USDA United States Department of Agriculture Natural Resources Conservation Service

Web Soil Survey

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A A A

Area of Interest (AOI) | Soil Map | Soil Data Explorer | Shopping Cart (Free)

Printable Version | Add to Shopping Cart

Search

Map Unit Legend

Le Sueur County, Minnesota (MN079)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
106B	Lester loam, 2 to 6 percent slopes	0.2	0.5%
106C2	Lester loam, 6 to 12 percent slopes, eroded	21.2	42.2%
106D2	Lester loam, 12 to 18 percent slopes, eroded	5.4	10.8%
109	Cordova clay loam	1.0	2.0%
114	Glencoe clay loam	6.1	12.1%
239B	Le Sueur clay loam, 1 to 4 percent slopes	3.2	6.4%
414	Hamel clay loam	1.8	3.6%
945F	Lester-Storden loams, 18 to 40 percent slopes	4.0	7.9%
W	Water	7.3	14.5%
Totals for Area of Interest		**50.3**	**100.0%**

Soil Map

Scale (not to scale)

Warning: Soil Map may not be valid at this scale.

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University of Minnesota
Soil Testing Laboratory

SOIL TEST REPORT

Farm and Field

Client Copy

Department of Soil, Water, and Climate
Minnesota Extension Service
Agricultural Experiment Station

WASHINGTON TWP. - LE SUEUR

BRAD CARLSON
MINNESOTA EXTENSION REGIONAL OFFICE
1961 PREMIER DR SUITE 110
MANKATO MN 56001

Page	1
Report No.	55750
Laboratory No.	116239
Date Received	05/01/13
Date Reported	05/13/13

INTERPRETATION OF SOIL TEST RESULTS

Soil Texture Code:											
C (coarse): sand, loamy sand, sandy loam	HIGH		PROBLEM	EXCESSIVE	9		ALKALINE	N			
					8			N			K
								N			K
M (medium): loam, silt loam	MED				7	H		N		P	K
						H		N	P	P	K
F (fine): clay loam, silty clay loam, silty clay						H		N	P	P	K
		O			6	H	ACID	N	P	P	K
	LOW	O	OK			H		N	P	P	K
		O			5	H		N	P	P	K

Very High

Very Low

SOIL TEST RESULTS

Sample/ Field Number	Estimated Soil Texture	Organic Matter %	Soluble Salts mmhos/cm	pH	Buffer Index	Nitrate NO3-N ppm	Olsen Phosphorus ppm P	Bray 1 Phosphorus ppm P	Potassium ppm K	Sulfur SO4 -S ppm	Zinc ppm	Iron ppm	Manganese ppm	Copper ppm	Boron ppm	Calcium ppm	Magnesium ppm
LSTR	**Medium**	**2.5**		**7.5**		**40.7**	**9**	**11**	**134**								

RECOMMENDATIONS

Crop Before Last: Corn, Grain; Last Crop: Corn, Grain

Crop and Yield Goal	Method	Lime #ENP/A	N lb/A	P2O5 lb/A	K2O lb/A	S lb/A	Zn lb/A	Fe lb/A	Mn lb/A	Cu lb/A	B lb/A	Ca lb/A	Mg lb/A
Corn, Grain	Broadcast	**0**		**45**	**25**								
180 bu./acre	Row/Drill			**30**	**10-15**								
Comments: 5,11,18													
Soybeans	Broadcast	**0**	**0**	**0**	**0**								
60 bu./acre	Row/Drill												
Comments: 4,5,18,19													
Alfalfa, New Seed	Broadcast	**0**	**0**	**40**	**15**								
6 tons/acre	Row/Drill												
Comments: 1,4,5,18													

County: LE SUEUR. For additional information, contact the soil extension specialist: DANIEL KAISER 612-624-3482 Website: http://soiltest.cfans.umn.edu

University of Minnesota
Soil Testing Laboratory

SOIL TEST REPORT

Farm and Field

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Page	**2**
Report No.	**55750**
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INTERPRETATION OF SOIL TEST RESULTS

