	0 to 10 in	muck
Oa2 --	10 to 28 in	muck
Cg --	28 to 60 in	coprogenous earth

Permeability

Available water capacity

pH

moderately rapid	3.4 to 4.7 in	
moderately rapid	6.3 to 8.7 in	
slow	5.7 to 7.7 in	

Seelyeville, ponded

Extent: 30 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

organic *Kw (surface layer):* .02

Land capability class, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

Oa1 --	0 to 15 in	muck
Oa2,Oa3 --	15 to 60 in	muck

Permeability

Available water capacity

pH

moderately rapid	5.2 to 6.7 in	
moderately rapid	15.7 to 20.2 in	

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1113--Haslie, Seelyeville, and Cathro soils, ponded

Cathro, ponded

Extent: 30 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

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

organic and till *Kw (surface layer):* .02

Land capability class, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: D

Potential 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 12 in	muck	moderately rapid	5.3 to 6.5 in	
Oa2 -- 12 to 30 in	muck	moderately rapid	6.3 to 8.1 in	
A,Cg -- 30 to 60 in	clay loam	moderate	3.3 to 6.6 in	

1147--Fordum, Fairdale, and Lamoure soils, frequently flooded

Fordum, frequently flooded

Extent: 30 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: frequent

Drainage class: poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

alluvium *Kw (surface layer):* .28

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: D

Potential 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 6 in	silt loam	moderate	1.0 to 1.4 in	4.5 to 8.4
Cg1..Cg3 -- 6 to 30 in	very fine sandy loam	moderately rapid	2.4 to 5.3 in	4.5 to 8.4
Cg4..Cg6 -- 30 to 60 in	sand	rapid	1.2 to 3.0 in	5.6 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1147--Fordum, Fairdale, and Lamoure soils, frequently flooded

Fairdale, frequently flooded

Extent: 30 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: none

Drainage class: moderately well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

alluvium *Kw (surface layer):* .24

Land capability class, nonirrigated: 6w

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 8 in	silt loam
C1..C6 --	8 to 60 in	stratified very fine sandy loam to silty clay loam

Permeability

moderate
moderate

Available water

capacity *pH*

1.6 to 1.9 in	7.4 to 7.8
8.8 to 12.0 in	7.4 to 8.4

Lamoure, frequently flooded

Extent: 30 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 4L

Wind erodibility index (WEI): 86

alluvium *Kw (surface layer):* .28

Land capability class, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: C

Potential frost action: high

Representative soil profile:

Texture

Ap,A --	0 to 24 in	silt loam
Cg1 --	24 to 38 in	silty clay loam
Cg2,Cg3 --	38 to 50 in	loam
Cg4 --	50 to 60 in	stratified sandy loam to silty clay loam

Permeability

moderate
moderate
moderate
moderate

Available water

capacity *pH*

4.6 to 5.3 in	7.4 to 8.4
2.4 to 2.8 in	7.4 to 8.4
2.0 to 2.4 in	7.4 to 8.4
0.9 to 1.8 in	7.4 to 8.4

1152B--Sugarbush loamy sand, 1 to 8 percent slopes

This report shows only the major soils in each map unit

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Map Unit Description (MN)

Clearwater 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]

1152B--Sugarbush loamy sand, 1 to 8 percent slopes

Sugarbush

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 2

Slope gradient: 1 to 8 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .17

Restrictive feature(s):

Land capability class, nonirrigated: 3s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	5.6 to 7.3
E --	3 to 14 in	loamy sand	rapid	1.0 to 1.2 in	5.6 to 7.3
Bt --	14 to 22 in	coarse sandy loam	moderately rapid	0.9 to 1.2 in	5.6 to 7.3
2BCK --	22 to 60 in	gravelly sand	very rapid	0.8 to 2.3 in	5.6 to 8.4

1152C--Sugarbush loamy sand, 8 to 15 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1152C--Sugarbush loamy sand, 8 to 15 percent slopes

Sugarbush

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 2

Slope gradient: 8 to 15 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .17

Restrictive feature(s):

Land capability class, nonirrigated: 4e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	5.6 to 7.3
E --	3 to 12 in	loamy sand	rapid	0.8 to 1.0 in	5.6 to 7.3
Bt --	12 to 18 in	coarse sandy loam	moderately rapid	0.8 to 0.9 in	5.6 to 7.3
2BcK --	18 to 60 in	gravelly sand	very rapid	0.8 to 2.5 in	5.6 to 8.4

1152E--Sugarbush loamy sand, 15 to 30 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1152E--Sugarbush loamy sand, 15 to 30 percent slopes

Sugarbush

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 2

Slope gradient: 15 to 30 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .17

Restrictive feature(s):

Land capability class, nonirrigated: 6e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: low

Representative soil profile:

Texture

A --	0 to 3 in	loamy sand
E --	3 to 9 in	loamy sand
Bt --	9 to 20 in	coarse sandy loam
2BCK --	20 to 60 in	gravelly sand

Permeability

rapid
rapid
moderately rapid
very rapid

Available water

capacity

0.3 to 0.4 in
0.5 to 0.6 in
1.3 to 1.7 in
0.8 to 2.4 in

pH

5.6 to 7.3
5.6 to 7.3
5.6 to 7.3
5.6 to 8.4

1164--Zerkel loam

Zerkel

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility group (WEG): 5

Slope gradient: 1 to 3 percent

Wind erodibility index (WEI): 56

Parent material:

glaciolacustrine deposits

Kw (surface

layer): .32

Restrictive feature(s):

Land capability class, nonirrigated: 1

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: moderately well drained

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 4 in	loam
E --	4 to 10 in	very fine sandy loam
B/E,Bt1,Bt2 --	10 to 29 in	loam
BCK,C --	29 to 60 in	stratified fine sand to silt loam

Permeability

moderate
rapid
moderate
moderately rapid

Available water

capacity

0.8 to 0.9 in
0.6 to 1.3 in
2.9 to 3.7 in
1.5 to 6.8 in

pH

5.6 to 7.3
5.6 to 7.3
5.6 to 7.3
7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1164--Zerkel loam

1166B--Moosecreek fine sandy loam, 2 to 8 percent slopes

Moosecreek

Extent: 90 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 3

Slope gradient: 2 to 8 percent

Wind erodibility index (WEI): 86

Parent material:

glaciolacustrine deposits

Kw (surface

layer): .24

Restrictive feature(s):

Land capability class, nonirrigated: 2e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: moderate

Representative soil profile:

Texture

Ap --	0 to 6 in	fine sandy loam
E --	6 to 9 in	fine sandy loam
Bt1,Bt2 --	9 to 21 in	loam
2Bk --	21 to 60 in	gravelly coarse sand

Available water

<i>Permeability</i>	<i>capacity</i>	<i>pH</i>
moderately rapid	0.8 to 1.3 in	6.1 to 7.3
moderately rapid	0.3 to 0.4 in	5.6 to 7.3
moderate	1.8 to 2.2 in	6.1 to 7.3
rapid	0.8 to 2.7 in	7.4 to 8.4

1191--Sahkahtay sandy loam

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1191--Sahkahtay sandy loam

Sahkahtay

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

beach deposits Kw (surface layer): .20

Land capability class, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 4 in	sandy loam	moderately rapid	0.4 to 0.6 in	5.6 to 7.3
E -- 4 to 14 in	sand	rapid	0.5 to 0.8 in	5.6 to 7.3
Btg1,Btg2 -- 14 to 23 in	gravelly sandy clay loam	moderate	1.1 to 1.5 in	6.1 to 7.3
2BCkg -- 23 to 60 in	gravelly coarse sand	very rapid	1.1 to 2.2 in	7.4 to 8.4

1200--Egglake loam

Egglake

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 5

Wind erodibility index (WEI): 56

till Kw (surface layer): .28

Land capability class, nonirrigated: 2w

Hydric soil: yes

Hydrologic group: B/D

Potential frost action: high

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 4 in	loam	moderately rapid	0.4 to 0.8 in	5.6 to 7.3
E -- 4 to 14 in	fine sandy loam	moderately rapid	1.2 to 1.4 in	5.6 to 7.3
B/E..Btg2 -- 14 to 34 in	loam	moderate	3.1 to 3.5 in	5.6 to 7.3
BCkg -- 34 to 60 in	fine sandy loam	moderate	2.9 to 3.4 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1200--Egglake loam