Soil Texture Code:
C (coarse): sand, loamy sand, sandy loam
M (medium): loam, silt loam
F (fine): clay loam, silt clay loam, silty clay

HIGH		PROBLEM	EXCESSIVE	9	ALKALINE		P	K
						N	P	K
				8		N	P	K
MED	O					N	P	K
	O			7		N	P	K
	O					N	P	K
	O			6	H	N	P	K
	O				H	N	P	K
LOW	O	OK			H	N	P	K
	O			5	H	N	P	K

Very High

Very Low

SOIL TEST RESULTS

Sample/ Field Number	Estimated Soil Texture	Organic Matter %	Soluble Salts mmhos/cm	pH	Buffer Index	Nitrate NO3-N ppm	Olsen Phosphorus ppm P	Bray 1 Phosphorus ppm P	Potassium ppm K	Sulfur SO4 -S ppm	Zinc ppm	Iron ppm	Manganese ppm	Copper ppm	Boron ppm	Calcium ppm	Magnesium ppm
GLCO	**Medium**	**3.6**		**6.1**		**18.8**		**35**	**218**								

RECOMMENDATIONS

Crop Before Last: Corn, Grain; Last Crop: Corn, Grain

Crop and Yield Goal	Method	Lime #ENP/A	N lb/A	P2O5 lb/A	K2O lb/A	S lb/A	Zn lb/A	Fe lb/A	Mn lb/A	Cu lb/A	B lb/A	Ca lb/A	Mg lb/A
Corn, Grain	Broadcast	**0**		**0**	**0**								
180 bu./acre	Row/Drill			**10-15**	**10-15**								
Comments: 4,18													
Soybeans	Broadcast	**0**	**0**	**0**	**0**								
60 bu./acre	Row/Drill												
Comments: 4,5,18,19													
Alfalfa, New Seed	Broadcast	**3000**	**0**	**0**	**0**								
6 tons/acre	Row/Drill												
Comments: 1,3,4,5,18,24													

County: LE SUEUR. For additional information, contact the soil extension specialist: DANIEL KAISER 612-624-3482 Website: http://soiltest.cfans.umn.edu

Search

Properties and Qualities Ratings

Open All | Close All

- Soil Chemical Properties
- Soil Erosion Factors
- Soil Physical Properties
- **Soil Qualities and Features**
  - AASHTO Group Classification (Surface)
  - Depth to a Selected Soil Restrictive Layer
  - Depth to Any Soil Restrictive Layer
  - Drainage Class
  - Frost Action
  - Frost-Free Days
  - Hydrologic Soil Group
  - Map Unit Name
  - **Parent Material Name**

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff

Tie-break Rule: ◉ Lower ○ Higher

View Description | View Rating

- Representative Slope
- Unified Soil Classification (Surface)
- Water Features

Map — Parent Material Name

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Parent Material Name — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area			**0.1**	**0.1%**

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
106B	Lester loam, 2 to 6 percent slopes	fine-loamy till	0.2	0.4%
106C2	Lester loam, 6 to 12 percent slopes, eroded	fine-loamy till	21.0	41.4%
106D2	Lester loam, 12 to 18 percent slopes, eroded	fine-loamy till	5.5	10.8%
109	Cordova clay loam	fine-loamy till	1.1	2.1%
114	Glencoe clay loam	fine-loamy alluvium over fine-loamy till	6.2	12.3%
239B	Le Sueur clay loam, 1 to 4 percent slopes	fine-loamy till	3.2	6.4%
414	Hamel clay loam	fine-loamy colluvium	1.8	3.5%
945F	Lester-Storden loams, 18 to 40 percent slopes	fine-loamy till	4.3	8.5%
W	Water		7.3	14.4%
Subtotals for Soil Survey Area			**50.6**	**99.9%**
Totals for Area of Interest			**50.7**	**100.0%**

Description — Parent Material Name

Parent material name is a term for the general physical, chemical, and mineralogical composition of the unconsolidated material, mineral or organic, in which the soil forms. Mode of deposition and/or weathering may be implied by the name.