1238E--Two Inlets-Sugarbush complex, 15 to 30 percent slopes

Two Inlets

Extent: 55 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 15 to 30 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .10

Restrictive feature(s):

Land capability class, nonirrigated: 6s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: somewhat excessively drained

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	5.6 to 7.3
E -- 3 to 13 in	loamy coarse sand	rapid	0.9 to 1.1 in	5.6 to 7.3
E&Bt,Bt -- 13 to 25 in	gravelly loamy coarse sand	rapid	1.1 to 1.3 in	6.1 to 7.3
BcK -- 25 to 60 in	gravelly coarse sand	very rapid	0.7 to 1.4 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1238E--Two Inlets-Sugarbush complex, 15 to 30 percent slopes

Sugarbush

Extent: 35 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 3

Slope gradient: 15 to 30 percent

Wind erodibility index (WEI): 86

Parent material:

outwash *Kw (surface layer):* .20

Restrictive feature(s):

Land capability class, nonirrigated: 6e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	sandy loam	moderately rapid	0.4 to 0.5 in	5.6 to 7.3
E --	3 to 15 in	loamy coarse sand	rapid	1.1 to 1.3 in	5.6 to 7.3
Bt --	15 to 28 in	coarse sandy loam	moderately rapid	1.6 to 1.9 in	5.6 to 7.3
2BCK --	28 to 60 in	gravelly coarse sand	very rapid	0.6 to 1.9 in	5.6 to 8.4

1238F--Two Inlets-Sugarbush complex, 30 to 45 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1238F--Two Inlets-Sugarbush complex, 30 to 45 percent slopes

Two Inlets

Extent: 55 percent of the unit

Soil loss tolerance (T factor): 5

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

Wind erodibility

group (WEG): 2

Slope gradient: 30 to 45 percent

Wind erodibility index (WEI): 134

Parent material:

outwash *Kw (surface layer):* .10

Restrictive feature(s):

Land capability class, nonirrigated: 7s

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: A

Drainage class: somewhat excessively drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 3 in	loamy sand	rapid	0.3 to 0.4 in	5.6 to 7.3
E --	3 to 11 in	loamy coarse sand	rapid	0.7 to 0.9 in	5.6 to 7.3
E&Bt,Bt --	11 to 25 in	gravelly loamy coarse sand	rapid	1.3 to 1.6 in	6.1 to 7.3
BCK --	25 to 60 in	gravelly coarse sand	very rapid	0.7 to 1.4 in	7.4 to 8.4

Sugarbush

Extent: 35 percent of the unit

Soil loss tolerance (T factor): 4

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

Wind erodibility

group (WEG): 3

Slope gradient: 30 to 45 percent

Wind erodibility index (WEI): 86

Parent material:

outwash *Kw (surface layer):* .20

Restrictive feature(s):

Land capability class, nonirrigated: 6e

Flooding: none

Hydric soil: no

Ponding: none

Hydrologic group: B

Drainage class: well drained

Potential frost action: low

Representative soil profile:

Texture

Permeability

Available water

capacity

pH

A --	0 to 2 in	sandy loam	moderately rapid	0.3 to 0.3 in	5.6 to 7.3
E --	2 to 14 in	loamy coarse sand	rapid	1.1 to 1.3 in	5.6 to 7.3
Bt --	14 to 29 in	coarse sandy loam	moderately rapid	1.8 to 2.2 in	5.6 to 7.3
2BCK --	29 to 60 in	gravelly coarse sand	very rapid	0.6 to 1.8 in	5.6 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1244B--Sol-Sugarbush complex, 2 to 8 percent slopes, very stony

Sol, very stony

Extent: 65 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 8 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 4 in	sandy loam	moderate	0.5 to 0.8 in	5.1 to 6.0
E -- 4 to 17 in	loamy sand	moderately rapid	1.2 to 1.7 in	5.1 to 6.0
B/E,Bt -- 17 to 43 in	sandy clay loam	moderate	4.2 to 5.2 in	5.6 to 6.5
BCK -- 43 to 60 in	fine sandy loam	moderate	1.9 to 2.7 in	7.4 to 7.8

Sugarbush, very stony

Extent: 25 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 2 to 8 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 3 in	sandy loam	moderately rapid	0.4 to 0.5 in	5.6 to 7.3
E -- 3 to 12 in	loamy coarse sand	rapid	0.8 to 1.0 in	5.6 to 7.3
Bt -- 12 to 25 in	coarse sandy loam	moderately rapid	1.6 to 2.0 in	5.6 to 7.3
2BCK -- 25 to 60 in	gravelly sand	very rapid	0.7 to 2.1 in	5.6 to 8.4

1244C--Sol-Sugarbush complex, 8 to 15 percent slopes, very stony

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1244C--Sol-Sugarbush complex, 8 to 15 percent slopes, very stony

Sol, very stony

Extent: 60 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 8 to 15 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderate	0.2 to 0.4 in	5.1 to 6.0
E -- 2 to 16 in	loamy sand	moderately rapid	1.3 to 1.8 in	5.1 to 6.0
B/E,Bt -- 16 to 38 in	sandy clay loam	moderate	3.5 to 4.4 in	5.6 to 6.5
BCK -- 38 to 60 in	fine sandy loam	moderate	2.4 to 3.5 in	7.4 to 7.8

Sugarbush, very stony

Extent: 30 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 8 to 15 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderately rapid	0.3 to 0.3 in	5.6 to 7.3
E -- 2 to 18 in	loamy coarse sand	rapid	1.5 to 1.8 in	5.6 to 7.3
Bt -- 18 to 26 in	coarse sandy loam	moderately rapid	0.9 to 1.2 in	5.6 to 7.3
2BCK -- 26 to 60 in	gravelly sand	very rapid	0.7 to 2.0 in	5.6 to 8.4

1244E--Sol-Sugarbush complex, 15 to 30 percent slopes, very stony

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1244E--Sol-Sugarbush complex, 15 to 30 percent slopes, very stony

Sol, very stony

Extent: 55 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 15 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderate	0.2 to 0.4 in	5.1 to 6.0
E -- 2 to 19 in	loamy sand	moderately rapid	1.5 to 2.2 in	5.1 to 6.0
B/E,Bt -- 19 to 42 in	sandy clay loam	moderate	3.7 to 4.6 in	5.6 to 6.5
BCK -- 42 to 60 in	fine sandy loam	moderate	1.9 to 2.8 in	7.4 to 7.8

Sugarbush, very stony

Extent: 35 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 15 to 30 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 6s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderately rapid	0.3 to 0.3 in	5.6 to 7.3
E -- 2 to 17 in	loamy coarse sand	rapid	1.3 to 1.6 in	5.6 to 7.3
Bt -- 17 to 25 in	coarse sandy loam	moderately rapid	1.0 to 1.2 in	5.6 to 7.3
2BCK -- 25 to 60 in	gravelly sand	very rapid	0.7 to 2.1 in	5.6 to 8.4

1244F--Sol-Sugarbush complex, 30 to 45 percent slopes, very stony

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1244F--Sol-Sugarbush complex, 30 to 45 percent slopes, very stony

Sol, very stony

Extent: 55 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 30 to 45 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

till *Kw (surface layer):* .24

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderate	0.2 to 0.4 in	5.1 to 6.0
E -- 2 to 18 in	loamy sand	moderately rapid	1.5 to 2.1 in	5.1 to 6.0
B/E,Bt -- 18 to 46 in	sandy clay loam	moderate	4.5 to 5.6 in	5.6 to 6.5
BCK -- 46 to 60 in	fine sandy loam	moderate	1.5 to 2.2 in	7.4 to 7.8

Sugarbush, very stony

Extent: 35 percent of the unit

Landform(s): hillslopes on moraines

Slope gradient: 30 to 45 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: well drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 3

Wind erodibility index (WEI): 86

outwash *Kw (surface layer):* .20

Land capability class, nonirrigated: 7s

Hydric soil: no

Hydrologic group: B

Potential frost action: low

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water</i>	
			<i>capacity</i>	<i>pH</i>
A -- 0 to 2 in	sandy loam	moderately rapid	0.3 to 0.3 in	5.6 to 7.3
E -- 2 to 16 in	loamy coarse sand	rapid	1.3 to 1.6 in	5.6 to 7.3
Bt -- 16 to 24 in	coarse sandy loam	moderately rapid	0.9 to 1.2 in	5.6 to 7.3
2BCK -- 24 to 60 in	gravelly sand	very rapid	0.7 to 2.1 in	5.6 to 8.4