The soil surveyor uses parent material to develop a model used for soil mapping. Soil scientists and specialists in other disciplines use parent material to help interpret soil boundaries and project performance of the material below the soil. Many soil properties relate to parent material. Among these properties are proportions of sand, silt, and clay; chemical content; bulk density; structure; and the kinds and amounts of rock fragments. These properties affect interpretations and may be criteria used to separate soil series. Soil properties and landscape information may imply the kind of parent material.

For each soil in the database, one or more parent materials may be identified. One is marked as the representative or most commonly occurring. The representative parent material name is presented here.

Rating Options — Parent Material Name

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

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Properties and Qualities Ratings

Open All | Close All

- Soil Chemical Properties
- **Soil Erosion Factors**
  - K Factor, Rock Free
  - K Factor, Whole Soil
  - T Factor
  - Wind Erodibility Group
  - Wind Erodibility Index
- **Soil Physical Properties**
  - Available Water Capacity
  - Available Water Supply, 0 to 100 cm
  - Available Water Supply, 0 to 150 cm
  - Available Water Supply, 0 to 25 cm
  - Available Water Supply, 0 to 50 cm
  - Bulk Density, 15 Bar
  - Bulk Density, One-Tenth Bar
  - Bulk Density, One-Third Bar
  - Linear Extensibility
  - Liquid Limit
  - Organic Matter
  - Percent Clay
  - Percent Sand
  - Percent Silt
  - Plasticity Index
  - Saturated Hydraulic Conductivity (Ksat)
  - Saturated Hydraulic Conductivity (Ksat), Standard Classes
  - **Surface Texture**

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☐

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff

Tie-break Rule: ◉ Lower ○ Higher

Layer Options: ◉ Surface Layer ○ Depth Range

Top Depth

Bottom Depth

○ Inches ◉ Centimeters

○ All Layers

View Description | View Rating

- Water Content, 15 Bar
- Water Content, One-Third Bar
- Soil Qualities and Features
- Water Features

Map — Surface Texture

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Surface Texture — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area			**0.1**	**0.1%**

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
106B	Lester loam, 2 to 6 percent slopes	loam	0.2	0.4%
106C2	Lester loam, 6 to 12 percent slopes, eroded	loam	21.0	41.4%
106D2	Lester loam, 12 to 18 percent slopes, eroded	loam	5.5	10.8%
109	Cordova clay loam	clay loam	1.1	2.1%
114	Glencoe clay loam	clay loam	6.2	12.3%
239B	Le Sueur clay loam, 1 to 4 percent slopes	clay loam	3.2	6.4%
414	Hamel clay loam	clay loam	1.8	3.5%
945F	Lester-Storden loams, 18 to 40 percent slopes	loam	4.3	8.5%
W	Water		7.3	14.4%
Subtotals for Soil Survey Area			**50.6**	**99.9%**
Totals for Area of Interest			**50.7**	**100.0%**

Description — Surface Texture

This displays the representative texture class and modifier of the surface horizon.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Rating Options — Surface Texture

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Layer Options: Surface Layer

Search

Suitabilities and Limitations Ratings

Open All | Close All

- Building Site Development
- Construction Materials
- Disaster Recovery Planning
- Land Classifications
- Land Management
- Military Operations
- Recreational Development
- Sanitary Facilities
- **Vegetative Productivity**
  - **Crop Productivity Index**

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

View Description | View Rating

- Forest Productivity (Cubic Feet per Acre per Year)
- Forest Productivity (Tree Site Index)
- Range Production (Favorable Year)
- Range Production (Normal Year)
- Range Production (Unfavorable Year)
- Yields of Irrigated Crops (Component)
- Yields of Irrigated Crops (Map Unit)
- Yields of Non-Irrigated Crops (Component)
- Yields of Non-Irrigated Crops (Map Unit)
- Waste Management
- Water Management

Map — Crop Productivity Index

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Crop Productivity Index — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating	Acres in AOI	Pe
Subtotals for Soil Survey Area			**0.1**	