1272B--Sol fine sandy loam, 2 to 6 percent slopes

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1272B--Sol fine sandy loam, 2 to 6 percent slopes

Sol

Extent: 90 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 2 to 6 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

Soil loss tolerance (T factor): 5
Wind erodibility group (WEG): 3
Wind erodibility index (WEI): 86
 till *Kw (surface layer):* .24
Land capability class, nonirrigated: 2e
Hydric soil: no
Hydrologic group: B
Potential frost action: moderate

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.4 to 0.6 in	5.1 to 6.0
E -- 3 to 14 in	fine sandy loam	moderately rapid	1.0 to 1.4 in	5.1 to 6.0
B/E,Bt -- 14 to 38 in	sandy clay loam	moderate	3.8 to 4.8 in	5.6 to 6.5
BCK -- 38 to 60 in	fine sandy loam	moderate	2.4 to 3.5 in	7.4 to 7.8

1272C--Sol fine sandy loam, 6 to 12 percent slopes

Sol

Extent: 90 percent of the unit
Landform(s): hillslopes on moraines
Slope gradient: 6 to 12 percent
Parent material:
Restrictive feature(s):
Flooding: none
Ponding: none
Drainage class: well drained

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

<i>Representative soil profile:</i>	<i>Texture</i>	<i>Permeability</i>	<i>Available water capacity</i>	<i>pH</i>
A -- 0 to 3 in	fine sandy loam	moderate	0.4 to 0.6 in	5.1 to 6.0
E -- 3 to 14 in	fine sandy loam	moderately rapid	1.0 to 1.4 in	5.1 to 6.0
B/E,Bt -- 14 to 40 in	sandy clay loam	moderate	4.2 to 5.2 in	5.6 to 6.5
BCK -- 40 to 60 in	fine sandy loam	moderate	2.2 to 3.1 in	7.4 to 7.8

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1272C--Sol fine sandy loam, 6 to 12 percent slopes

1294--Nary fine sandy loam

Nary

Extent: 90 percent of the unit

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

Slope gradient: 1 to 3 percent

Parent material:

Restrictive feature(s):

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

till *Kw (surface layer):* .20

Land capability class, nonirrigated: 2s

Hydric soil: no

Hydrologic group: B

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 3 in	fine sandy loam
E --	3 to 15 in	loamy fine sand
B/E,Bt --	15 to 36 in	sandy clay loam
B/Ck --	36 to 60 in	sandy loam

Permeability

moderate
moderately rapid
moderately slow
moderate

Available water

capacity

0.4 to 0.6 in
1.1 to 1.5 in
3.3 to 4.2 in
2.6 to 3.8 in

pH

5.1 to 6.0
5.1 to 6.0
5.6 to 6.5
7.4 to 7.8

1325--Bowstring-Fluvaquents complex, frequently flooded

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1325--Bowstring-Fluvaquents complex, frequently flooded

Bowstring, frequently flooded

Extent: 45 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 3

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

organic and alluvium *Kw (surface layer):* .02

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

Oa --	0 to 19 in	muck
C --	19 to 31 in	stratified sand to fine sandy loam
O'a --	31 to 60 in	muck

Permeability

Available water capacity

pH

moderately rapid	6.6 to 8.5 in	
rapid	1.0 to 1.7 in	
moderately rapid	10.1 to 12.9 in	

Fluvaquents, frequently flooded

Extent: 45 percent of the unit

Landform(s): flats on flood plains

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: frequent

Ponding: frequent

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

alluvium *Kw (surface layer):* .20

Land capability class, nonirrigated: 6w

Hydric soil: yes

Hydrologic group: D

Potential frost action: high

Representative soil profile:

Texture

A --	0 to 8 in	fine sandy loam
C --	8 to 60 in	stratified loamy sand to silt

Permeability

Available water capacity

pH

moderately rapid	0.9 to 1.4 in	4.5 to 8.4
rapid	2.1 to 5.2 in	5.6 to 8.4

1356--Water, miscellaneous

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1356--Water, miscellaneous

Water, miscellaneous

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw (surface layer):