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating	Acres in AOI	Pe
106B	Lester loam, 2 to 6 percent slopes	91	0.2	
106C2	Lester loam, 6 to 12 percent slopes, eroded	76	21.0	
106D2	Lester loam, 12 to 18 percent slopes, eroded	67	5.5	
109	Cordova clay loam	87	1.1	
114	Glencoe clay loam	86	6.2	
Totals for Area of Interest			**50.7**	

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating	Acres in AOI	Pe
239B	Le Sueur clay loam, 1 to 4 percent slopes	98	3.2	
414	Hamel clay loam	94	1.8	
945F	Lester-Storden loams, 18 to 40 percent slopes	6	4.3	
W	Water	0	7.3	
Subtotals for Soil Survey Area			**50.6**	
Totals for Area of Interest			**50.7**	

Description — Crop Productivity Index

Crop productivity index ratings provide a relative ranking of soils based on their potential for i production. An index can be used to rate the potential yield of one soil against that of another time. Ratings range from 0 to 100. The higher numbers indicate higher production potential. crop specific.

When the soils are rated, the following assumptions are made: a) adequate management, b) conditions (no irrigation), c) artificial drainage where required, d) no frequent flooding on the and e) no land leveling or terracing. Even though predicted average yields will change with tir productivity indices are expected to remain relatively constant in relation to one another over

Rating Options — Crop Productivity Index

Aggregation Method: Weighted Average

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Interpret Nulls as Zero: Yes

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A A A

Area of Interest (AOI) | Soil Map | **Soil Data Explorer** | Shopping Cart (Free)

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Intro to Soils | Suitabilities and Limitations for Use | **Soil Properties and Qualities** | Ecological Site Assessment | Soil Reports

Search

Properties and Qualities Ratings

Open All | Close All

Soil Chemical Properties

Soil Erosion Factors

Soil Physical Properties

Soil Qualities and Features

Water Features

Depth to Water Table

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Component

Component Percent Cutoff:

Tie-break Rule: ◉ Lower ○ Higher

Interpret Nulls as Zero: ○ Yes ◉ No

Beginning Month: January

Ending Month: December

View Description | View Rating

Flooding Frequency Class

Ponding Frequency Class

Map — Depth to Water Table

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Depth to Water Table — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area			**0.1**	**0.1%**

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
106B	Lester loam, 2 to 6 percent slopes	110	0.2	0.4%
106C2	Lester loam, 6 to 12 percent slopes, eroded	>200	21.0	41.4%
106D2	Lester loam, 12 to 18 percent slopes, eroded	>200	5.5	10.8%
109	Cordova clay loam	15	1.1	2.1%
114	Glencoe clay loam	0	6.2	12.3%
239B	Le Sueur clay loam, 1 to 4 percent slopes	45	3.2	6.4%
414	Hamel clay loam	15	1.8	3.5%
945F	Lester-Storden loams, 18 to 40 percent slopes	>200	4.3	8.5%
W	Water	>200	7.3	14.4%
Totals for Area of Interest			**50.7**	**100.0%**

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating (centimeters)	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area			**50.6**	**99.9%**
Totals for Area of Interest			**50.7**	**100.0%**

Description — Depth to Water Table

"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Rating Options — Depth to Water Table

Units of Measure: centimeters

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

Interpret Nulls as Zero: No

Beginning Month: January

Ending Month: December

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Search

Properties and Qualities Ratings

Open All | Close All

- Soil Chemical Properties
- Soil Erosion Factors
- Soil Physical Properties
- Soil Qualities and Features
- **Water Features**
  - Depth to Water Table
  - Flooding Frequency Class
  - **Ponding Frequency Class**

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff:

Tie-break Rule: ○ Less Frequent ◉ More Frequent

Beginning Month: January

Ending Month: December

View Description | View Rating

Map — Ponding Frequency Class

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Ponding Frequency Class — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area			**0.1**	**0.1%**