Land capability class, nonirrigated:

Hydric soil:

Hydrologic group:

Potential 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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1808--Markey muck, ponded

Markey, ponded

Extent: 90 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

.02

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 4

Wind erodibility group (WEG): 8

Wind erodibility index (WEI): 0

organic over outwash *Kw (surface layer):*

Land capability class, nonirrigated: 8w

Hydric soil: yes

Hydrologic group: D

Potential 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 28 in muck	moderately rapid	9.8 to 12.6 in	
A,Cg1,Cg2 --	28 to 60 in fine sand	rapid	1.0 to 2.6 in	

1874--Radium loamy sand

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1874--Radium loamy sand

Radium

Extent: 90 percent of the unit

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

Slope gradient: 0 to 3 percent

Parent material:

Restrictive feature(s):

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

beach deposits *Kw (surface layer):* .17

Land capability class, nonirrigated: 4s

Hydric soil: no

Hydrologic group: A

Potential frost action: low

Representative soil profile:

Texture

Ap --	0 to 11 in	loamy sand
Bw --	11 to 16 in	loamy sand
Bck1, Bck2 --	16 to 60 in	sand

Permeability

Available water

capacity

pH

rapid	0.7 to 1.3 in	6.1 to 7.8
rapid	0.2 to 0.4 in	6.6 to 8.4
rapid	0.9 to 2.2 in	7.4 to 8.4

1878--Hamre muck

Hamre

Extent: 90 percent of the unit

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

Slope gradient: 0 to 1 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: frequent

Drainage class: very poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

organic over till *Kw (surface layer):* .02

Land capability class, nonirrigated: 3w

Hydric soil: yes

Hydrologic group: C/D

Potential frost action: high

Representative soil profile:

Texture

Oa --	0 to 10 in	muck
A --	10 to 14 in	loam
BCKg --	14 to 60 in	loam

Permeability

Available water

capacity

pH

moderate	3.4 to 4.7 in	5.1 to 7.8
moderate	0.7 to 0.8 in	5.1 to 7.8
moderate	7.8 to 8.7 in	7.4 to 8.4

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

1943--Roscommon loamy sand

Roscommon

Extent: 90 percent of the unit

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

Slope gradient: 0 to 2 percent

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class: poorly drained

Soil loss tolerance (T factor): 5

Wind erodibility group (WEG): 2

Wind erodibility index (WEI): 134

outwash *Kw (surface layer):* .17

Land capability class, nonirrigated: 4w

Hydric soil: yes

Hydrologic group: A/D

Potential frost action: moderate

Representative soil profile:

Texture

A --	0 to 5 in	loamy sand
Cg1,Cg2 --	5 to 60 in	sand

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>
rapid	0.4 to 1.0 in	5.6 to 7.8
rapid	2.7 to 3.8 in	5.6 to 8.4

RLIR--Red lake indian reservation

Red lake indian reservation, (not mapped)

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s):

Flooding:

Ponding:

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw (surface layer):

Land capability class, nonirrigated:

Hydric soil:

Hydrologic group:

Potential frost action:

Representative soil profile:

Texture

<i>Permeability</i>	<i>Available water</i>	
	<i>capacity</i>	<i>pH</i>

W--Water

This report shows only the major soils in each map unit

Map Unit Description (MN)

Clearwater 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]

W--Water

Water

Extent: 100 percent of the unit

Landform(s):

Slope gradient:

Parent material:

Restrictive feature(s):

Flooding: none

Ponding: none

Drainage class:

Soil loss tolerance (T factor):

Wind erodibility group (WEG):

Wind erodibility index (WEI):

Kw (surface layer):

Land capability class, nonirrigated:

Hydric soil: unranked

Hydrologic group:

Potential 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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This report provides a semi tabular listing of some soil and site properties and interpretations valuable in communicating the concept of a map unit. It also includes commonly used conservation planning information in one place for easy access. Major soil components are always displayed and minor components are also displayed if they are included in the database and they are selected at the time the report is generated.

This report shows only the major soils in each map unit