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
106B	Lester loam, 2 to 6 percent slopes	None	0.2	0.4%
106C2	Lester loam, 6 to 12 percent slopes, eroded	None	21.0	41.4%
106D2	Lester loam, 12 to 18 percent slopes, eroded	None	5.5	10.8%
109	Cordova clay loam	None	1.1	2.1%
114	Glencoe clay loam	Frequent	6.2	12.3%
239B	Le Sueur clay loam, 1 to 4 percent slopes	None	3.2	6.4%
414	Hamel clay loam	None	1.8	3.5%
945F	Lester-Storden loams, 18 to 40 percent slopes	None	4.3	8.5%
W	Water	None	7.3	14.4%
Subtotals for Soil Survey Area			**50.6**	**99.9%**
Totals for Area of Interest			**50.7**	**100.0%**

Description — Ponding Frequency Class

Ponding is standing water in a closed depression. The water is removed only by deep percolation, transpiration, or evaporation or by a combination of these processes. Ponding frequency classes are based on the number of times that ponding occurs over a given period. Frequency is expressed as none, rare, occasional, and frequent.

"None" means that ponding is not probable. The chance of ponding is nearly 0 percent in any year.

"Rare" means that ponding is unlikely but possible under unusual weather conditions. The chance of ponding is nearly 0 percent to 5 percent in any year.

"Occasional" means that ponding occurs, on the average, once or less in 2 years. The chance of ponding is 5 to 50 percent in any year.

"Frequent" means that ponding occurs, on the average, more than once in 2 years. The chance of ponding is more than 50 percent in any year.

Rating Options — Ponding Frequency Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: More Frequent

Beginning Month: January

Ending Month: December

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Search

Properties and Qualities Ratings

Open All | Close All

- Soil Chemical Properties
- **Soil Erosion Factors**
  - K Factor, Rock Free
  - K Factor, Whole Soil
  - T Factor
  - Wind Erodibility Group
  - Wind Erodibility Index
- **Soil Physical Properties**
  - Available Water Capacity
  - Available Water Supply, 0 to 100 cm
  - Available Water Supply, 0 to 150 cm
  - Available Water Supply, 0 to 25 cm
  - Available Water Supply, 0 to 50 cm
  - Bulk Density, 15 Bar
  - Bulk Density, One-Tenth Bar
  - Bulk Density, One-Third Bar
  - Linear Extensibility
  - Liquid Limit
  - **Organic Matter**

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Component

Component Percent Cutoff:

Tie-break Rule: ○ Lower ◉ Higher

Interpret Nulls as Zero: ○ Yes ◉ No

Layer Options: ○ Surface Layer ◉ Depth Range

Top Depth: 0

Bottom Depth: 6

○ Inches ◉ Centimeters

○ All Layers

View Description | View Rating

- Percent Clay
- Percent Sand
- Percent Silt
- Plasticity Index
- Saturated Hydraulic Conductivity (Ksat)
- Saturated Hydraulic Conductivity (Ksat), Standard Classes
- Surface Texture
- Water Content, 15 Bar
- Water Content, One-Third Bar

Map — Organic Matter

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Organic Matter — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area			**0.1**	**0.1%**

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
106B	Lester loam, 2 to 6 percent slopes	3.50	0.2	0.4%
106C2	Lester loam, 6 to 12 percent slopes, eroded	2.50	21.0	41.4%
106D2	Lester loam, 12 to 18 percent slopes, eroded	2.50	5.5	10.8%
109	Cordova clay loam	5.50	1.1	2.1%
114	Glencoe clay loam	7.50	6.2	12.3%
239B	Le Sueur clay loam, 1 to 4 percent slopes	5.00	3.2	6.4%
414	Hamel clay loam	6.00	1.8	3.5%
945F	Lester-Storden loams, 18 to 40 percent slopes	4.00	4.3	8.5%
W	Water		7.3	14.4%
Subtotals for Soil Survey Area			**50.6**	**99.9%**
Totals for Area of Interest			**50.7**	**100.0%**

Description — Organic Matter

Soil Qualities and Features Water Features	Organic matter is the plant and animal residue in the soil at various stages of decomposition. The estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms. An irregular distribution of organic carbon with depth may indicate different episodes of soil deposition or soil formation. Soils that are very high in organic matter have poor engineering properties and subside upon drying. For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.
	Rating Options — Organic Matter **Units of Measure:** percent **Aggregation Method:** Dominant Component **Component Percent Cutoff:** *None Specified* **Tie-break Rule:** Higher **Interpret Nulls as Zero:** No **Layer Options:** Depth Range **Top Depth:** 0 **Bottom Depth:** 6 **Units of Measure:** Centimeters

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Properties and Qualities Ratings

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- Soil Chemical Properties
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  - Wind Erodibility Group
  - Wind Erodibility Index
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- **Soil Qualities and Features**
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  - **Drainage Class**

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Condition

Component Percent Cutoff:

Tie-break Rule: ○ Lower ◉ Higher

View Description | View Rating

- Frost Action
- Frost-Free Days
- Hydrologic Soil Group
- Map Unit Name
- Parent Material Name
- Representative Slope
- Unified Soil Classification (Surface)
- Water Features

Map — Drainage Class

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Drainage Class — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area			**0.1**	**0.1%**

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
106B	Lester loam, 2 to 6 percent slopes	Well drained	0.2	0.4%
106C2	Lester loam, 6 to 12 percent slopes, eroded	Well drained	21.0	41.4%
106D2	Lester loam, 12 to 18 percent slopes, eroded	Well drained	5.5	10.8%
109	Cordova clay loam	Poorly drained	1.1	2.1%
114	Glencoe clay loam	Very poorly drained	6.2	12.3%
239B	Le Sueur clay loam, 1 to 4 percent slopes	Moderately well drained	3.2	6.4%
414	Hamel clay loam	Poorly drained	1.8	3.5%
945F	Lester-Storden loams, 18 to 40 percent slopes	Well drained	4.3	8.5%
W	Water		7.3	14.4%
Subtotals for Soil Survey Area			**50.6**	**99.9%**
Totals for Area of Interest			**50.7**	**100.0%**

Description — Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Rating Options — Drainage Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Search

Properties and Qualities Ratings

Open All | Close All

- Soil Chemical Properties
- Soil Erosion Factors
- Soil Physical Properties
- **Soil Qualities and Features**
  - AASHTO Group Classification (Surface)
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  - Drainage Class
  - Frost Action
  - Frost-Free Days
  - Hydrologic Soil Group
  - Map Unit Name
  - Parent Material Name
  - **Representative Slope**

View Description | View Rating

View Options

Map ☑

Table ☑

Description of Rating ☑

Rating Options ☑

☐ Detailed Description

Advanced Options

Aggregation Method: Dominant Component

Component Percent Cutoff

Tie-break Rule: ○ Lower ◉ Higher

Interpret Nulls as Zero: ○ Yes ◉ No

View Description | View Rating

- Unified Soil Classification (Surface)

Water Features

Map — Representative Slope

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Representative Slope — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	P
Subtotals for Soil Survey Area			**0.1**	

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	P
106B	Lester loam, 2 to 6 percent slopes	4.0	0.2	
106C2	Lester loam, 6 to 12 percent slopes, eroded	9.0	21.0	
106D2	Lester loam, 12 to 18 percent slopes, eroded	15.0	5.5	
109	Cordova clay loam	1.0	1.1	
114	Glencoe clay loam	0.5	6.2	
Totals for Area of Interest			**50.7**	

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	P
239B	Le Sueur clay loam, 1 to 4 percent slopes	2.5	3.2	
414	Hamel clay loam	2.0	1.8	
945F	Lester-Storden loams, 18 to 40 percent slopes	30.0	4.3	
W	Water		7.3	
Subtotals for Soil Survey Area			**50.6**	
Totals for Area of Interest			**50.7**	

Description — Representative Slope

Slope gradient is the difference in elevation between two points, expressed as a percentage o between those points.

The slope gradient is actually recorded as three separate values in the database. A low value indicate the range of this attribute for the soil component. A "representative" value indicates t value of this attribute for the component. For this soil property, only the representative value

Rating Options — Representative Slope

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

Interpret Nulls as Zero: No

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USDA United States Department of Agriculture Natural Resources Conservation Service

Web Soil Survey

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A A A

Area of Interest (AOI) | Soil Map | **Soil Data Explorer** | Shopping Cart (Free)

View Soil Information By Use: All Uses

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Intro to Soils | **Suitabilities and Limitations for Use** | Soil Properties and Qualities | Ecological Site Assessment | Soil Reports

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Suitabilities and Limitations Ratings

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- Construction Materials
- Disaster Recovery Planning
- Land Classifications
- **Land Management**
  - Construction Limitations for Haul Roads and Log Landings
  - **Erosion Hazard (Off-Road, Off-Trail)**

View Description | View Rating

View Options

- Map ☑
- Table ☑
  - ☑ Component Breakdown and Rating Reasons
    - ☑ Numeric Values
- Description of Rating ☑
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Advanced Options

View Description | View Rating

- Erosion Hazard (Road, Trail)
- Harvest Equipment Operability
- Mechanical Site Preparation (Deep)
- Mechanical Site Preparation (Surface)
- Potential for Damage by Fire
- Potential for Seedling Mortality
- Soil Rutting Hazard
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- Suitability for Log Landings
- Suitability for Mechanical Planting
- Suitability for Roads (Natural Surface)
- Military Operations
- Recreational Development
- Sanitary Facilities
- Vegetative Productivity
- Waste Management
- Water Management

Map — Erosion Hazard (Off-Road, Off-Trail)

Scale (not to scale)

Warning: Soil Ratings Map may not be valid at this scale.

Tables — Erosion Hazard (Off-Road, Off-Trail) — Summary By Map Unit

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Subtotals for Soil Survey Area					**0.1**	**0.1%**

Summary by Map Unit — Le Sueur County, Minnesota (MN079)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
106B	Lester loam, 2 to 6 percent slopes	Slight	Lester (90%)		0.2	0.4%
106C2	Lester loam, 6 to 12 percent slopes, eroded	Slight	Lester, eroded (90%)		21.0	41.4%
106D2	Lester loam, 12 to 18 percent slopes, eroded	Moderate	Lester, eroded (90%)	Slope/erodibility (0.50)	5.5	10.8%
109	Cordova clay loam	Slight	Cordova (90%)		1.1	2.1%
114	Glencoe clay loam	Slight	Glencoe (85%)		6.2	12.3%
239B	Le Sueur clay loam, 1 to 4 percent slopes	Slight	Le Sueur (90%)		3.2	6.4%
Totals for Area of Interest					**50.7**	**100.0%**

Summary by Map Unit — Blue Earth County, Minnesota (MN013)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
414	Hamel clay loam	Slight	Hamel (90%)		1.8	3.5%
945F	Lester-Storden loams, 18 to 40 percent slopes	Moderate	Lester (50%)	Slope/erodibility (0.50)	4.3	8.5%
			Storden (25%)	Slope/erodibility (0.50)		
W	Water	Not rated	Water (100%)		7.3	14.4%
Subtotals for Soil Survey Area					**50.6**	**99.9%**
Totals for Area of Interest					**50.7**	**100.0%**

Table — Erosion Hazard (Off-Road, Off-Trail) — Summary by Rating Value

Summary by Rating Value

Rating	Acres in AOI	Percent of AOI
Slight	33.5	66.2%
Moderate	9.8	19.4%
Null or Not Rated	7.3	14.4%
Totals for Area of Interest	**50.7**	**100.0%**

Description — Erosion Hazard (Off-Road, Off-Trail)

The ratings in this interpretation indicate the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface. The ratings are based on slope and soil erosion factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

The ratings are both verbal and numerical. The hazard is described as "slight," "moderate," "severe," or "very severe." A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions; "moderate" indicates that some erosion is likely and that erosion-control measures may be needed; "severe" indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and "very severe" indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options — Erosion Hazard (Off-Road, Off-Trail)

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher

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